BIOLOGICAL RESOURCES TECHNICAL REPORT

OCOTILLO SOL PROJECT

IMPERIAL COUNTY, CALIFORNIA

LSA

May 2011

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EXECUTIVE SUMMARY

LSA Associates, Inc. (LSA) was retained by San Diego Gas & Electric (SDG&E) to prepare a general biological resources assessment report for the proposed approximately 100-acre Ocotillo Sol Project (project) and the associated approximately 15-acre temporary vehicle and equipment staging area. The purpose of the project is to provide electricity for public consumption via interconnection with the Imperial Valley Substation and the SDG&E electrical grid, representing an opportunity to provide a source of low-polluting energy from renewable sources to the region.

The proposed project consists of developing and operating a 12–14-megawatt (MW) photovoltaic (PV) electric generation facility on presently undeveloped lands adjacent to and south of SDG&E's Imperial Valley Substation located south of Interstate 8 and west of El Centro in an unincorporated portion of the Yuha Desert in Imperial County, California. The original survey area consisted of approximately 350 acres surrounding the majority of the substation. Based on biological and cultural resources constraints, the 115-acre project site was identified, allowing the reduction of the survey area to approximately 142 acres. The existing substation and proposed PV array site are located on land under the jurisdiction of the Bureau of Land Management (BLM).

LSA prepared this report to support analysis pursuant to the National Environmental Policy Act (NEPA), in support of the BLM review and approval process for assessing potential project-related impacts to biological resources. This report may also support project permitting from State and Federal biological resources agencies (e.g., U.S. Fish and Wildlife Service [USFWS] and the California Department of Fish and Game [CDFG]). All biologists were pre-approved by the BLM prior to conducting field surveys.

In October 2009, LSA biologists initiated general biological field surveys to assess existing biological resources and conduct habitat suitability assessments to determine the potential for special status plants and animals to occur within the initial 350-acre study area (also referred to herein as the spring survey area). Special attention was focused on special status plants and animals identified through a literature review conducted prior to the field surveys. Concurrently with these general biological surveys, additional LSA biologists conducted a formal jurisdictional delineation to determine the presence or absence of areas potentially subject to jurisdiction of the CDFG, Regional Water Quality Control Board (RWQCB), and U.S. Army Corps of Engineers (USACE) pursuant to the Federal Clean Water Act (CWA) Section 401, CWA Section 404, and Section 1600 et seq. of the California Fish and Game Code, respectively.

The project site is relatively flat and located in a primarily undeveloped portion of the Yuha Desert, with elevations ranging from approximately 30 feet above mean sea level (amsl) in the northwestern corner to approximately 10 feet amsl in the southeastern corner. No wetland or non-wetland waters of the U.S. potentially subject to USACE or RWQCB jurisdiction were observed in the project area; however, Pinto Wash, which consists of streambed and banks potentially subject to CDFG jurisdiction, is located in the southeast corner of the spring survey area, approximately 540 feet

outside of the proposed 115-acre project limits. No USFWS designated Critical Habitat for any plant or wildlife species occurs within the project area.

The vegetation within the project site consists of low- to moderate-quality Sonoran creosote bush scrub (Holland 1986) (*Larrea tridentata – Ambrosia dumosa* Alliance; CDFG 2007), which provides moderately suitable habitat for a variety of native and otherwise special status wildlife species. The *Larrea tridentata – Ambrosia dumosa* Alliance is not considered a special status natural community by the BLM.

From late September 2009 to late March 2011, LSA biologists conducted the following focused species surveys in accordance with accepted survey protocols: flat-tailed horned lizard (*Phrynosoma mcallii*; FTHL) survey,[1] burrowing owl (*Athene cunicularia*) survey, rare plant survey, and avian point-count surveys. Focused species surveys in the fall of 2009 and spring of 2010 were conducted throughout a 350-acre survey area (spring survey area), with the exception of the FTHL surveys, which were conducted within an approximately 300-acre survey area. Based on the results of biological and cultural resources surveys, the 115-acre project site was identified within the larger 350-acre study area, and the survey area for subsequent focused species surveys (fall survey area) included this 115-acre area plus a 150-foot buffer in adjacent undeveloped areas, for a total of approximately 142 acres.

One target plant species, Thurber's pilostyles (*Pilostyles thurberi*), a California Rare Plant Rank 4 species, was found within the 350-acre spring survey area, but outside of the 142-acre fall survey area. No State-listed or Federally-listed Threatened, Endangered, or Candidate plant species or any other special status plant species were observed during the surveys. Based on the level of disturbance within the survey area and the results of the focused rare plant survey, no special status plant species are expected to occur within the project site.

Horned lizard scat was found on all ten study plots during the focused FTHL survey; however, no individuals of FTHL were observed. A carcass and an individual FTHL were observed during later site visits associated with surveys for other resources. Suitable FTHL habitat is present throughout project site and the entire project site (115 acres) is considered to be occupied by FTHL in accordance the protocol provided in the *Flat-Tailed Horned Lizard Rangewide Management Strategy* (FTHLRMS; Flat-tailed Horned Lizard Interagency Coordinating Committee 2003) for determination of FTHL presence. FTHL is a BLM Sensitive species and a California Species of Special Concern.

Burrowing owls were observed on the project site during the fall burrow survey and during surveys conducted during winter 2009/2010, but not during the breeding season survey or during the spring avian point-count survey. However, a burrowing owl was subsequently observed on the project site during a focused rare plant survey in March 2010. It is likely that owls utilize the site primarily during the non-breeding season. The entire project site is suitable for burrowing owl. Burrowing owl is a BLM Sensitive species and a California Species of Special Concern.

[1] FTHL surveys were conducted prior to the general biological surveys due to survey timing requirements and known potential for the species to occur on the site; additionally, the survey area was limited to approximately 300 acres.

1.0 INTRODUCTION

At the request of San Diego Gas & Electric Company (SDG&E), LSA Associates, Inc. (LSA) has prepared this biological resources technical report for the Bureau of Land Management (BLM) to supplement the application for the development and operation of the proposed 115-acre Ocotillo Sol Project (project), a 12–14-megawatt (MW) photovoltaic (PV) electric generation facility located south of Interstate 8 (I-8) and west of El Centro in an unincorporated portion of the Yuha Desert in Imperial County, California (Figure 1).

This report describes the biological resources record searches and literature review, survey methodologies, and results of the general and focused surveys conducted on the project site to determine the presence or potential occurrence of State-listed or Federally-listed as Threatened, Endangered, and other special status plants, animals and natural communities. Potential impacts to biological resources within the study area are discussed.

1.1 PROJECT LOCATION

The proposed project is located on land managed by the BLM in the Yuha Desert of the lower Imperial Valley, south of I-8 and west of El Centro. The approximately 115-acre project site is within portions of Section 3 of Township 16.5 South, Range 12 East, as shown on the United States Geological Survey (USGS) *Mount Signal, California* 7.5-minute topographic quadrangle map (Figure 1).

The project location offers optimal atmospheric conditions for the type of project proposed. As a desert environment, the typical atmospheric conditions in the Yuha Desert allow for abundant sunshine on an annual basis, thereby representing a sustainable, renewable, and reliable source for solar energy production.

1.2 PROJECT DESCRIPTION

SDG&E proposes to develop, build, own, and operate a long-term PV electric generation facility in Imperial County, California, on primarily undeveloped Federal land surrounding the SDG&E Imperial Valley Substation. The project's purpose is to generate approximately 12–14 MW of low-polluting renewable energy utilizing the abundant solar resource available in Imperial County. The project will be located on approximately 100 acres south and southwest of, and adjacent to, SDG&E's Imperial Valley Substation, with an additional 15 acres to be used for temporary staging of equipment during construction.

The project will consist of ground-mounted PV systems containing PV panels, panel racking systems, system monitoring equipment, direct current collection wiring, direct-to-alternating current inverters, low-voltage alternating current wiring, step-up transformers, and interconnection wiring. Other structures and project features will include unpaved access/maintenance aisle ways, a small

Figure 1: Project Location

maintenance building, and security fencing. PV panels will be mounted on panel racking systems attached to ground-mounted posts. Rows of panels will be physically and electrically grouped together in blocks with the panels rows tilted upward and pointed to the south or southwest. The PV panel rows will be separated so they do not shade each other. Panels systems are low-profile with the highest portion of the tilted panel about 3–4 feet off the ground.

The project electrical system will consist of direct current wiring systems that emanate from panel rows and are routed underground to collection points that group rows of panels together. From the collection points, additional underground wiring will transmit direct current energy to inverters where the energy is converted to alternating current. From the inverters, the power is transmitted via underground cables to a step-up transformer. Interconnection wiring will transmit the power from the step-up transformer to the transmission bus in the Imperial Valley Substation for interconnection and transmission into the SDG&E electrical grid.

1.3 REGULATORY SETTING

1.3.1 National Environmental Policy Act (NEPA)

Since the project site is located on Federal lands, analysis pursuant to the National Environmental Policy Act (NEPA) is required. NEPA defines procedures for environmental review and impact analysis of projects that need approval by Federal agencies. NEPA requires that the potential environmental impacts of a proposed project be assessed, quantified, disclosed, minimized, and eliminated whenever possible.

Under NEPA, impacts to biological resources such as natural communities, plants, and wildlife must be analyzed. Direct, indirect, and cumulative impacts to biological resources protected under the Federal and California Endangered Species Acts (FESA and CESA, respectively), Migratory Bird Treaty Act (MBTA), Federal Clean Water Act (CWA), Bald Eagle Protection Act, and local policies and ordinances are included in the NEPA analysis.

Direct effects are impacts that occur at the same time and in the location of the actual construction work. The impacts associated with construction activities have the potential to result in the destruction, disturbance, and removal of plants, animals, watercourses, and natural communities.

Indirect effects are impacts caused by the project action but are later in time or farther in distance from the actual project construction. Indirect effects include growth inducement, changes in land use patterns, increased human intrusion, population growth, noise, and impacts to air quality, wind movements, water quality, hydrology, natural communities, wildlife movement, and regional ecosystems.

NEPA defines a cumulative impact as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR § 1508.7).

Cumulative impact assessments include the consequences triggered by the impacts affecting resources that function as part of a larger complex natural system, and effects which may be removed in time and space and may not be apparent when only considering the local and short-term direct impacts.

