Appendix D-1

Biological Resources Report

LOCKHART SOLAR PV II PROJECT

Unincorporated Hinkley, CA
San Bernardino County, California

BIOLOGICAL RESOURCES REPORT

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LOCKHART SOLAR PV II PROJECT

HINKLEY AREA,
SAN BERNARDINO COUNTY, CALIFORNIA

Biological Resources Report

The undersigned certify that this report is a complete and accurate account of the findings and conclusions of a biological resources assessment for the above-referenced project.

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October 2021

Executive Summary

On behalf of Lockhart Solar PV II, LLC, Michael Baker International (Michael Baker) has prepared this Biological Resources Report for the Lockhart Solar PV II Project (Project), located in the Lockhart area northwest of the unincorporated community of Hinkley, San Bernardino County, California. The Project will result in the repurposing and expansion of a previously approved 80-megawatt (MW) California Energy Commission (CEC) solar thermal facility that was never constructed, but was largely graded and foundations partially laid, and result instead in a utility-scale, solar photovoltaic (PV) electricity generation and energy storage facility that would produce up to 150 MW of power and include up to 4 gigawatt hours (GWh) of battery storage capacity.

The 755-acre Project Site consists of three parcels, each of which contains vacant, previously disturbed land or miscellaneous concrete foundations, various electrical lines and poles, as well as existing facilities within the Shared Facilities Area. The Project Site is bordered on the south by the existing Solar Energy Generating System (SEGS) VIII and IX solar facilities, which the County of San Bernardino (County) approved for repowering to PV solar and battery storage in 2019 as part of the Lockhart Solar I Facility (CUP Project #201900125 approved in 2019), the Abengoa Mojave Solar Project located further to the south across Hoffman Road, and relatively undisturbed, undeveloped land to the north, west, and east, with the Harper Dry Lake located less than one mile to the east. This report was prepared to document all biological resources identified within the survey areas during general biological resources surveys and focused surveys conducted by Michael Baker. The boundaries for the general biological resources surveys and focused surveys are provided in the respective reports' appendices. The Shared Facilities Area was surveyed as part of the permitting effort for the approved Lockhart Solar I Facility (Michael Baker International 2018). The Shared Facilities Area is located in between two existing solar thermal facilities (SEGS VIII and IX) and has incurred comprehensive severe surface disturbance over the past 30 years as part of the two operational solar thermal facilities and continues to be completely denude of vegetation. Thus, the Shared Facilities Area did not need to be resurveyed. This report includes a floral and faunal inventory, vegetation/land use mapping, and habitat suitability assessments to determine the potential for special-status[1] plant and wildlife species and vegetation communities to occur within the survey area.

The survey area for the general biological resources survey is 713.39 acres, inclusive of the Project Site and buffer area and exclusive of the Shared Facilities Area, in size and is mainly composed of areas of native vegetation, bare ground, open water, and developed areas within the Mojave Desert. Four (4) natural vegetation communities were observed and mapped within the boundaries of the survey area: spinescale scrub, allscale scrub, disturbed allscale scrub, and

[1] As used in this report, "special-status" refers to plant and wildlife species that are Federally-/State-listed, proposed, or candidates; plant species that have been designated a California Rare Plant Rank species by the California Native Plant Society; wildlife species that are designated by the California Department of Fish and Wildlife as Fully Protected, Species of Special Concern, or Watch List species; and State/locally rare vegetation communities.

tamarisk thickets. Spinescale scrub qualifies as a sensitive vegetation community by the California Department of Fish and Wildlife (CDFW). In addition, the survey area contains three (3) non-vegetation land cover types that would be classified as open water, bare ground, and developed.

One special-status plant was observed within the survey area: Mojave spineflower (*Chorizanthe spinosa*; California Rare Plant Rank [CRPR] 4.2). Based on the results of the field survey and a review of specific habitat preferences, distributions, and elevation ranges, it was determined that the survey area has a low potential to support Barstow woolly sunflower (*Eriophyllum mohavense*; CRPR 1B.2), desert cymopterus (*Cymopterus deserticola*; CRPR 1B.2), crowned muilla (*Muilla coronata*; CRPR 4.2), and Beaver Dam breadroot (*Pediomelum castoreum*; CRPR 1B.2). All remaining special-status plant species identified during Michael Baker's literature review are not expected to occur within the survey area.

Six (6) special-status wildlife species were observed within the survey area during Michael Baker's 2020 and 2021 field surveys, including sharp-shinned hawk (*Accipiter striatus*; CDFW Watch List species [WL]), northern harrier (*Circus hudsonius*; CDFW Species of Special Concern [SSC]), California horned lark (*Eremophila alpestris actia*; WL), loggerhead shrike (*Lanius ludovicianus*; SSC), California gull (*Larus californicus*; WL), and double-crested cormorant (*Phalacrocoracidae auritus*; WL). Based on current site conditions and reviews of specific habitat preferences, occurrence records, known distributions, and elevation ranges, it was determined that the survey area has a moderate potential to support long-eared owl (*Asio otus*; SSC). Additionally, it was determined that the survey area has a low potential to support golden eagle (*Aquila chrysaetos*; CDFW Fully Protected species), burrowing owl (*Athene cunicularia*; SSC), prairie falcon (*Falco mexicanus*; WL), yellow warbler (*Setophaga petechia*; SSC), desert kit fox (*Vulpes macrotis arsipus*; a State-protected furbearing mammal), and American badger (*Taxidea taxus*; SSC). All remaining special-status wildlife species identified during Michael Baker's literature review are not expected to occur within the survey area. Although no special-status bats were identified within the 9-quad search radius, a single unidentified vesper bat (*Family Vespertilionidae*) was found roosting in a shed within the survey area in July 2021. Therefore, bats, which are protected by the CDFW as nongame mammals under California Fish and Game Code Section 4150, are assumed to be present within the survey area. Note that Mohave ground squirrel (*Xerospermophilus mohavensis*; State Threatened species) is not included in this report or its analyses and will be analyzed separately.