1.3.2 Federal Endangered Species Act

Under provisions of Section 7(a) (2) of FESA, a Federal agency that permits, licenses, funds, or otherwise authorizes a project activity must consult with the U.S. Fish and Wildlife Service (USFWS) to ensure that its actions would not jeopardize the continued existence of any Federally-listed as Threatened or Endangered species or destroy or adversely modify designated Critical Habitat. The USFWS designates as Threatened or Endangered species that are at risk of extinction and may also adopt recovery plans that identify specific areas that are essential to the conservation of a listed species. Critical Habitat areas that may require special management considerations or protections can also be designated.

1.3.3 Migratory Bird Treaty Act

The MBTA (U.S.C Title 16, Chapter 7, Subchapter II, Sections 703–712), as amended, governs take, possession, import, export, transport, selling, purchasing, or bartering of migratory birds, their eggs, parts, and nests, except as authorized under a valid permit (50 CFR 21.11). The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes, and requiring harvests to be limited to levels that prevent over-utilization. Section 704 of the MBTA states that the Secretary of the Interior is authorized and directed to determine if, and by what means, the take of migratory birds should be allowed and to adopt suitable regulations permitting and governing take but ensuring that take is compatible with the protection of the species.

Most native bird species are protected under the MBTA and under the California Fish and Game Code. It is unlawful to take, possess, or needlessly destroy any bird, nest, or egg of any bird species protected under the MBTA except as otherwise provided in California Fish and Game Codes and regulations. Disturbances at the active nesting territories should be avoided during the nesting season, typically February through August.

1.3.4 Federal Water Pollution Control Act (Clean Water Act), 1972

The Federal Water Pollution Control Act was first passed by Congress in 1948. The Act was later amended and became known as the Clean Water Act (CWA) (U.S.C Title 33, Chapter 26, Sub-Chapter I–VI). The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States. It gives the U.S. Environmental Protection Agency (EPA) the authority to implement pollution control programs, including setting wastewater standards for industry and water quality standards for contaminants in surface waters. The CWA makes it unlawful for any person to discharge any pollutant from a point source into navigable waters, without a permit under its provisions. Section 404 of the CWA permits are issued by the USACE for dredge/fill activities within wetlands or non-wetland waters of the U.S. Certifications under Section 401 of the CWA are issued by the RWQCB or the EPA for activities requiring a Federal permit or license that may result in discharge of pollutants into waters of the U.S.

1.3.5 Jurisdictional Waters

Pursuant to Section 404 of the CWA, the USACE regulates the discharge of dredged and/or fill material into "waters of the United States." The term "waters of the United States" is defined in 33 CFR Part 328 and currently includes (1) all navigable waters (including all waters subject to the ebb and flow of the tide), (2) all interstate waters and wetlands, (3) all impoundments of waters mentioned above, (4) all tributaries to waters mentioned above, (5) the territorial seas, and (6) all wetlands adjacent to waters mentioned above.

In 2006, the Supreme Court in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (*Rapanos*) addressed CWA jurisdiction over wetlands adjacent to or abutting navigable, non-navigable, and ephemeral tributaries and jurisdiction over permanent and relatively permanent non-navigable tributaries (126. CT.2208 [2006], 33 USC § 1251 et seq.). While there was no single opinion commanding a majority of the Court, the decision provides two new analytical standards for determining whether water bodies that are not traditional navigable waters (TNWs), including wetlands adjacent to those non-TNWs, are subject to CWA jurisdiction.

The two analytic standards used for jurisdictional nexus determination are (1) RPW Standard: if the water body is relatively permanent and if the water body is a wetland that directly abuts a relatively permanent water (RPW) body, and (2) if the water body or wetland proposed to be impacted in combination with all wetlands adjacent to that water body has a significant nexus with a TNW.

For tributaries that are non-navigable and not relatively permanent, a "significant nexus" analysis must be performed to determine whether such waters and its adjacent wetlands are jurisdictional. A "significant nexus" may be found where waters, including adjacent wetlands, have more than an insubstantial effect on the chemical, physical, or biological integrity of TNWs. Application of this standard will involve a comprehensive review of the tributary flow characteristics, functions of the tributary, and functions of any adjacent wetlands. The analysis involves completion of a seven-page "Approved Jurisdiction Form." The USACE uses the standard to determine if the tributary or wetland significantly affects the hydrological, ecological, chemical, physical, and biological integrity of the downstream navigable water.

Pursuant to Division 2, Chapter 6, Sections 1600–1602 of the California Fish and Game Code, the CDFG is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks and at least an intermittent flow of water. CDFG regulates wetland areas only to the extent that those wetlands are a part of a river, stream, or lake as defined by CDFG. While seasonal ponds are within the CDFG definition of wetlands, if they are not associated with a river, stream, or lake, they are not subject to jurisdiction of CDFG under Section 1602 of the Fish and Game Code. The CDFG routinely asserts jurisdiction of irrigation ditches constructed on uplands and the addition of riparian habitat supported by a river, stream, or lake regardless of the riparian area's Federal wetland status. In addition, the lateral extent of streambed may, in some situations, extend to include broader cross-sectional widths of drainages and floodplains above and beyond the area contained within the ordinary high water mark (OHWM), depending on the hydrological regime of a stream or river.

The California RWQCB is typically responsible for the administration of Section 401 of the CWA in California, through water quality certification of any activity that may result in a discharge to

jurisdictional waters of the U.S. The RWQCB also regulates discharges to "waters of the State," including wetlands, under the Porter-Cologne Water Quality Control Act (described below).

1.3.6 Bald Eagle Protection Act

The Bald Eagle Protection Act of 1940 (U.S.C Title 16, Chapter 5A, Subchapter II, Sections 668 a-d), as subsequently amended, provides for the protection of the bald eagle (*Haliaeetus leucocephalus*) and the golden eagle (*Aquila chrysaetos*) by prohibiting, except under certain specified conditions, the taking, possession and commerce of such birds. The 1972 amendments increased penalties for violating provisions of the Act or regulations issued pursuant thereto and strengthened other enforcement measures. Rewards are provided for information leading to arrest and conviction for violation of the Act. The 1978 amendment authorizes the Secretary of the Interior to permit the taking of golden eagle nests that interfere with resource development or recovery operations. (See also the Migratory Bird Treaty Act and the Federal Endangered Species Act.). A 1994 Memorandum (59 F.R. 22953, April 29, 1994) from President Clinton to the heads of Executive Agencies and Departments sets out the policy concerning collection and distribution of eagle feathers for Native American religious purposes.

1.3.7 California Fish and Game Code

The California Fish and Game (CFG) Code regulates the taking or possession of birds, mammals, fish, amphibians and reptiles, as well as natural resources such as wetlands and waters of the State. It includes CESA Sections 2050–2115 and Lake or Streambed Alteration Agreement regulations (Sections 1600–1616), as well as provisions for legal hunting and fishing, and tribal agreements for activities involving take of native wildlife.

1.3.8 California Endangered Species Act

The CESA (CFG Code, Division 3, Chapter 1.5, Sections 2050–2115) is administered by the CDFG and prohibits the "take" of plant and animal species identified as either Threatened or Endangered in the State of California by the Fish and Game Commission. "Take" is defined as hunt, pursue, catch, capture, or kill. Sections 2091 and 2081 of the CESA allow CDFG to authorize exceptions to the prohibition of "take" of the State-listed Threatened or Endangered plant or animal species for purposes such as public and private development. The CDFG requires formal consultation to ensure that a proposed project's actions would not jeopardize the continued existence of any listed species or destroy or adversely affect listed species' habitats.

1.3.9 California Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (CFG Code Sections 1900–1913) directs the CDFG 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 to protect Endangered and Rare plants from take.

1.3.10 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code, Division 7, Sections 13000–14958) provides for statewide coordination of water quality regulations. The Act established the California State Water Resources Control Board as the statewide authority and nine separate RWQCBs to oversee water quality on a day-to-day basis at the regional/local level.

1.3.11 California Desert Conservation Area Plan

The study area is within the BLM's California Desert Conservation Area (CDCA) Plan area. The CDCA Plan covers BLM-managed public lands throughout the California Desert. In 1981, the BLM designated 40,622 acres of the CDCA, known as the Yuha Basin, as an Area of Critical Environmental Concern (ACEC) because of the presence of archaeological sites and FTHL habitat. Management guidance for the proposed project site is provided through implementation of the Yuha Basin ACEC Management Plan (BLM 1981), which was prepared to provide additional protection for unique biological and cultural resources within portions of the Yuha Basin. In 1985, the Yuha Basin ACEC was expanded to 63,000 acres and included with adjacent ACECs and Natural Areas in the Yuha Desert Management Plan (BLM 1985). The project site is within an area designated as a Class L (limited) multiple use area. In a limited multiple use area, only low-intensity controlled activities are allowed.

In addition, the project site is located within the approximately 475,000-acre area covered by the WECO OHV Routes of Travel Designation Plan, an October 2002 amendment to the CDCA Plan. This plan covers approximately 2,320 miles of off-road vehicle routes in parts of Imperial and San Diego Counties, and designates routes of travel as open, limited, or closed on land managed by the BLM. The intent of this plan is to support recreational and general access uses of BLM-managed lands while reducing impacts to special status species such as FTHL as well as cultural resources.

1.3.12 Special Status Species and Natural Communities

Special status natural communities include "rare or unusual plant communities" as defined in *Survey Protocols Required for NEPA/ESA Compliance for BLM Special Status Plant Species* (BLM plant survey protocol; BLM 2009). Some special status natural communities are legally protected as wetlands or riparian areas subject to USACE or CDFG jurisdiction, while many others have no legal status.

Special status plant species, as defined in the BLM plant survey protocol, include plant taxa that are Federally listed as Threatened and Endangered, proposed for Federal listing, Candidates for Federal listing, State listed as Rare, Threatened, or Endangered, or BLM Sensitive species. All plant species that have a California Rare Plant Rank (CRPR) of 1B (CDFG 2011) are BLM Sensitive species, along with others that have been designated by the California State Director.

Special status animal species include animal taxa that are Federally or State listed as Threatened or Endangered, Proposed or Candidates for Federal or State listing, BLM Sensitive species, California Species of Special Concern, or California Fully Protected species.

1.3.13 Wildlife Movement Corridors and Nursery Sites

The California Environmental Quality Act (CEQA; PRC § 2100 et seq.) and the State CEQA Guidelines (CCR, §15000 et seq.) require consideration of impacts to wildlife movement corridors and nursery sites for projects that require discretionary approval by a State agency. No discretionary approvals by State agencies are anticipated to be required for the proposed project.

1.3.14 Local Policies and Ordinances Protecting Biological Resources

County and City general plans and development ordinances may include regulations or policies governing biological resources and may apply to projects that require discretionary approval by a local agency. For example, policies may include tree preservation, locally designated species survey areas, local species of interest, and significant ecological areas. No discretionary approvals by local agencies are anticipated to be required for the proposed project.

1.4 PROJECT SETTING

The proposed project site is located within the Sonoran Desert region of the Desert Province of California, which is separated from the Mojave Desert to the north by an unclear physiographic line, characterized by lower, flatter, warmer valleys and small hills.

The proposed project would be constructed along the eastern edge of the Yuha Desert (subarea of the Sonoran Desert Region) within previously undeveloped Federal land at the southern edge of the SDG&E Imperial Valley Substation. SDG&E transmission lines consisting of lattice tower structures extend away from the substation in various directions. An existing network of unpaved access roads, primarily associated with the operation and maintenance of SDG&E's transmission lines and with U.S. Border Patrol use, occurs throughout the project area.

The project site is located near the southern boundary of the California Desert Conservation Area (CDCA) and the southeastern portion of the Western Colorado (WECO) Off-Highway Vehicle (OHV) Routes of Travel Designation Plan area. The project site is within the Yuha Basin Area of Critical Environmental Concern (ACEC), which is managed by BLM to protect sensitive cultural and wildlife resources while allowing for compatible public uses such as camping (Figure 2). This area consists primarily of undeveloped open space. The Yuha Basin ACEC includes the Yuha Desert Management Area, which was designated by BLM for management of flat-tailed horned lizard (*Phrynosoma mcallii*; FTHL) habitat, as outlined in the *Flat-Tailed Horned Lizard Rangewide Management Strategy* (FTHLRMS) (Flat-tailed Horned Lizard Interagency Coordinating Committee 2003).

1.4.1 Land Use and Vegetation

The project site is primarily surrounded by undeveloped, moderately disturbed desert scrubland, with the exception of SDG&E's Imperial Valley Substation located immediately to the north and associated power lines and access roads scattered throughout the area. Irrigation canals and agricultural fields are located farther to the east and north. Figures 3A and 3B show representative site photographs. Vegetation on the project site consists of Sonoran creosote bush scrub (Holland 1986)

Figure 2: California Desert Conservation Area Plan

Figure 3A: Site Photographs

Figure 3B: Site Photographs

(*Larrea tridentata – Ambrosia dumosa* Alliance; CDFG 2007), the most common natural community in the region. The vegetation is somewhat disturbed as a result of various human-related activities. Pinto Wash is located south and southeast of the project site, with the Westside Main Canal and irrigated agricultural lands to the east and north.

1.4.2 Topography and Soils

The project site consists of relatively flat topography in a primarily undeveloped portion of the Yuha Desert. Elevations within the project site range from approximately 30 feet amsl in the northwestern corner to approximately 10 feet amsl in the southeastern corner. No features (topographical or hydrological) potentially subject to regulatory jurisdiction were identified on the project site. Pinto Wash is located to the southeast approximately 540 feet outside of the proposed project limits.

The mapped soils on the project site are described as Rositas and Rositas-Superstition series based on the *Soil Survey for Imperial Valley, California, Imperial Valley Area* (Zimmerman 1981). Rositas series soils are described as somewhat excessively drained, very deep sand, fine sand, and silt loam formed in alluvial and eolian deposits. Rositas-Superstition series soils are described as somewhat excessively drained, very deep, loamy fine sand or fine sand formed in eolian or alluvial material. Rositas fine sand, 0 to 2 percent slopes (132), is the predominant mapped soil type on site; Rositas sand, 0 to 2 percent slopes (130), is mapped on the western and southeastern edges of the project site; and Rositas-Superstition loamy fine sand (138), is also mapped on the western edge. These soils are nearly level on floodplains, basins, and terraces, with permeability, slow surface runoff, and slight hazard of erosion. Soils observed on the site are sands and loamy sands.

1.4.3 Climate

The hottest of North American deserts, the Sonoran Desert has a climate characterized by hot summers and warm winters, with most areas rarely experiencing frost. Much of the area has a bi-seasonal rainfall pattern, although, even during the rainy seasons, most days are sunny. Winter frontal storms bring widespread, gentle rain to the northwestern areas, and the summer monsoons bring surges of wet tropical air and frequent but localized violent thunderstorms. Seasonal temperatures range from an average of 52° Fahrenheit (F) in the winter, to 86° F in the summer, with extreme lows nears freezing and extreme highs well over 100° F. Yearly precipitation in the Sonoran Desert averages from 3 to 16 inches of rain per year, with the eastern portion receiving more rain than the western portion. Based on the vegetative growth, seasonal precipitation appears to have been at or above average at the project site during the surveys.

2.0 METHODOLOGY

2.1 LITERATURE REVIEW

LSA conducted a literature review and database records search to identify the existence or potential occurrence of special status species and natural communities on or in the vicinity of the project site, to assist in evaluating the suitability of habitat on the project site for those species that are likely to occur, and to determine current nomenclature and legal and rarity status of each species. Literature review and database searches included the following:

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- Bureau of Land Management. 1980. *California Desert Conservation Area Plan 1980 as Amended*. (All plants in Table 3A of the BLM's CDCA Plan were considered as potential survey target species.)
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2.2 SURVEY PROTOCOLS

LSA biologists conducted on-site assessments to identify and document botanical and wildlife species, map jurisdictional areas and natural communities, and evaluate suitability of habitat for various special status species. Focused surveys were conducted for various special status species. The locations of special status plant and wildlife species previously documented in the vicinity of the project site were identified prior to initiating the surveys. Special status plant or animal encountered or detected by sign during the surveys were noted, and photographed if possible. Nest locations of special status species and raptors were mapped, as were locations of special status plants, FTHL, and potential burrowing owl (*Athene cunicularia*) burrows (Figure 4). Locations of foraging birds were generally not mapped because bird foraging habitat within the project site was more or less uniform.

Figure 4: Biological Resources with Photograph Locations

From October 2009 through the spring of 2010, the study area consisted of approximately 350 acres (spring survey area; "original study area" in Figure 4) east, south, and west of the existing substation. Following project refinement with the intent of avoidance and minimization of impacts to biological and cultural resources, the survey area was reduced to approximately 142 acres (herein referred to as the fall survey area) primarily located south of the substation. The fall survey area consists of the project site surrounded by a 150-foot buffer in undeveloped areas. Field maps of the areas to be surveyed were prepared using a recent aerial photograph base. Biological surveys conducted, survey dates, and names of surveyors are listed in Table A. Cumulative lists of all vascular plant and wildlife species observed during the surveys are included in Appendices B and C, respectively. Résumés of all surveyors are on file with the BLM and SDG&E.

Table A: Survey Schedule and Personnel

Date	Survey Type	Surveyors*
October 26 and 27, 2009 November 30, 2009	General Biological Resources Survey and Vegetation Mapping	IQ, JH, MB, SB, SS, DR, JM
October 26, 2009	Jurisdictional Delineation	IQ, JH, MB, SB
March 22 and 23, April 29 and 30, and November 4, 2010	Focused Rare Plant Survey	DR, JR, SB, MW, SS, JM
September 22, 2009	Flat-Tailed Horned Lizard Habitat Suitability Assessment	PV
September 23, 2009	Focused Flat-Tailed Horned Lizard Survey	DW, JR, KK, TB
October 26 and 27, 2009	Focused Burrowing Owl Survey (Burrow Survey)	IQ, MB
May 10, 11, 13, and 14, 2010	Focused Burrowing Owl Survey	IQ, MB
November 11, 18, and 30 and December 7, 2010	Focused Winter Avian Point-Count Survey	DR, MB
March 2, 11, 18, and 25, 2011	Focused Spring Avian Point-Count Survey	DR, MB

* Surveyors: DR = Dan Rosie; DW = Denise Woodard; IQ = Ingri Quon; JH = Jim Harrison; JR = Jodi Ross; KK = Karen Kirtland; MB = Mark J. Billings; PV = Philippe Vergne; SB = Sarah Barrera; SS = Stanley Spencer

2.2.1 General Biological Survey and Vegetation Mapping

Reconnaissance-level field surveys of the spring survey area were conducted on October 26 and 27, and November 30, 2009, to evaluate habitat for special status species and to map natural communities. Natural communities were classified according to the *CDFG Biogeographic Data Branch Vegetation Classification and Mapping Program, List of California Vegetation Alliances* (CDFG 2007), and mapped using global positioning system (GPS) units and geographic information systems (GIS) software. Representative areas of each habitat type were surveyed on foot. Surveyors noted general site conditions, vegetation, potential USACE and CDFG jurisdictional areas, and suitability of habitat for various special status species. All plant and animal species observed or otherwise detected during this field survey were noted.

2.2.2 Focused Rare Plant Survey

As indicated in the BLM plant survey protocol (BLM 2009), the BLM is party to a Memorandum of Understanding with the CDFG to collect information for inclusion in the California Natural Diversity Database (CNDDB). Therefore, in addition to targeting special status plant species, focused plant surveys must also target all plant species on the CDFG *Special Vascular Plants, Bryophytes, and Lichens List* (special plants list; CDFG 2009a) that could occur on the project site. The special plants list includes all plant taxa monitored by CDFG through the CNDDB, regardless of their legal or protection status. At the direction of Andrew Trouette of the BLM El Centro Field Office, all plants on Table 3A of the BLM's *California Desert Conservation Area Plan 1980 as Amended* (BLM 1980) were also considered as potential survey target species. To determine which of these species could occur in the project vicinity, the CNDDB was searched for all plant records in Imperial County (CDFG 2009b). Calflora (Calflora 2009) and the California Native Plant Society's *Inventory of Rare and Endangered Plants* (CNPS 2009) were also consulted for species occurrence records from the project vicinity. Based on analysis of species ranges and habitat requirements, it was determined that the project site may provide potentially suitable habitat for the following species, which became the target species of the focused plant survey:[2]

- Chaparral sand-verbena (*Abronia villosa* var. *aurita*);
- Harwood's milk-vetch (*Astragalus insularis* var. *harwoodii*);
- Emory's crucifixion-thorn (*Castela emoryi*);
- Abrams' spurge (*Chamaesyce abramsiana*);
- Baja California ipomopsis (*Ipomopsis effusa*);
- Brown turbans (*Malperia tenuis*);
- Hairy stickleaf (*Mentzelia hirsutissima*);
- Slender woolly-heads (*Nemacaulis denudata* var. *gracilis*); and
- Thurber's pilostyles (*Pilostyles thurberi*).