Desert tortoise (*Gopherus agassizii*; Federally and State Threatened species) habitat is present throughout the survey area. The Project Site is approximately 0.25-mile from desert tortoise designated Critical Habitat and is within a historically well-occupied part of the tortoise's range. However, the local population has undergone severe declines over time and focused presence/absence surveys in the survey area in May 2020, March 2021, and July 2021 found no indication of tortoise presence, resulting in the determination that desert tortoise must also be

absent. As part of the SEGS X project (in the early 1990s), the entire perimeter of the former SEGS X site was fenced with a 6-foot-tall chain link with associated desert tortoise exclusion fencing. The fence had previously been damaged with some gaps in coverage but was promptly repaired and reinforced following the negative desert tortoise survey results in 2020. Furthermore, the fence is inspected and maintained by site operation personnel on a regular basis (a minimum of once a week) to ensure it remains intact and effective. Based on the results of the focused surveys and because the fence was promptly repaired and reinforced, it was determined that desert tortoise is absent from the entire survey area as of July 2021 and is unlikely to occur in the future.

Bird nesting opportunities can occur within the shrubs located within the majority of the survey area. Numerous nests of both saltbush Bell's sparrow (*Artemisiospiza belli canescens*) and lesser nighthawk (*Chordeiles acutipennis*) were found during the focused desert tortoise surveys, and a few individual tamarisks (*Tamarix ramosissima*) located in the southeast corner of the survey area provide minimal nesting habitat for tree-nesting species. Ground nesting species may also nest throughout the earthen portions of the survey area. Finally, no U.S. Fish and Wildlife Service-designated critical habitat has been mapped within the survey area.

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LIST OF ACRONYMS AND ABBREVIATIONS

amsl	Above Mean Sea Level
BESS	Battery Energy Storage System
BLM	Bureau of Land Management
BMP	Best Management Practices
BRMIP	Final Biological Resources Mitigation Implementation Plan
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDNPA	California Desert Native Plants Act
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CUP	Conditional Use Permit
DRECP	Desert Renewable Energy Conservation Plan
EIR	Environmental Impact Report
EREMICO	EREMICO Biological Services
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
GWh	Gigawatt hour
IPaC	Information for Planning and Consultation online system
IS	Initial Study
MBTA	Migratory Bird Treaty Act
MCV	Manual of California Vegetation
Michael Baker	Michael Baker International
MOU	Memorandum of Understanding
MW	Megawatt
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
O&M	Operations & Maintenance
OHWM	Ordinary High Water Mark
PV	Photovoltaic
Project	Lockhart Solar PV II Project
RE	Renewable Energy

SEGS	Solar Energy Generating System
SCE	Southern California Edison
SP	Soil Pit
SSC	Species of Special Concern
USACE	U.S. Army Corps of Engineers
USC	U.S. Government Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WL	California Department of Fish and Wildlife Watch List Species
WoUS	Waters of the United States

Section 1 Introduction

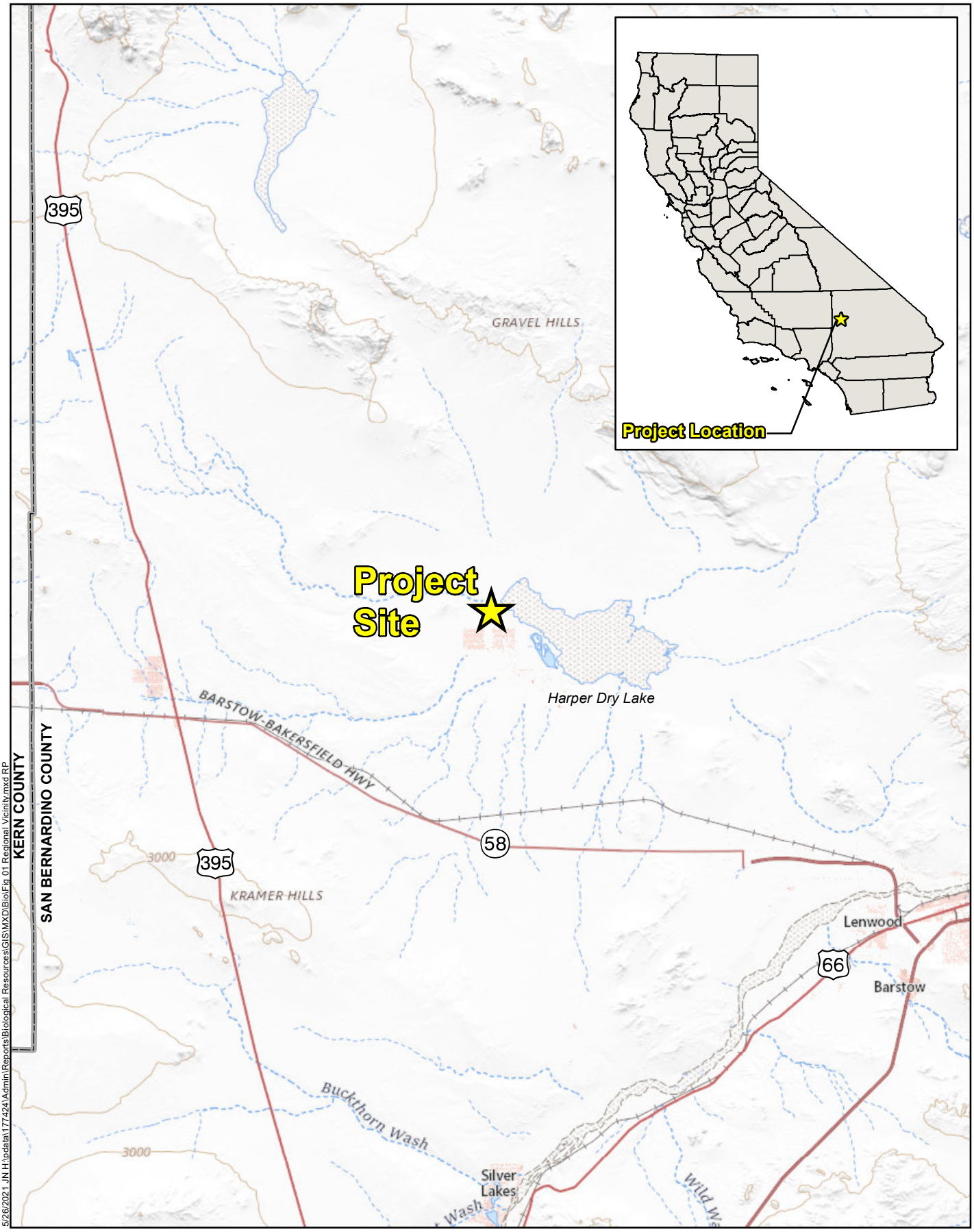
On behalf of Lockhart Solar PV II, LLC, Michael Baker International (Michael Baker) has prepared this Biological Resources Report for the Lockhart Solar PV II Project (Project). This report describes the biological resources record searches and literature review, survey methodology, and results of the biological resources survey and review conducted for the Project.