Information regarding habitat, distribution, blooming period, and rarity status of each species is provided in Appendix A.

The focused rare plant surveys were conducted in accordance with BLM's plant survey protocol by biologists qualified to conduct botanical surveys. All plant taxa observed were documented and identified at least to the taxonomic level required to determine rarity status. The survey consisted of three survey periods in 2010. The survey area for the first two survey periods covered the approximately 350-acre spring survey area and the third survey period was limited to the approximately 142-acre fall survey area. Surveys consisted of walking along transects that provided for 100 percent visual coverage and detection of the smallest target species. The distances between transects averaged 15 meters (50 feet) during the first and third survey periods and 20 meters (65 feet) during the second survey period, and provided for 100 percent visual coverage of the site.

[2] Table B of the Focused Plant Survey Report (Appendix D) contains a list of evaluated plant taxa that are not expected to occur within the project area because of unsuitable habitat conditions or because the site is outside the range of the taxon; reasons for excluding each taxon are provided.

The first two survey periods (two days each) were conducted near the peak of the flowering season at the site. Survey timing was determined through consultation with Andrew Trouette of the BLM El Centro Field Office, who provided information related to on-the-ground conditions and recommendations related to timing. At the direction of the BLM, for species dependent on summer or early fall rain, a third survey period was conducted in November 2010, following substantial rain in early October 2010. These survey periods overlapped the expected blooming periods of all target species. The focused survey report is attached as Appendix D.

2.2.3 Focused Flat-Tailed Horned Lizard Survey

Protocol surveys for FTHL were conducted on September 23, 2009, by Natural Resources Assessment, Inc. (NRA) and LSA. Prior to the protocol survey (on September 22, 2009), NRA conducted a Habitat Suitability Assessment for FTHL. The surveys were focused on FTHL but included observations of general biological resources. Field surveys followed the revised FTHL survey (Appendix E) discussed with the BLM[3]. Each survey plot was 4 hectares in size and was surveyed on foot for two hours, with surveyors searching for FTHL and FTHL sign (scat, tracks, and animal remains). A total of ten plots were surveyed. The FTHL survey did not include the portion of the spring survey area that is east of the existing substation, but did encompass the proposed project site (Figure 2 in Appendix E). During the surveys, notes were made on the plant and animal species observed, the surface characteristics and topography of the project area, and the suitability of the habitat for FTHL. The focused FTHL survey report is attached as Appendix E.

2.2.4 Focused Burrowing Owl Survey

In October 2009 and May 2010, LSA conducted a total of six field visits to the 350-acre spring survey area. Protocol-level burrowing owl surveys were conducted in accordance with the California Burrowing Owl Consortium's (BOC) *Burrowing Owl Survey Protocol and Mitigation Guidelines* (CBOC 1993), which included a preliminary burrow survey in 2009 followed by subsequent focused breeding season surveys in 2010. The site was surveyed for breeding owls under moderate to favorable weather conditions. A general burrow survey of the spring survey area was conducted on October 26 and 27, 2009, and included the entire survey area and areas within 150 meters (approximately 500 feet), with the exception of the existing Imperial Valley Substation. The burrow survey was conducted by two biologists walking parallel transects, allowing for 100 percent visual coverage of the ground. In October 2009, and again during visits on May 10, 11, 13, and 14, 2010, the biologists mapped the locations of all potential burrowing owl burrows, and all burrows that were not collapsed, ultimately narrowed in the back, or blocked by cobwebs or debris at the entrance were investigated during each of the four breeding season surveys. The letter report summary is attached as Appendix F. Because wintering burrowing owls were observed during the October 2009 burrow survey, and incidentally during other site visits, wintering owls were determined to be present and no additional winter protocol surveys were conducted.

[3] The project-specific protocol was developed through consultation with Andrew Trouette and Daniel Steward of the BLM, as documented in personal communication with LSA biologist Denise Woodard on September 11, 16, and 22, 2009.

2.2.5 Focused Avian Point-Count Survey

LSA conducted focused avian point-count surveys in accordance with the BLM Solar Facility Point Count Protocol (March 2009). Winter surveys were conducted on November 11, 18, and 30 and December 7, 2010. Spring surveys were conducted on March 2, 11, 18, and 25, 2011. The area under consideration is the project impact area plus a 150-foot buffer (approximately 142 acres). Point-count surveys were conducted between sunrise and up to four hours after sunrise at eight separate locations 250 meters apart for ten minutes each. The numbers of individuals of all bird species observed or otherwise detected (songs/calls, flight behavior, habit, etc.) during the survey were documented; however, only those observed within 100 meters of each survey point will be included in the point-count survey results. The winter and spring focused survey reports are attached as Appendices G and H.

2.2.6 Jurisdictional Delineation and Mapping

On October 26, 2009, LSA conducted a field survey of areas considered potentially jurisdictional by USACE pursuant to Section 404 of the CWA, the RWQCB pursuant to Section 401 of the CWA, or the Porter Cologne Act and the CDFG pursuant to Section 1600 et seq. of the California Fish and Game Code within the approximately 350-acre project study area. Areas of potential jurisdiction were evaluated according to current USACE and CDFG criteria. Measurements of jurisdictional areas were determined by direct measurements taken in the field and where necessary by use of a handheld GPS unit. USACE wetland delineation procedures, including excavation of sample pits and wetland data sheets, were not completed because no Federally-regulated waters of the U.S. were identified within the study area.

3.0 SURVEY RESULTS

3.1 GENERAL BIOLOGICAL SURVEY AND VEGETATION MAPPING

3.1.1 Natural Communities and Flora

The only natural community (CDFG 2007) on the 115-acre project site is the *Larrea tridentata – Ambrosia dumosa* Alliance (previously referenced Figures 3 and 4A). This community is dominated by creosote bush (*Larrea tridentata*), burrobush (*Ambrosia dumosa*), Panamint cryptantha (*Cryptantha angustifolia*), desert Indianwheat (*Plantago ovata*), and common Mediterranean grass (*Schismus barbatus*).

The predominant natural community in Pinto Wash is the *Larrea tridentata* Alliance, which is dominated by creosote bush, Panamint cryptantha, and common Mediterranean grass.

The *Psorothamnus spinosus* Alliance occupies a smaller portion of Pinto Wash, and is dominated by smoketree (*Psorothamnus spinosus*), cryptantha (*Cryptantha* sp.), common Mediterranean grass, and desert sand verbena (*Abronia villosa* var. *villosa*).

A *Tamarix aphylla* Semi-Natural Non-Native Stand occurs in the northern portion of the 350-acre spring survey area just east of the existing substation. This vegetation type is dominated by athel (*Tamarix aphylla*), cryptantha, creosote bush, and common Mediterranean grass.

The *Psorothamnus spinosus* Alliance in Pinto Wash (Figures 3 and 4B) is a "rare or unusual plant community" as defined in the BLM plant survey protocol. This natural community is located within the spring survey area, but is not located within the fall survey area or within the 115-acre project limits.

Creosote bush, as well as a few other native perennial shrubs such as burrobush, is common throughout most of the project site, but sparse in areas of greater disturbance. The shrub layer, which contains most of the plant biomass and vegetative cover suitable for wildlife use, is dominated by native shrubs, principally creosote bush. The herbaceous layer is generally sparse and dominated by annual species; primarily desert Indianwheat, Panamint cryptantha, and common Mediterranean grass. A total of 58 native and 7 non-native plant species were observed during the surveys. A list of all plant species identified within the survey area is attached as Appendix B.

3.1.2 Wildlife

Disturbed *Larrea tridentata – Ambrosia dumosa* Alliance, the primary natural community within the project site, provides suitable habitat for a variety of native wildlife species. Reptile species observed on the site are typical of open desert habitat and include side-blotched lizard (*Uta stansburiana*), sidewinder (*Crotalus cerastes*), desert iguana (*Dipsosaurus dorsalis*), western whiptail (*Cnemidophorus tigris*), and zebra-tailed lizard (*Callisaurus draconoides*). Bird species frequently observed on the site include turkey vulture (*Cathartes aura*), mourning dove (*Zenaida macroura*),

rock pigeon (*Columba livia*), greater roadrunner (*Geococcyx californianus*), black-tailed gnatcatcher (*Polioptila melanura*), and European starling (*Sturnus vulgaris*). The site also provides habitat for several common mammals, including black-tailed jackrabbit (*Lepus californicus*), kangaroo rat (*Dipodomys* sp.), desert kit fox (*Vulpes macrotis*), coyote (*Canis latrans*), and round-tailed ground squirrel (*Spermophilus tereticaudus*). Other small and medium-sized mammals may also occur on the site. Eleven reptile species, 66 bird species (including three non-native species), and five mammal species were observed or otherwise detected during LSA's field surveys. A complete list of all animal species identified within the survey area is attached as Appendix C.

3.2 FOCUSED SPECIES SURVEY RESULTS

Focused surveys for rare plants, FTHL, burrowing owl, and other bird species were conducted in accordance with the most recent BLM-accepted survey protocols. The results of these surveys are summarized below. Focused survey reports, with detailed results, are attached as Appendices D through H.

3.2.1 Rare Plant Survey

One target species, Thurber's pilostyles (*Pilostyles thurberi*), was found within the 350-acre survey area, but outside of the 142-acre fall survey area (Figures 3 and 4B) and project site. Thurber's pilostyles is not a special status species (as defined in the BLM plant survey protocol) and is not considered sensitive, but is monitored by the CDFG as a CRPR 4 species. The other target species were not detected, and are determined to be absent at this time as summarized in the table in Appendix A. The focused plant survey report is attached as Appendix D.

No special status plant species were observed within the survey area. Based on the level of disturbance within the survey area and the results of the focused rare plant surveys, no special status plant species are expected to occur within the survey area, and none are expected to occur within the project impact area.

3.2.2 Flat-Tailed Horned Lizard Survey

FTHL is a California Species of Special Concern and a BLM Sensitive species. It has been recorded in high numbers in Sonoran desert scrub habitat. It also inhabits mixed desert scrub and saltbush scrub communities. Once thought to be restricted to windblown sand, it has been found in soil covers ranging from sandy flats or areas with a veneer of fine, windblown sand, to areas with little or no windblown sand. California populations occupy sandy flats and hills, badlands, salt flats and gravelly soils.

The proposed project lies within both the FTHL and desert horned lizard (*Phrynosoma platyrhinos*) ranges. Loose sands suitable to support both species are present within the 350-acre study area. Horned lizard scat was found within all ten study plots, and tracks were observed on Plot 2; however, no individuals of FTHL were observed during the focused surveys (Appendix E). Incidentally, during the focused rare plant surveys in late March 2010, a juvenile FTHL was observed in Pinto Wash (Figures 3B and 4) and remnants of a FTHL carcass were observed near the center of the survey area at the mouth of a burrow with burrowing owl sign.

Because FTHL and the desert horned lizard produce similar scat and tracks, and because the project site is located within the known range of both species, the observed sign could belong to either of the two species, or both. The entire project site, however, is considered to be occupied with FTHL in accordance the protocol provided in the FTHLRMS for determination of FTHL presence. Specifically, the project site is within the historical range of the FTHL, the project site is within two miles of a recorded FTHL population, habitat on site is contiguous throughout the project site and the surrounding area extending into areas known to support FTHL, no major habitat alteration or conversion has taken place in the project area since the species was detected, and there are no barriers between the project site and areas of known occupation by the FTHL. The focused FTHL survey report is attached as Appendix E.

3.2.3 Burrowing Owl Survey

The burrowing owl is California Species of Special Concern and a BLM Sensitive species. It frequents a wide range of open habitats, especially those with healthy populations of ground squirrels.

During the burrow survey in October 2009, many potentially suitable burrows were mapped and at least three adult burrowing owls were found occupying a total of four burrows within the 350-acre spring survey area. Two of the occupied burrows were within the project limits (Figure 4). In addition, during the focused plant survey in March 2010, a burrowing owl was incidentally observed in flight in the southeast portion of the spring survey area (Figure 4).

Burrowing owls were not found during the four focused breeding season field visits in May 2010. The four burrows that were occupied at the time of the burrow survey were found to be inactive, and, although over 20 suitable burrows were investigated for sign, no additional active burrows were found (Figure 4). Most suitably sized burrows in the survey area are clear of debris and cobwebs and are in marginally suitable foraging habitat. Most were being used by reptiles (i.e., lizards and snakes), rodents, or kit fox.

The results of the burrow survey and focused breeding season survey indicate that breeding owls were not present on site at the time of the survey, but that the site was utilized by wintering individuals. However, during the focused plant survey in late March 2010, a burrowing owl individual was observed near a burrow with owl sign near the center of the survey area. The focused burrowing owl survey report is attached as Appendix F.

3.2.4 Avian Point-Count Surveys

Four winter point-count surveys were conducted in November and December 2010, and four spring point-count surveys were conducted in March 2011. Twenty-one species of birds were observed, including loggerhead shrike (*Lanius ludovicianus*), a special status species. Swainson's hawk (*Buteo swainsoni*), a California Threatened species, was observed as migrating individuals flying over the site. The winter and spring focused survey reports are attached as Appendices G and H.

3.2.5 Golden Eagle Nest Survey

The golden eagle (*Aquila chrysaetos*) is a California Fully Protected Species. It is on the list of BLM Sensitive species for California, but is not a BLM Sensitive species for the BLM El Centro Field Office (BLM 2011). Golden eagles usually require cliffs or large trees for nesting, but forage over a wide range of open habitats. Golden eagles generally forage within 3.7 miles of their nests (Pagel et al. 2010), but in desert areas with poor habitat, their foraging territories typically encompass 100 to 120 square miles (Wildlife Research Institute [WRI] 2010), which corresponds to a foraging range of 5.6 to 6.2 miles from the nest.

From January to May 2010, on behalf of SDG&E, WRI conducted Phase 1 and Phase 2 surveys for golden eagles within 4 miles of the Final Environmentally Superior Southern Route of the San Diego Gas & Electric Sunrise Powerlink Project alignment (WRI 2010). The Sunrise Powerlink is an approximately 118-mile 230kV/500kV transmission line that is proposed for construction from SDG&E's Imperial Valley Substation (which is adjacent to the project site) to SDG&E's Sycamore Canyon Substation on Marine Corps Air Station Miramar in San Diego County.

These surveys complied with USFWS recommendations, and were conducted both by ground and helicopter to confirm activity, occupancy, breeding status of the pairs, and fledging success of the golden eagles. Nineteen territories between Sycamore Canyon Substation and Imperial Valley Substation were checked and nine were confirmed to be active during 2010; two additional territories were considered possibly active based on nest site evidence, and eight appeared to be inactive. Five of the active territories were seen with incubating females on the nests during the surveys. In total, 24 golden eagle adults and nestlings were observed.

The golden eagle nest nearest to the Ocotillo Sol project site is located approximately 20 miles to the west and was inactive at the time of the surveys, with the nearest known active nest located approximately 40 miles to the west. This distance is well beyond the expected foraging range of even desert-nesting golden eagles. This species was not observed during any of the site visits, and is unlikely to nest near the project site due to absence of typical nesting habitat. Thus, the project is not likely to have an adverse effect on nesting or foraging golden eagles.

3.3 OTHER SPECIAL STATUS SPECIES

Based on the level of disturbance within the survey area and the results of the focused rare plant surveys, no special status plant species are expected to occur within the survey area, and none is expected to occur within the project impact area.

The USFWS expressed interest in potential project impacts to three wildlife species (USFWS 2011): FTHL, mountain plover (*Charadrius montanus,* a Federally-proposed Threatened species), and burrowing owl. FTHL and burrowing owl were detected within the project site; mountain plover is not expected to forage or nest on the site due to the lack of suitable habitat.

Seven special status animal species have a moderate or greater probability of occurring within the project 350-acre study area (Appendix A):

- FTHL;
- Burrowing owl;
- Colorado Desert fringe-toed lizard (*Uma notata*);
- Loggerhead shrike;
- Palm Springs pocket mouse (*Perognathus longimembris bangsi*);
- Pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*); and
- Western mastiff bat (*Eumops perotis californicus*).

FTHL and burrowing owl were discussed previously. The other five are discussed individually below and in Appendix A.

Colorado Desert fringe-toed lizard is a California Species of Special Concern and a BLM Sensitive species. It is found in sandy dunes, flats, and washes in some of the most arid parts of the desert; the same areas favored by FTHL. However, the fringe-toed lizard's habitat requirements appear to be more restrictive than those of the FTHL. This species was not observed on the site during any of the surveys, although habitat appears to be suitable.

Loggerhead shrike is a California Species of Special Concern. It occupies many open habitats, but has undergone population declines across much of its range. California desert populations appear to have been among the least affected to date. Loggerhead shrikes were observed on the project site during site visits, including the winter avian point-count survey (Appendix G). The species was most numerous during winter surveys, but might also nest on the site.

Palm Springs pocket mouse is a California Species of Special Concern and a BLM Sensitive species. It is found in desert scrub on fine sandy soils. Habitat on the project site appears to be suitable for the species, so there is a moderate potential for it to occur. However, no small mammal trapping was conducted on site.

Pallid San Diego pocket mouse is a California Species of Special Concern. It is found in a variety of arid scrub habitats. Habitat on the project site appears to be suitable for the species, so there is a moderate potential for it to occur. However, no small mammal trapping was conducted on site.

Western mastiff bat is a California Species of Special Concern and a BLM Sensitive species. It occurs in many open, semi-arid to arid habitats, but roosts in crevices in vertical cliff faces, high buildings, trees, and tunnels. Western mastiff bats range widely while foraging, and are likely to forage high over the project site. Roosting habitat is not present on site.

Four additional special status species were observed as wintering or migrating individuals during surveys of the 350-acre study area. Three of these—Black swift (*Cypseloides niger*), olive-sided flycatcher (*Contopus cooperi*), and yellow warbler (*Dendroica petechia*)—are considered California Species of Concern during the nesting season, but not as wintering or migrating individuals. The project site is not within the breeding range of these species. As these three species are not expected to nest at or near the project site they are not discussed further. The fourth species, Swainson's hawk

(*Buteo swainsoni*), is a State-Threatened species. It was observed migrating over the site. The site is not within the nesting or wintering range of this species.

Le Conte's thrasher (*Toxostoma lecontei*) was also observed on the site. Only the San Joaquin Valley population of Le Conte's thrasher is considered a BLM Sensitive species or a California Species of Special Concern (Shuford and Gardali 2008). The remainder of the species, including populations in the project vicinity, is not. Le Conte's thrasher is thus not considered a special status species for this project.

3.4 POTENTIAL JURISDICTIONAL WATERS AND WETLANDS

The project site is relatively flat with only 20 feet elevation difference from the southwest corner of the spring survey area to the northeast corner, located nearly 3,500 feet away (Figure 5), producing an average slope of less than 1 percent. Pinto Wash, which is subject to CDFG jurisdiction, is located to the southeast approximately 540 feet outside of the proposed project limits but within the spring survey area.

No drainages, wetlands, or any other topographical or hydrological features with potential to be subject to USACE, RWQCB, or CDFG jurisdiction were observed within the 115-acre project limits. No evidence of streambed and banks as defined by CDFG was observed within the project limits, nor were any defined channels that would be subject to agency jurisdiction. Evidence of hydrology on site is limited to some bare spots and soil sorting due to sheet flow, which was observed throughout the project site, generally following the gentle slope of the terrain.

Figure 5: California Department of Fish and Game Jurisdiction

4.0 CONCLUSIONS

4.1 JURISDICTIONAL WATERS

No drainages, wetlands, or any other topographical or hydrological features with potential to be subject to USACE, RWQCB, or CDFG jurisdiction were observed within the 115-acre project limits. No evidence of streambed and banks as defined by CDFG was observed within the project limits, nor were any defined channels that would be subject to agency jurisdiction. Evidence of hydrology on site is limited to some bare spots and soil sorting due to sheet flow, which was observed throughout the project site in a random, but general direction following the gentle slope of the terrain. Thus, no impacts to jurisdictional waters area expected.

4.2 SPECIAL STATUS NATURAL COMMUNITIES

The *Psorothamnus spinosus* Alliance observed in Pinto Wash within the spring survey area, but outside the fall survey area, is a "rare or unusual plant community" as defined in the BLM plant survey protocol. The only natural community found within the fall survey area and the 115-acre project site is the *Larrea tridentata – Ambrosia dumosa* Alliance, which is not a special status natural community. Thus, no impacts to special status natural communities are anticipated.