1.1 PROJECT LOCATION

The Project Site is in unincorporated Hinkley, CA, approximately 7 miles north of the intersection of Harper Lake Road and Mojave-Barstow Highway 58 (Figure 1, *Regional Vicinity*). The Project Site consists of an area within three parcels, each of which contain vacant, previously disturbed land or miscellaneous concrete foundations, various electrical lines and poles, as well as existing facilities within the Shared Facilities Area. The Project Site is bordered on the south by the existing Solar Energy Generating System (SEGS) VIII and IX Solar Thermal Power Plants, which the County of San Bernardino (County) approved for repowering to photovoltaic (PV) solar and battery storage in 2019 as part of the Lockhart Solar I Facility (CUP Project #201900125 approved in 2019), the Abengoa Mojave Solar Project located further to the south across Hoffman Road, and relatively undisturbed, undeveloped land to the north, west, and east, with the Harper Dry Lake located less than one mile to the east (Figure 2, *Project Site*). Vehicular access is currently provided via Harper Lake Road and a private road through the Shared Facilities Area.

1.2 PROJECT BACKGROUND AND DESCRIPTION

Lockhart Solar PV II, LLC (Applicant) proposes to develop the Lockhart Solar PV II Project (Project), a utility scale, solar photovoltaic (PV) electricity generation and energy storage facility that would produce up to 150 megawatts (MW) of solar power and include up to 4 gigawatt hours (GWh) of energy storage capacity rate in a battery energy storage system (BESS) within the approximately 755-acre Project Site. The Project is located within the County of San Bernardino (County) and is largely sited on land previously approved by the California Energy Commission (CEC) for development of Solar Energy Generating System (SEGS) X, a solar thermal power facility which was never fully constructed. The Project is bordered on the south by the approved Lockhart Solar I Facility and the existing SEGS VIII and IX Solar Thermal Plants. The Project would share existing operations and maintenance (O&M) facilities with the Lockhart Solar I Facility (i.e., O&M building, warehouse and employee building), water and septic systems, switchyard and electrical transmission infrastructure, and a new collector substation (approved and to be constructed) within the approximately 110-acre “Shared Facilities Area” to connect the Project to the existing transmission line which runs to the Southern California Edison (SCE)-owned Kramer Junction substation.



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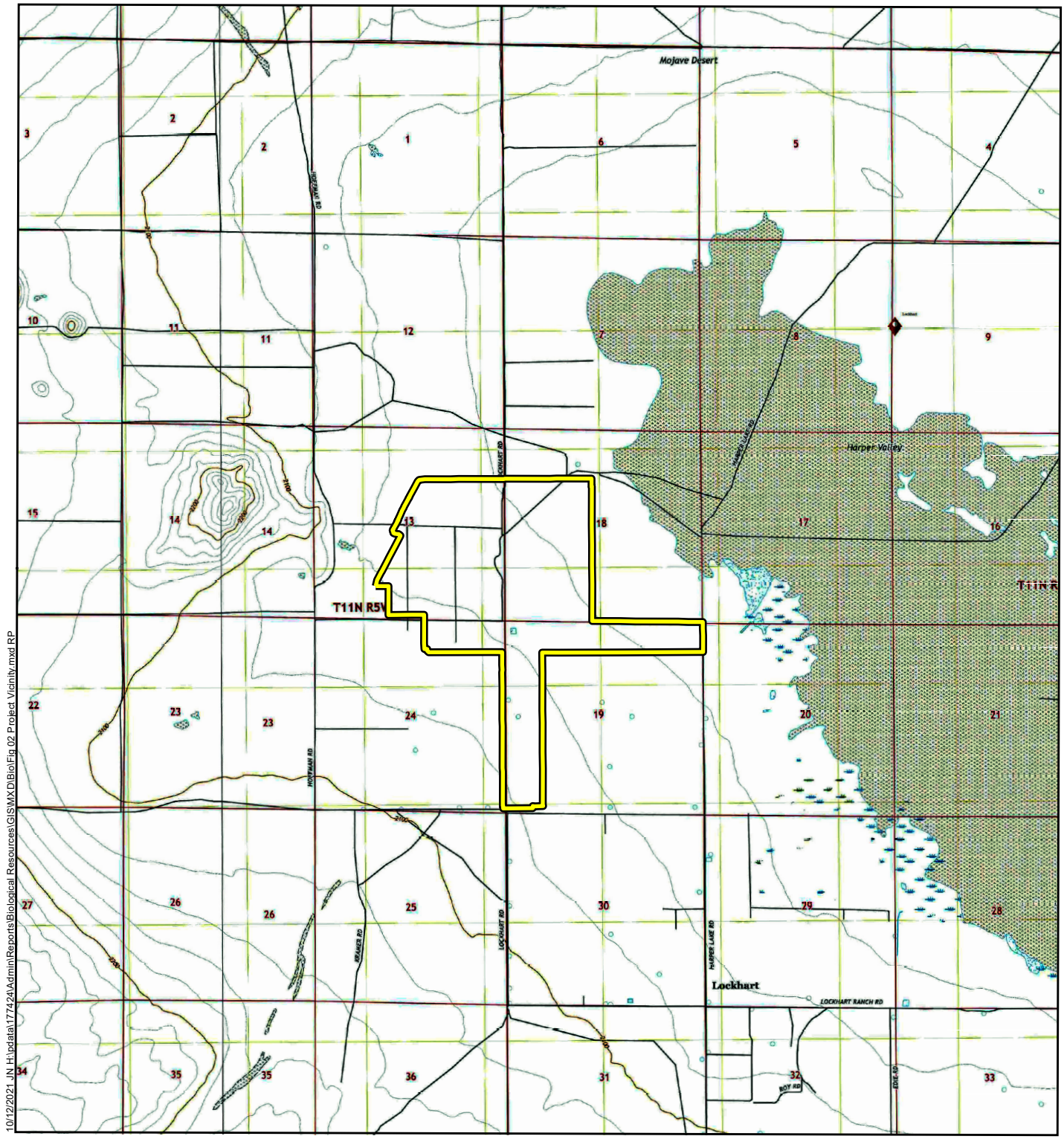
0 2.5 5 Miles

Source: ArcGIS Online, 2018

LOCKHART SOLAR PV II PROJECT
BIOLOGICAL RESOURCES REPORT

Regional Vicinity

Figure 1



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Legend

Project Site

0 0.375 0.75 Miles

Source: USGS 7.5-Minute topographic quadrangle maps: *Lockhart, California (2018) and The Buttes, California (2018)*

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LOCKHART SOLAR PV II PROJECT
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Project Vicinity

Figure 2

Project Background

During the early 1990s, construction of the SEGS X solar thermal facility was initiated on the Project Site. SEGS X was part of a series of three solar thermal power plants certified by the CEC which were to be built adjacent to each other in order to share supporting facilities. SEGS X was fully permitted and certified as an 80 MW solar thermal facility. Approximately 600 acres were identified for the SEGS X power plant including land for associated facilities to be shared with the two adjacent solar thermal power plants (SEGS VIII and IX). Per the SEGS IX and X CEC certification, permanent impacts to loss of the then-existing high-quality habitats were mitigated through purchase of 1,680 acres of conservation land at a 5 to 1 ratio for both Mohave ground squirrel and desert tortoise, pursuant to the California Department of Fish and Game (CDFG), now known as the California Department of Fish and Wildlife (CDFW), requirements and approvals. All of these mitigation lands were protected even though the SEGS X Facility was never fully constructed.

In 1991, the SEGS X owner was unable to continue construction due to lack of financing and construction was halted. Prior to work stoppage, several concrete foundations for the power block as well as concrete foundations for solar racking had been installed in portions of the Project Site. The Project proposes to use these already disturbed parcels to construct a solar PV and BESS facility.

Project Overview and Design

As stated above, the Project includes the development of solar PV facilities, BESS, and associated infrastructure with the capacity to generate up to 150 MW of solar energy and up to 4 GWh of energy storage capacity rate. The previously installed SEGS X concrete foundations will be removed if the foundations conflict with installation of Project facilities; they will otherwise be left in place. Concrete from SEGS X foundations would be demolished and exported from the site for proper disposal at a licensed landfill. Previously constructed concrete solar racking piers in the southwest portion of the site will remain in place as newer steel foundation piles can be driven around the old piers further reducing soil disturbance and offsite hauling and landfilling of debris.

Existing O&M buildings, warehouse and the employee building within the approximately 110-acre “Shared Facilities Area” would be shared by Lockhart Solar I Facility and Project operations staff. The Project would also be served by shared, and already approved, water and septic systems within the adjacent Lockhart Solar I Facility site to the south. The Shared Facilities Area includes the already approved BESS for Lockhart Solar I (County permitted), BESS for SEGS IX (CEC permitted), and would include the BESS for the Project, as these facilities are integral to the collector substation. In addition, the already approved collector substation and the existing switchyard located within the Shared Facilities Area will be upgraded, as necessary, to connect the Project to the existing transmission line which runs to SCE-owned Kramer Junction substation as a shared facility. The Project is subject to conditional use permit (CUP) approval from the County.