4.3 THREATENED AND ENDANGERED SPECIES

No State-listed or Federally-listed Threatened or Endangered plant species were observed within the spring or fall survey areas during the focused rare plant surveys. No State-listed or Federally-listed Threatened or Endangered animal species were observed within the survey area except for Swainson's hawk, which was observed migrating over the site.

No impacts to listed species are anticipated as a result of the project.

4.4 NON-LISTED SPECIAL STATUS AND TARGET PLANT SPECIES

One target plant species, Thurber's pilostyles, was found within the 350-acre survey area but outside the 142-acre fall survey area. This species is not a special status species (as defined in the BLM plant survey protocol) and is not considered sensitive, but is monitored by the CDFG as a California Rare Plant Rank (CRPR) 4 species. Based on the level of disturbance within the survey area and the results of the focused rare plant surveys, no special status plant species are expected to occur on the site. Thus, no impacts to special status plant species are anticipated.

4.5 NON-LISTED SPECIAL STATUS ANIMAL SPECIES

The project may affect up to 115 acres of breeding habitat of the following special status species:

- Flat-tailed horned lizard (BLM Sensitive, California Species Special Concern);
- Burrowing owl (BLM Sensitive, California Species of Special Concern);
- Colorado Desert fringe-toed lizard (BLM Sensitive, California Species of Special Concern);
- Loggerhead shrike (California Species of Special Concern);
- Palm Springs pocket mouse (BLM Sensitive, California Species of Special Concern); and
- Pallid San Diego pocket mouse (California Species of Special Concern).

The project may also affect up to 115 acres of foraging habitat of the following species:

- Western mastiff bat (BLM Sensitive, California Species of Special Concern).

4.6 HABITAT CONNECTIVITY AND WILDLIFE CORRIDORS

The project area is situated adjacent to an existing substation near the edge of open desert. It is not within any identified wildlife movement corridor or habitat linkage. Because of the project is situated in a relatively undeveloped area, habitat connectivity is not constrained and wildlife movement is expected to continue relatively unhindered with implementation of the proposed project.

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APPENDIX A

SPECIAL STATUS SPECIES TABLE[4]

The table below lists the plant and animal taxa that have the potential to occur within the project area.

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Plants				
Abronia villosa var. *aurita* **Chaparral sand-verbena**	US: – CA: 1B BLM: S	Sandy areas in chaparral and coastal sage scrub and improbably in desert dunes or other sandy areas, below 1,600 meters (5,300 feet) elevation. In California, reported from Riverside, San Diego, Imperial, Los Angeles, and Ventura Counties. Believed extirpated from Orange County. Also reported from Arizona and Mexico (Baja California). Plants reported from desert communities are likely misidentified.	Blooms mostly March through August (annual herb)	**Absent** – *Abronia villosa* var. *villosa* was observed on site in the spring survey area within the Pinto Wash. *A. v.* var. *aurita* is not expected to occur on site and was not observed during the focused rare plant surveys.
Astragalus insularis var. *harwoodii* **Harwood's milk-vetch**	US: – CA: 2 BLM: –	Desert dunes or open sandy flats, or less often in stony desert washes, mostly within creosote bush scrub, at 0 to 710 meters (0 to 2,300 feet) elevation. In California known only from the Sonoran Desert in San Diego, Imperial, and Riverside Counties. Also occurs in Arizona and Mexico (Sonora).	Blooms January through May (annual herb)	**Absent** – Marginally suitable habitat is present on the project site. However, no individuals of this species were observed during the focused rare plant surveys.
Castela emoryi **Emory's crucifixion-thorn**	US: – CA: 2 BLM: –	Non-saline dry lakes and less frequently along washes (especially among basalt flows) or similar non-saline seasonally wet sites where water accumulates, at 85 to 770 meters (280 to 2,530 feet) elevation in desert scrub. Occurs rarely if at all on upper alluvial slopes or rocky slopes. In California, known only from Imperial, Riverside, and San Bernardino Counties. Also occurs in Arizona and Mexico (Sonora).	Blooms mostly June through July (deciduous shrub)	**Absent** – No suitable habitat present on the project site. Perennial species not observed during focused rare plant surveys.
Chamaesyce abramsiana **Abrams' spurge**	US: – CA: 2 BLM: –	Sandy areas of desert scrub below 1,000 meters (3,300 feet) elevation. In California, known from Imperial, Riverside, and San Bernardino Counties. Also occurs in Arizona, Nevada, and Mexico (Baja California and Sonora).	Blooms mostly September through November following late summer rains (annual herb)	**Absent** – Marginally suitable habitat is present on the project site. However, no individuals of this species were observed during the focused rare plant surveys.

[4] Table B of the Focused Plant Survey Report (Appendix D) contains a list of evaluated plant taxa that are not expected to occur within the project area because of unsuitable habitat conditions or because the site is outside the range of the taxon; reasons for excluding each taxon are provided.

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Ipomopsis effusa **Baja California ipomopsis**	US: – CA: 2 BLM: –	Only a single occurrence is known from California, consisting of two plants observed in 1987 in Pinto Wash immediately north of Highway 98 in Imperial County, 2.5 miles north of the Mexican border. Not since documented despite searches for it there in 1992, 1995, 1996, and 2004. Habitat at the site is not typical, and it is very unlikely that this species would become naturalized in the creosote bush scrub vegetation occupying the site. Plants are believed to have been waifs from seeds carried in flood debris from higher elevations in Mexico where this species typically inhabits montane chaparral or coniferous forests.	Blooms April through June (annual herb)	**Absent** – No suitable habitat present on the project site. Not observed during focused rare plant surveys.
Malperia tenuis **Brown turbans**	US: – CA: 2 BLM: –	Primarily rocky slopes (less often other sandy places) in Sonoran Desert scrub at 15 to 335 meters (50 to 1,100 feet) elevation. In California, known from Imperial and San Diego Counties. Also occurs in Mexico.	Blooms March through April (annual herb)	**Absent –** No suitable habitat present on the project site. Not observed during focused rare plant surveys.
Mentzelia hirsutissima **Hairy stickleaf**	US: – CA: 2 BLM: –	Rocky sites, especially coarse rubble and talus slopes, washes, and alluvial fans, in Sonoran Desert scrub at -5 to 800 meters (-15 to 2600 feet) elevation. In California, known from Imperial and San Diego Counties. Also occurs in Mexico.	Blooms March through May (annual herb)	**Absent –** No suitable habitat present on the project site. Not observed during focused rare plant surveys.
Nemacaulis denudata var. *gracilis* **Slender woolly-heads**	US: – CA: 2 BLM: –	Coastal or desert dunes, sandy mesquite hummocks, or similar sandy sites at -50 to 400 (560) meters (-160 to 1,300 [1,800] feet) elevation. Known from Imperial, Riverside, San Bernardino, and San Diego Counties in California, and from Arizona and Mexico.	Blooms mostly late March to mid May (annual herb)	**Absent –** No suitable habitat present on the project site. Not observed during focused rare plant surveys.
Pilostyles thurberi **Thurber's pilostyles**	US: – CA: 4 BLM: –	Sandy alluvial plains and sandstone talus in Sonoran Desert scrub at up to 365 meters (1,200 feet) elevation, where it is a parasite of *Psorothamnus emoryi* (and of *Psorothamnus polydenius* in Nevada). Known in California from Riverside, San Diego, and Imperial Counties. Also occurs in Nevada, Arizona, and Mexico.	Blooms at various times, but old flowers remain visible for years (perennial parasitic herb)	**Present –** Species observed on *Psorothamnus emoryi* east of the substation (within the spring survey area) just outside of project site. No other *P. emoryi* observed (or expected) within the project site.
Reptiles				
Phrynosoma mcallii **Flat-tailed horned lizard**	US: – CA: SSC BLM: S	Restricted to desert washes and desert flats from central Riverside, eastern San Diego, and Imperial Counties to southwestern Arizona, northeastern Baja California, and northwestern Sonora. Critical Habitat element is fine sand, into which lizards burrow to avoid temperature extremes. Requires vegetative cover.	March through October. Hibernates mid-November to mid-February.	**Present** – Not detected during focused surveys, but detected on-site during other surveys.

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Uma notata **Colorado Desert fringe-toed lizard**	US: – CA: SSC BLM: S	Colorado Desert region, including southeastern California, southwestern Arizona, northeastern Baja California, and northwestern Sonora; in sand dunes, dry lakebeds, sandy beaches or riverbanks, desert washes, or sparse desert scrub. Requires fine, loose, windblown sand (for burrowing); shrubs or annuals for arthropod production.	March through October.	**Moderate** – Suitable habitat, but not detected during site visits.
Birds				
Aquila chrysaetos (nesting and wintering) **Golden eagle**	US: – CA: CFP BLM: S (but not on El Centro Field Office list)	Generally open country of the Temperate Zone worldwide. Uncommon resident in much of southern California.	Year-round.	**Low** – Not seen during focused surveys, but the species is wide-ranging so foraging individuals may occur occasionally.
Falco peregrinus anatum (nesting) **American peregrine falcon**	US: – CA: CFP BLM: –	Widespread, but scarce and local throughout North America. Uncommon resident in much of southern California.	Year-round.	**Low** – Not seen during focused surveys, but the species is wide-ranging so foraging individuals may occur occasionally.
Charadrius montanus (wintering) **Mountain plover**	US: FPT CA: SSC (wintering) BLM: S	Nests in dry, open, prairies and grasslands in central North America; winters in bare open country and farmlands in the southwestern United States and northern Mexico.	Year-round.	**Absent** – No suitable habitat present on the project site.
Athene cunicularia (burrow sites) **Burrowing owl**	US: – CA: SSC (breeding) BLM: S	Open country in much of North and South America. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Year-round.	**Present** – Not detected during focused breeding season surveys, but detected in winter during burrow and other surveys. May forage on site during winter, but nest in more suitable habitat elsewhere.
Pyrocephalus rubinus (nesting) **Vermilion flycatcher**	US: – CA: SSC (breeding) BLM: –	Open country in much of southern North America and northern South America. In southern California, inhabits desert riparian adjacent to irrigated fields, irrigation ditches, pastures, and other open, mesic areas. Nests in cottonwood, willow, mesquite, and other large desert riparian trees.	Year-round.	**Absent** – No suitable habitat present on the project site.
Lanius ludovicianus (nesting) **Loggerhead shrike**	US: – CA: SSC (breeding) BLM: –	Open country in much of North America, but declining in many areas.	Year-round.	**Present** – Detected during site visits. May breed on-site, but more numerous in non-breeding season.