Site Grading and Earthwork

Site grading and earthwork activities are expected to include mowing, excavation, and pile-driving. Grading of the Project Site would be limited to the greatest extent possible to control dust. Micro-grading would occur to maintain pile foundation tolerances and grading would be required for installation of site roads and preparation of equipment foundation pads. Solar panels are attached to driven piles and do not require foundation pads.

The Project may require grading for extension of the existing berm into an open channel located outside the Project fence line along the western and northern boundary of the Project Site for the collection and routing of offsite run-on. If feasible, this channel may be constructed within the fence line to limit new disturbance associated with Project construction. The channel would redirect flows to drain to the existing watershed which flows toward Harper Dry Lake. Site preparation and construction would occur in accordance with all federal, state, and County zoning codes and requirements.

All applicable local, State, and federal requirements and best management practices (BMPs) would be incorporated into Project construction activities. The construction contractor would be required to incorporate BMPs consistent with the County zoning ordinance and with guidelines provided in the California Stormwater Quality Association's Construction Best Management Practice Handbook, including the preparation of a Stormwater Pollution Prevention Plan and a Soil Erosion and Sedimentation Control Plan to reduce potential impacts related to construction of the Project.

Decommissioning

At the end of the Project's operational term, the Applicant may determine that the Project should be decommissioned and deconstructed, or it may seek an extension of its CUP. The Applicant will work with the County to ensure decommissioning of the Project after its productive lifetime complies with all applicable local, state, and federal requirements BMPs.

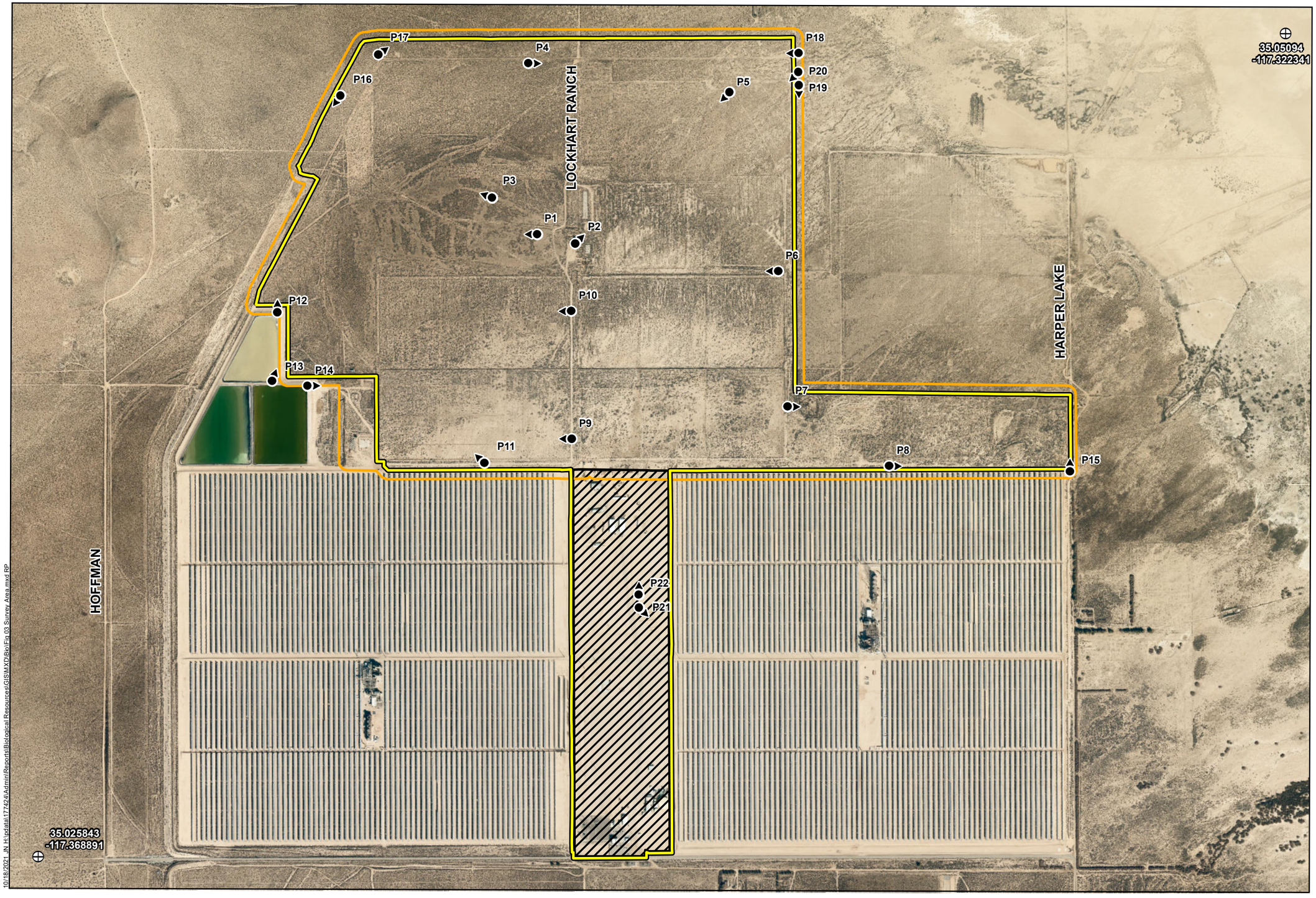
Site infrastructure would be removed, including fences and concrete pads that may support the inverters, transformers, and related equipment. The exterior fencing and gates would be removed, and materials would be recycled to the extent feasible. Project roads would be restored to their pre-construction condition to the extent feasible unless the landowner elects to retain the improved roads for access throughout the property.

1.3 PURPOSE OF DOCUMENT

This report documents all biological resources identified within the survey area during general biological resource surveys and focused protocol-level desert tortoise (*Gopherus agassizii*) surveys conducted by Michael Baker biologists. The boundaries for the general biological resources surveys and focused surveys are provided in the respective reports' appendices. The

Shared Facilities Area was surveyed as part of the permitting effort for the approved Lockhart Solar I Facility (Michael Baker International 2018). The Shared Facilities Area is located in between two existing solar thermal facilities (SEGS VIII and IX) and has incurred comprehensive severe surface disturbance over the past 30 years as part of the two operational solar thermal facilities and continues to be completely denude of vegetation. Thus, the Shared Facilities Area did not need to be resurveyed. This report includes an analysis of the potential for the survey area to support special-status[2] plant and wildlife species and special-status vegetation communities that have been previously recorded or are known to occur within the vicinity and that are subject to provisions of the Federal Endangered Species Act (FESA) of 1973, Migratory Bird Treaty Act (MBTA), California Endangered Species Act (CESA), California Environmental Quality Act (CEQA), California Fish and Game Code (CFGC), California Native Plant Protection Act, California Desert Native Plants Act (CDNPA), Bald and Golden Eagle Protection Act, and other local policies and ordinances protecting biological resources.

[2] As used in this report, "special-status" refers to plant and wildlife species that are Federally-/State-listed, proposed, or candidates; plant species that have been designated a California Rare Plant Rank species by the California Native Plant Society; wildlife species that are designated by the California Department of Fish and Wildlife as Fully Protected, Species of Special Concern, or Watch List species; and State/locally rare vegetation communities.



Legend

- Project Site
- Survey Area (100-foot Buffer)
- Shared Facilities Area
- Photograph Point and Direction
- Reference Point

0 550 1,100 Feet

10/18/2021 JN H:\data\17742\Admin\Reports\Biological Resources\GIS\MXD\Bio\Fig 03 Survey Area.mxd RP

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Source: Esri, 2020

LOCKHART SOLAR PV II PROJECT
BIOLOGICAL RESOURCES REPORT

Survey Area

Figure 3

Section 2 Methodology

2.1 LITERATURE REVIEW AND DATABASE SEARCHES

Prior to conducting the field surveys, Michael Baker conducted a thorough literature review and records search of the survey area encompassing a 9-quad search of the U.S. Geological Survey (USGS) quad that the survey area is located in (Lockhart) as well as the adjacent eight quads, *Fremont Peak, Bird Spring, Opal Mountain, The Buttes, Water Valley, Kramer Hills, Twelve Gauge Lake,* and *Hinkley, California* (Project vicinity). This 9-quad search was used for the CDFW Biogeographic Information and Observation System (CDFW 2021a), CDFW California Natural Diversity Database (CNDDB) RareFind 5 (CDFW 2021b), and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants (CNPS 2021). In addition, the survey area was used to generate a Species and Resources List from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation online system (IPaC; USFWS 2021a). This helped to identify special-status plant and wildlife species, vegetation communities, and other biological resources that have been previously documented within, near, and/or that have the potential to occur within the survey area. The *Special Animals List* (CDFW 2021c, *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2021d), and CNPS California Rare Plant Ranking System (CRPR) were reviewed for the current status of rare and endangered plant and wildlife species. Other resources reviewed include the USFWS Critical Habitat for Threatened & Endangered Species Mapper (USFWS [ArcGIS Online] 2021); recent and historical aerial photography (Google Earth Pro 2021); the U.S. Department of Agriculture, Natural Resources Conservation Service (USDA) Web Soil Survey (USDA 2021a); USFWS National Wetland Inventory (NWI) Mapper (USFWS 2021b); Federal Emergency Management Agency (FEMA) 100 Year Flood Zones (ArcGIS Online 2020); *Commission Decision Application for Certification for Luz Engineering Corporation Luz SEGS IX and X Projects (Harper Lake)* (CEC 1990); *Status of Habitat Mitigation for Harper Lake SEGS Projects* (CEC 1993); *Final Biological Resources Mitigation Implementation Plan (BRMIP) for the Luz SEGS IX and X Project Area, Harper Lake, California* (ENSR 1990); *Biological Resources Mitigation Implementation Plan (BRMIP) Third Quarter 2018 Compliance Report for the SEGS VIII and IX Project Area, Harper Lake, California* (LSA 2018); and the *Biological Resources Report for the Lockhart Solar Project* (Michael Baker 2018).

2.2 GENERAL BIOLOGICAL RESOURCES SURVEYS

Following the literature review, Michael Baker biologists Stephen Anderson, Ryan Winkleman, and Tom Millington conducted a general biological resources assessment (reconnaissance survey) over a majority of the survey area on February 27, 2020 between the hours of 0900 and 1400, with weather conditions consisting of temperatures ranging from approximately 46 to 71 degrees Fahrenheit (°F), winds approximately 1 to 5 miles per hour, and clear skies. A second reconnaissance survey was performed by Michael Baker biologists Mr. Winkleman, Mr. Millington,

Ashley Spencer, and Tim Tidwell on the morning of March 11, 2021 between the hours of 0900 and 1145 to assess an expansion of the survey area abutting the entire existing northern boundary of the Project Site. Weather conditions during the second visit consisted of temperatures ranging from approximately 55 to 66°F, winds approximately 1 to 5 miles per hour, and partly cloudy skies. The surveys were conducted to document existing site conditions, obtain an inventory of plant and wildlife species, map vegetation communities/land uses, determine the potential for special-status plant and wildlife resources to occur within the survey area, and to identify jurisdictional aquatic features, if present. As previously noted, the total survey area across 2020 and 2021 encompassed a 100-foot buffer around the Project Site, with the exception of the Shared Facilities Area that was already reviewed and permitted for the Lockhart Solar I Facility and is completely devoid of any vegetation (Michael Baker International 2018). Representative photographs of the Project Site, including the survey area and Shared Facilities Area (from 2018), are provided at the end of this report in Appendix A, *Project Site Photographs*. Refer to Figure 3 for the location and direction from which each photograph was taken.