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Toxostoma bendirei **Bendire's thrasher**	US: – CA: SSC (breeding) BLM: S	Desert, primarily in areas with tall open vegetation; in the southwestern United States and northwestern Mexico, withdrawing from most northern areas outside the nesting season.	March through July.	**Low** – Habitat on site may be unsuitable, and the species is very rare in the region.
Toxostoma crissale **Crissal thrasher**	US: – CA: SSC (year round) BLM: –	Riparian thickets and arid scrub in the southwestern United States and northern Mexico.	Year-round.	**Low** – Habitat on site is probably too sparse for the species.
Mammals				
Perognathus longimembris bangsi **Palm Springs pocket mouse**	US: – CA: SSC BLM: S	California endemic. Inhabits fine sandy ground on the west side of the Colorado Desert from the Coachella Valley nearly to the Mexican border.	Primarily the warmer months.	**Moderate** – Site appears to be within the species' range and the habitat appears to be suitable.
Chaetodipus fallax pallidus **Pallid San Diego pocket mouse**	US: – CA: SSC BLM: –	Arid scrub along the southwestern edge of the Mojave Desert and the western edge of the Colorado Desert, from the Antelope Valley to approximately the Mexican border.	Year-round.	**Moderate** – Site appears to be within the species' range and the habitat appears to be suitable.
Macrotus californicus **California leaf-nosed bat**	US: – CA: SSC BLM: S	Western United States and northwestern Mexico. In California, primarily occupies low-lying desert areas, roosting in caves, mines, and old buildings with warm, stable temperatures. Rarely uses bridges for roosting.	Primarily the warmer months.	**Low –** No roosting sites available on site or vicinity. Site may provide foraging habitat.
Choeronycteris mexicana **Mexican long-tongued bat**	US: – CA: SSC BLM: –	Uses a variety of habitats from the southwestern United States through Central America. In California, this species has been observed in San Diego County, likely as a seasonal migrant. Feeds on nectar and pollen of night-blooming succulents; may visit hummingbird feeders. Roosts in caves, mines, and occasionally buildings. Not known to use bridges for roosting.	Primarily the warmer months.	**Low –** No roosting sites available on site or vicinity. Site may provide foraging habitat.
Leptonycteris curasoae yerbabuenae **Lesser long-nosed bat**	US: FE CA: SSC BLM: –	Occurs in Sonoran desert scrub, semi-desert grasslands and lower oak woodlands from Arizona and New Mexico to El Salvador, and has been recorded in southwestern California. Frugivorous and nectivorous; highly associated with plants such as agave, saguaro, and ocotillo as a source of food. Roosts in caves and mines; not known to use bridges for roosting. Capable of migrating long distances.	Primarily the warmer months.	**Low –**Outside normal range. No roosting sites available on site or vicinity.

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Eumops perotis californicus **Western mastiff bat**	US: – CA: SSC BLM: S	Ranged historically throughout much of the southwestern United States and northwestern Mexico. In California, most records are from rocky areas at low elevations. Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in vertical cliff faces, high buildings, trees, and tunnels throughout southwestern California. May roost in tall bridges.	Primarily the warmer months.	**Moderate –** No roosting sites available on site or vicinity. Site may provide foraging habitat as animals range widely when feeding.
Nyctinomops femorosaccus **Pocketed free-tailed bat**	US: – CA: SSC BLM: –	Varied habitats, but usually associated with high cliffs or rocky areas. Spotty distribution, ranging from southern California and southwestern Arizona through central Mexico. Roosts primarily in cliffs/rock crevices; may use buildings for roosting. Rarely roosts in bridges.	March through August.	**Low –** No roosting sites available on site or vicinity. Site may provide foraging habitat.
Nyctinomops macrotis **Big free-tailed bat**	US: – CA: SSC BLM: –	Varied habitats, but usually associated with high cliffs or rocky areas. Spotty distribution, ranging from southern California and southwestern Arizona through central Mexico. Roosts primarily in cliffs/rock crevices; may use buildings for roosting. Rarely roosts in bridges.	Primarily the warmer months.	**Low –** No roosting sites available on site or vicinity. Site may provide foraging habitat.
Lasiurus xanthinus **Western yellow bat**	US: – CA: SSC BLM: –	Varied habitats from the southwestern United States to southern Mexico; often associated with palms and desert riparian habitats. In southern California occurs in palm oases and in residential areas with untrimmed palm trees. Roosts primarily in trees, especially the dead fronds of palm trees, though they have also been documented to roost under the leaves of deciduous trees such as cottonwoods.	Primarily the warmer months.	**Low** – No roosting sites available on site. Site may provide foraging habitat.
Corynorhinus townsendii **Townsend's big-eared bat**	US: – CA: SSC BLM: S	Ranges from southwestern Canada through the western United States to southern Mexico. Requires caves, mines, tunnels, buildings or other similar structures for roosting. Occasionally roosts in hollow spaces of bridges or buildings. Will occasionally roost in hollow trees. Highly sensitive to disturbance.	Primarily the warmer months.	**Low –** No roosting sites available on site or vicinity. Site may provide foraging habitat.

Species	Status	Habitat and Distribution	Activity Period	Occurrence Probability
Euderma maculatum **Spotted bat**	US: – CA: SSC BLM: S	Found at widely scattered localities in western North America from southern British Columbia to central Mexico. Occurs in a range of habitats from arid, low desert habitats to high elevation conifer forests. Roosts in crevices and caves, usually high in fractured cliff/rock faces; not known to use bridges or buildings for roosting. Can forage over wide distances.	Primarily the warmer months.	**Low –** Generally rare. No roosting sites available on site or vicinity. Site may provide foraging habitat.
Antrozous pallidus **Pallid bat**	US: – CA: SSC BLM: S	Varied habitats in western North America, including grasslands, shrublands, woodlands, deserts, and forest. Primarily day roosts in bridges, hollows or crevices of trees, or buildings. Occasionally roosts in mines, caves, and cliff/rock crevices. Night roosts may be more open sites, such as porches, open buildings, and bridges.	Primarily the warmer months.	**Low –** No roosting sites available on site or vicinity. Site may provide foraging habitat.
Myotis ciliolabrum **Western small-footed myotis**	US: – CA: SA BLM: S	Found across much of North America, primarily in relatively arid wooded and brushy uplands near water. Individuals are known to roost singly or in small groups in cliff and rock crevices, buildings, concrete overpasses, caves, and mines.	Primarily the warmer months.	**Low –** No roosting sites available on site or vicinity. Site may provide foraging habitat.
Myotis yumanensis **Yuma myotis**	US: – CA: SA BLM: S	Occurs in a variety of habitats in western North America, including riparian, arid scrublands and deserts, and forests. Optimal habitats are open forests and woodlands with sources of water over which to feed. Roosts in buildings, mines, caves or crevices; and under bridges. May occasionally roost in swallow nests.	Primarily the warmer months.	**Low –** No roosting sites available on site or vicinity. Site may provide foraging habitat.
Taxidea taxus **American badger**	US: – CA: SSC BLM: –	Occurs throughout much of North America. Primary habitat requirements seem to be sufficient food and friable soils in relatively open uncultivated ground in grasslands, woodlands, and desert.	Year-round.	**Low –** Marginally suitable habitat present on the project site. Not detected during surveys.
Bassariscus astutus **Ringtail**	US: – CA: CFP BLM: –	Woody and rocky areas of the southwestern United States and most of Mexico.	Year-round.	**Low –** Habitat on site may not be suitable.

LEGEND

US: Federal Classifications

FE	Taxa listed as Endangered.
FPT	Taxa proposed for listing as Threatened
FC	Candidate for listing as Threatened or Endangered

CA: State Classifications

CFP	California Fully Protected Species
SSC	California Species of Special Concern. Refers to animals with vulnerable or seriously declining populations.

SA	Special Animal. Refers to any other animal monitored by the Natural Diversity Data Base, regardless of its legal or protection status.
1B	California Rare Plant Rank 1B – rare, threatened or endangered in California and elsewhere.
2	California Rare Plant Rank 2 – rare, threatened or endangered in California, but more common elsewhere.
4	California Rare Plant Rank 4 – a watch list of plants of limited distribution.
BLM: Bureau of Land Management Status	
S	Sensitive. Identified as (1) under status review by the USFWS/NMFS; or (2) whose numbers are declining so rapidly that Federal listing my become necessary, or (3) with typically small and widely dispersed populations; or (4) those inhabiting ecological refugia or other specialized or unique habitats. Two conditions that must be met before a species may be considered as BLM Sensitive: (1) a significant population of the species must occur on BLM-administered lands, and (2) the potential must exist for improvement of the species' condition through BLM management. Does not include Federally listed species, proposed species, candidate species or State-listed species. It is BLM policy to provide sensitive species with the same level of protection that is given Federal candidate species.

APPENDIX B

VASCULAR PLANT SPECIES OBSERVED

Scientific Name	Common Name
PINOPHYTA	**GYMNOSPERMS**
Ephedraceae	**Ephedra family**
Ephedra trifurca	Longleaf jointfir
MAGNOLIOPHYTA: MAGNOLIOPSIDA	**DICOT FLOWERING PLANTS**
Apodanthaceae	**Stemsucker family**
Pilostyles thurberi	Thurber's pilostyles
Asteraceae	**Sunflower family**
Ambrosia dumosa	Burrobush
Ambrosia salsola	Burrobrush
Baileya pauciradiata	Laxflower
Chaenactis stevioides	Steve's dustymaiden
Encelia farinosa	Brittlebush
Encelia frutescens	Button brittlebush
Lactuca serriola (non-native species)	Prickly lettuce
Logfia sp.	Cottonrose
Malacothrix glabrata	Desert dandelion
Palafoxia arida var. *arida*	Desert palafox
Pectis papposa	Manybristle chinchweed
Psathyrotes ramosissima	Velvet turtleback
Rafinesquia neomexicana	Desert chicory
Sonchus oleraceus (non-native species)	Common sow thistle
Stephanomeria exigua	Small wreath-plant
Boraginaceae	**Borage family**
Cryptantha angustifolia	Panamint cryptantha
Cryptantha maritima	Guadalupe cryptantha
Cryptantha micrantha	Redroot cryptantha
Pectocarya heterocarpa	Mixed-nut pectocarya
Tiquilia palmeri	Palmer's crinklemat
Tiquilia plicata	Fanleaf crinklemat
Brassicaceae	**Mustard family**
Brassica tournefortii (non-native species)	Sahara mustard
Dithyrea californica	California shieldpod
Lepidium lasiocarpum	Shaggyfruit pepperweed
Streptanthella longirostris	Streptanthella