2.2.1 Vegetation/Land Use Mapping and Plant Species Inventory

Classification of the vegetation communities and other land uses within the survey area is based on the descriptions of terrestrial vegetation classification systems described in *A Manual of California Vegetation* (MCV; Sawyer et al. 2009) and cross referenced with the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). Plant species nomenclature and taxonomy follow *The Jepson Manual: Vascular Plants of California, second edition* (Baldwin et al. 2012). All plant species encountered were noted and identified at minimum to the lowest possible taxonomic level necessary to determine rarity. Refer to Appendix B, *Plant and Wildlife Species Observed List*, for a complete list of plant species observed within the survey area.

2.2.2 General Wildlife Observations

Field guides used to assist with identification of species during the habitat assessment included *The Sibley Guide to Birds* (Sibley 2014) for birds, *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003) for herpetofauna, *Bats of the United States and Canada* (Harvey et al. 2011) for bats, and *A Field Guide to Mammals of North America* (Reid 2006). Although common names of wildlife species are well standardized, scientific names are provided immediately following common names of wildlife species in this report (first reference only). To the extent possible, nomenclature of birds follows the most recent annual supplement of the American Ornithological Union's *Checklist of North American Birds* (Chesser et al. 2020), nomenclature of amphibians and reptiles follows *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding* (Crother 2017), and nomenclature for mammals follows the *Revised Checklist of North American Mammals North of Mexico* (Bradley et al. 2014). All wildlife species observed and/or otherwise detected through sign (e.g., tracks, scat) were recorded. Other

wildlife species may occupy the survey area but, in some cases, may be nocturnal and not easily detectable during the day without extensive survey efforts during the appropriate season. Some species are transients or migrants and may occupy the survey area other times of the year outside of the time that the field survey was conducted. Refer to Appendix B for a complete list of wildlife species observed or otherwise detected within the survey area.

2.3 OTHER FIELD STUDIES

2.3.1 Desert Tortoise Presence/Absence Surveys

A database search of the CDFW's CNDDB was used to identify and map all known desert tortoise (*Gopherus agassizii*; Federally and State Threatened species) locations within five miles of the Project Site as well as a comprehensive literature review of available previous biological studies and environmental documents completed for the Project and its vicinity, primarily the Commission Decision Application for Certification for Luz Engineering Corporation Luz SEGS IX and X Facilities (Harper Lake) (CEC 1990). Michael Baker biologists also reviewed USFWS Critical Habitat documentation to determine the Project's location in relation to desert tortoise Critical Habitat (USFWS [ArcGIS Online] 2021). Based on the results, it was determined that the Project Site is located within the historic range of desert tortoise, that the Project Site is located 0.3 mile from designated desert tortoise Critical Habitat, and that desert tortoise sign has previously been found in areas immediately surrounding the Project at the time SEGS X construction was initiated in the early 1990s. In addition, there are two (2) records of this species in the CNDDB within a 5-mile radius of the Project Site, both from 2006 (CDFW 2021b).

Michael Baker biologists conducted a 100-percent coverage desert tortoise presence/absence survey of what was originally defined as the Project Site in May 2020 following the "quantitative survey" protocol for sites larger than 500 acres. Following the expansion of the Project Site in 2021, Michael Baker biologists performed supplemental 100-percent coverage desert tortoise presence/absence surveys of only the new areas in March and July 2021 following the "small project surveys" protocol for sites smaller than 500 acres, which allows surveys to be conducted at any time of year. This protocol was used for the 2021 surveys because the existing chain link fence and desert tortoise exclusion fence surrounding the fenced portion of the survey area was promptly repaired and reinforced in summer 2020 after the May 2020 surveys were completed, and thus it was Michael Baker's determination that the fenced area was unlikely to have experienced any movement of new desert tortoises into the site in the interim that would otherwise have required the 2020 focused surveys to be repeated. As such, DETO have been determined not to be present within the fenced area and the 2020 DETO survey area was not resurveyed as part of this effort. Figure 2 in *Appendix F: Desert Tortoise Focused Survey Results (2021)* provides a depiction of 2020 and 2021 survey areas.

2.3.2 Jurisdictional Features Analysis

Michael Baker conducted a thorough literature review of relevant resources to obtain an initial understanding of the environmental setting and to preliminarily identify features that could be regulated by the jurisdictional agencies. Michael Baker reviewed the USFWS NWI Mapper (USFWS 2021b). Review of this resource concluded that no wetland features are mapped within the Project Site.

Michael Baker also reviewed FEMA's National Flood Hazard Layer (USDHS, FEMA 2008). Based on the Flood Insurance Rate Map the Project Site is currently mapped with a designation of FEMA Flood Zone D according to FEMA Panel Number 06071C3250H, dated 8/28/2008. Zone D areas are described as "Undetermined Flood Hazard" per the FIRM panel. This indicates that a formal hydrologic and hydraulic study for the area has not been completed, and therefore, the area has not been mapped and approved by FEMA with floodplain, floodway or Base Flood Elevation information. Flood hazards are currently undetermined in this area.