Scientific Name	Common Name
Cactaceae	**Cactus family**
Cylindropuntia echinocarpa	Silver cholla
Ferocactus cylindraceus	California barrel cactus
Opuntia basilaris var. *basilaris*	Beavertail prickleypear
Caryophyllaceae	**Pink family**
Achyronychia cooperi	Onyxflower
Chenopodiaceae	**Saltbush family**
Atriplex canescens	Fourwing saltbush
Atriplex polycarpa	Cattle saltbush
Chenopodium murale (non-native species)	Nettleleaf goosefoot
Euphorbiaceae	**Spurge family**
Chamaesyce polycarpa	Smallseed sandmat
Croton californicus	California croton
Stillingia spinulosa	Annual toothleaf
Fabaceae	**Pea family**
Acacia greggii	Catclaw
Lupinus arizonicus	Arizona lupine
Prosopis glandulosa var. torreyana	Honey mesquite
Psorothamnus emoryi	Dyebush
Psorothamnus schottii	Schott's dalea
Psorothamnus spinosus	Smoketree
Fouquieriaceae	**Ocotillo family**
Fouquieria splendens	Ocotillo
Hydrophyllaceae	**Waterleaf family**
Emmenanthe penduliflora	Whispering bells
Nama hispidum	Bristly nama
Loasaceae	**Loasa family**
Petalonyx thurberi ssp. *thurberi*	Thurber's sandpaper plant
Nyctaginaceae	**Four-o'clock family**
Abronia villosa var. *villosa*	Desert sand verbena
Onagraceae	**Evening primrose family**
Camissonia claviformis	Browneyes
Camissonia californica	Mustard-like evening primrose
Oenothera deltoides	Birdcage evening primrose
Plantaginaceae	**Plantain family**
Plantago ovata	Desert Indianwheat
Polemoniaceae	**Phlox family**
Loeseliastrum schottii	Schott's calico

Scientific Name	Common Name
Polygonaceae	**Buckwheat family**
Chorizanthe brevicornu	Brittle spineflower
Chorizanthe rigida	Devil's spineflower
Eriogonum deflexum	Flatcrown buckwheat
Eriogonum thomasii	Thomas' buckwheat
Resedaceae	**Mignonette family**
Oligomeris linifolia	Lineleaf whitepuff
Solanaceae	**Nightshade family**
Lycium cf. *andersonii*	Anderson's desert thorn
Tamaricaceae	**Tamarisk family**
Tamarix aphylla (non-native species)	Athel
Tamarix ramosissima (non-native species)	Mediterranean tamarisk
Zygophyllaceace	**Caltrop family**
Larrea tridentata	Creosote bush
Liliaceae	**Lily family**
Agave desertii	Desert agave
Hesperocallis undulata	Desert lily
Poaceae	**Grass family**
Bouteloua barbata	Sixweeks grama
Schismus barbatus (non-native species)	Common Mediterranean grass

APPENDIX C

WILDLIFE SPECIES DETECTED

This is a list of the conspicuous aerial insects (i.e., dragonflies and butterflies), reptiles, birds, and mammals noted in the spring and/or fall survey areas by LSA biologists. Presence may be noted if a species is seen or heard, or identified by the presence of tracks, scat, or other signs.

Scientific Name	Common Name
ODONATA	**DRAGONFLIES AND DAMSELFLIES**
Libellulidae	**Skimmers**
Sympetrum corruptum	Variegated meadowhawk
Tramea lacerata	Black saddlebags
LEPIDOPTERA	**BUTTERFLIES AND MOTHS**
Nymphalidae	**Brushfooted Butterflies**
Vanessa cardui	Painted lady
REPTILIA	**REPTILES**
Eublepharidae	**Eyelid Geckos**
Coleonyx variegatus	Western banded gecko
Iguanidae	**Iguanas and Allies**
Dipsosaurus dorsalis	Desert iguana
Crotaphytidae	**Collared and Leopard Lizards**
Gambelia wislizenii	Long-nosed leopard lizard
Phrynosomatidae	**Phrynosomatid Lizards**
Callisaurus draconoides	Zebra-tailed lizard
Uta stansburiana	Common side-blotched lizard
Phrynosoma mcallii	Flat-tailed horned lizard
Teiidae	**Whiptails and Allies**
Aspidoscelis tigris	Great Basin whiptail
Colubridae	**Colubrids**
Coluber flagellum	Red racer
Chionactis occipitalis	Western shovel-nosed snake
Viperidae	**Vipers**
Crotalus atrox	Western diamond-backed rattlesnake
Crotalus cerastes	Sidewinder
AVES	**BIRDS**
Odontophoridae	**New World Quail**
Callipepla californica	California quail
Callipepla gambelii	Gambel's quail
Ardeidae	**Herons, Egrets, and Bitterns**
Bubulcus ibis	Cattle egret

Scientific Name	Common Name
Cathartidae	**New World Vultures**
Cathartes aura	Turkey vulture
Accipitridae	**Hawks, Kites, Eagles, and Allies**
Accipiter striatus	Sharp-shinned hawk
Buteo jamaicensis	Red-tailed hawk
Buteo regalis	Ferruginous hawk
Buteo swainsoni	Swainson's hawk
Falconidae	**Caracaras and Falcons**
Falco sparverius	American kestrel
Falco columbarius	Merlin
Falco mexicanus	Prairie falcon
Charadriidae	**Plovers and Lapwings**
Charadrius vociferus	Killdeer
Columbidae	**Pigeons and Doves**
Columba livia (non-native species)	Rock pigeon
Zenaida asiatica	White-winged dove
Zenaida macroura	Mourning dove
Streptopelia decaocto (non-native species)	Eurasian collared dove
Cuculidae	**Cuckoos, Roadrunners, and Anis**
Geococcyx californianus	Greater roadrunner
Strigidae	**Typical Owls**
Bubo virginianus	Great horned owl
Athene cunicularia	Burrowing owl
Caprimulgidae	**Goatsuckers**
Chordeiles acutipennis	Lesser nighthawk
Phalaenoptilus nuttallii	Common poorwill
Apodidae	**Swifts**
Cypseloides niger	Black swift
Aeronautes saxatalis	White-throated swift
Trochilidae	**Hummingbirds**
Archilochus alexandri	Black-chinned hummingbird
Calypte anna	Anna's hummingbird
Picidae	**Woodpeckers**
Picoides scalaris	Ladder-backed woodpecker
Tyrannidae	**Tyrant Flycatchers**
Contopus cooperi	Olive-sided flycatcher
Empidonax difficilis	Pacific-slope flycatcher
Sayornis nigricans	Black phoebe
Sayornis saya	Say's phoebe
Tyrannus verticalis	Western kingbird

Scientific Name	Common Name
Laniidae	**Shrikes**
Lanius ludovicianus	Loggerhead shrike
Vireonidae	**Vireos**
Vireo cassinii	Cassin's vireo
Vireo gilvus	Warbling vireo
Corvidae	**Crows and Jays**
Corvus corax	Common raven
Alaudidae	**Larks**
Eremophila alpestris	Horned lark
Hirundinidae	**Swallows**
Tachycineta bicolor	Tree swallow
Petrochelidon pyrrhonota	Cliff swallow
Hirundo rustica	Barn swallow
Remizidae	**Penduline Tits and Verdins**
Auriparus flaviceps	Verdin
Troglodytidae	**Wrens**
Thryomanes bewickii	Bewick's wren
Troglodytes aedon	House wren
Cistothorus palustris	Marsh wren
Sylviidae	**Old World Warblers and Gnatcatchers**
Polioptila caerulea	Blue-gray gnatcatcher
Polioptila melanura	Black-tailed gnatcatcher
Mimidae	**Mockingbirds and Thrashers**
Oreoscoptes montanus	Sage thrasher
Toxostoma lecontei	Le Conte's thrasher
Sturnidae	**Starlings**
Sturnus vulgaris (non-native species)	European starling
Ptilogonatidae	**Silky-flycatchers**
Phainopepla nitens	Phainopepla
Parulidae	**Wood Warblers**
Oreothlypis celata	Orange-crowned warbler
Vermivora ruficapilla	Nashville warbler
Dendroica petechia	Yellow warbler
Dendroica coronata	Yellow-rumped warbler
Dendroica townsendi	Townsend's warbler
Oporornis tolmiei	MacGillivray's warbler
Wilsonia pusilla	Wilson's warbler
Emberizidae	**Emberizines**
Pipilo chlorurus	Green-tailed towhee
Melozone aberti	Abert's towhee

Scientific Name	Common Name
Spizella breweri	Brewer's sparrow
Zonotrichia leucophrys	White-crowned sparrow
Cardinalidae	**Cardinals, Grosbeaks and Allies**
Piranga ludoviciana	Western tanager
Pheucticus melanocephalus	Black-headed grosbeak
Passerina amoena	Lazuli bunting
Icteridae	**Blackbirds, Orioles and Allies**
Sturnella neglecta	Western meadowlark
Quiscalus mexicanus	Great-tailed grackle
Molothrus ater	Brown-headed cowbird
Icterus sp.	Oriole
Fringillidae	**Fringilline and Cardueline Finches and Allies**
Carpodacus mexicanus	House finch
Carduelis psaltria	Lesser goldfinch
Spinus pinus	Pine siskin
MAMMALIA	**MAMMALS**
Heteromyidae	**Pocket Mice and Kangaroo Rats**
Dipodomys sp.	Kangaroo rat
Leporidae	**Rabbits and Hares**
Lepus californicus	Black-tailed jackrabbit
Sciuridae	**Squirrels**
Spermophilus tereticaudus	Round-tailed ground squirrel
Canidae	**Foxes, Wolves, and Allies**
Canis latrans	Coyote
Vulpes macrotis	Kit fox

Taxonomy and nomenclature are based on the following:

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Wilson, D. E., and D. M. Reeder (eds). 2005. Mammal Species of the World: A Taxonomic and Geographic Reference (3rd ed). Johns Hopkins University Press, 2,142 pp.

APPENDIX D

RARE PLANT SURVEY REPORT

APPENDIX E

FLAT-TAILED HORNED LIZARD SURVEY REPORT

APPENDIX F

BURROWING OWL SURVEY REPORT

APPENDIX G

WINTER AVIAN POINT-COUNT SURVEY REPORT

APPENDIX H

SPRING AVIAN POINT-COUNT SURVEY REPORT