The National Hydrography Dataset was also reviewed for available hydrography data within the Project Site using the USGS National Map Advanced Viewer (USGS 2021). According to the National Hydrography Dataset, no features (including ephemeral streams) were noted within the Project Site.

Michael Baker certified wetland delineator and regulatory specialist Tim Tidwell conducted a formal jurisdictional delineation of the survey area on March 11, 2021 using the most recent, agency approved methodology and regulatory guidance, to identify and map jurisdictional limits within the survey area. The delineation was conducted to further confirm the findings of the literature review that no jurisdictional areas are located within the survey area as they relate to waters of the U.S. (WoUS), including potential wetlands, and waters of the State.

2.3.3 Rare Plant Focused Surveys

A database search of the CDFW's CNDDB and the CNPS Online Inventory of Rare and Endangered Plants was used to identify and map rare plant records within five miles of the Project Site. Additionally, a comprehensive literature review of available previous biological studies and environmental documents previously completed for the Project Site and its vicinity was also conducted, including the Commission Decision Application for Certification for Luz Engineering Corporation Luz SEGS IX and X Facilities (Harper Lake) (CEC 1990). Based on the database search and literature review, it was determined that a total of twelve (12) special-status plant species have been recorded within the 9-quad search radius, although only two (2) have been recorded within five miles of the Project Site. Through Michael Baker's general reconnaissance surveys in 2020 and 2021, it was determined that the survey area has a moderate potential to support Mojave spineflower (*Chorizanthe spinosa*; CRPR 4.2) and Barstow woolly sunflower (*Eriophyllum mohavense*; CRPR 1B.2); and a low potential to support desert cymopterus (*Cymopterus deserticola*; CRPR 1B.2), crowned muilla (*Muilla coronata*; CRPR 4.2), and Beaver

Dam breadroot (*Pediomelum castoreum*; CRPR 1B.2). To determine the presence or absence of these species or any other special-status plants, biologists from EREMICO Biological Services (EREMICO) conducted rare plant surveys within the survey area in March and April 2021.

Section 3 Existing Conditions

The following is a summarization of the results of the database review and general biological resources survey performed by Michael Baker. Discussions regarding the general environmental setting, vegetation communities and other land uses present, and plant and wildlife species observed are presented below. Representative photographs of the Project Site are provided in Appendix A, and a complete list of all the plant and wildlife species observed within the survey area during the field surveys is provided in Appendix B.

3.1 ENVIRONMENTAL SETTING

The survey area is bordered by the existing SEGS VIII and IX solar facilities to the south, and relatively undisturbed, undeveloped land to the north, west, and east, with the Harper Dry Lake located approximately 1 mile to the east. However, the Project Site on the whole has been subject to near complete surface disturbance over time associated with past agricultural use, as well as grading and partial construction of the SEGS X facility and construction and operation of the existing SEGS VIII and IX Solar Thermal Power Plants. The SEGS X site itself was largely graded during initial construction of the former SEGS X facility and partial foundations were installed before construction was halted in the early 1990s. Although approximately 352 acres of the land 600-acres designated for the SEGS X facility were formerly under intensive agriculture (alfalfa cultivation) from the 1940s to the 1980s, some of the historically cultivated acreage has become revegetated by various species of saltbush (*Atriplex* spp.), with a smaller proportion of weedy annuals. Today, the Project Site is dominated by mostly native vegetation that has recolonized the site over the decades, with portions composed of disturbed habitat, bare ground, and development associated with the existing SEGS VIII and IX facilities and the abandoned SEGS X construction.

3.1.1 Climate

The survey area, located in the southwest portion of the Mojave Desert, has an arid climate characterized by cool winters and hot summers. This area of the Mojave has edaphic characteristics influence by elevation (approximately 2,000 feet above sea level) and by being situated in the rain shadow of the Tehachapi Mountains to the west and the San Gabriel and San Bernardino Mountains to the south. As a result of the low annual average precipitation (which normally occurs in episodes of high intensity) and the relatively poorly developed water holding capacity of desert soils, vegetation communities predominately consist of low-profile shrubby perennials and diminutive desert annuals. With an average annual temperature typically of approximately 65 °F, highs in the summer average approximately 97 °F and lows in the winter averaging approximately 38 °F, and low humidity throughout the year. Average annual precipitation for the Barstow, California, area is approximately 5.27 inches (U.S. Climate Data 2020).

3.1.2 Hydrology

The survey area is located within the Mojave Hydrologic Unit (Hydrologic Unit Code 18090207) and Lockhart Hydrologic Area. Located in the west Mojave Desert, the Lockhart Hydrologic Area encompasses approximately 700 square miles. Harper Valley is drained by numerous ephemeral streams towards Harper Dry Lake. Floodwater from Grass Valley occasionally flows into Harper Valley via Black Canyon on the eastern side of the valley.

Harper Dry Lake is an endorheic basin that once contained water and a natural marsh into the early 20th century but began to disappear once agricultural development began to deplete the groundwater that sustained its level. The lake eventually became dry in the late 1990s after the agricultural fields in the area were shut down and the lake was no longer fed by agricultural runoff. However, the SEGS VIII and IX facilities were required by the Bureau of Land Management (BLM) to deliver water to the lake pursuant to mitigation requirements. Up to 75 acre-feet of water per year is managed by the BLM and transferred to the lake. When the SEGS VIII and IX power plants are decommissioned, the conditions of operation previously imposed by the CEC will no longer apply.

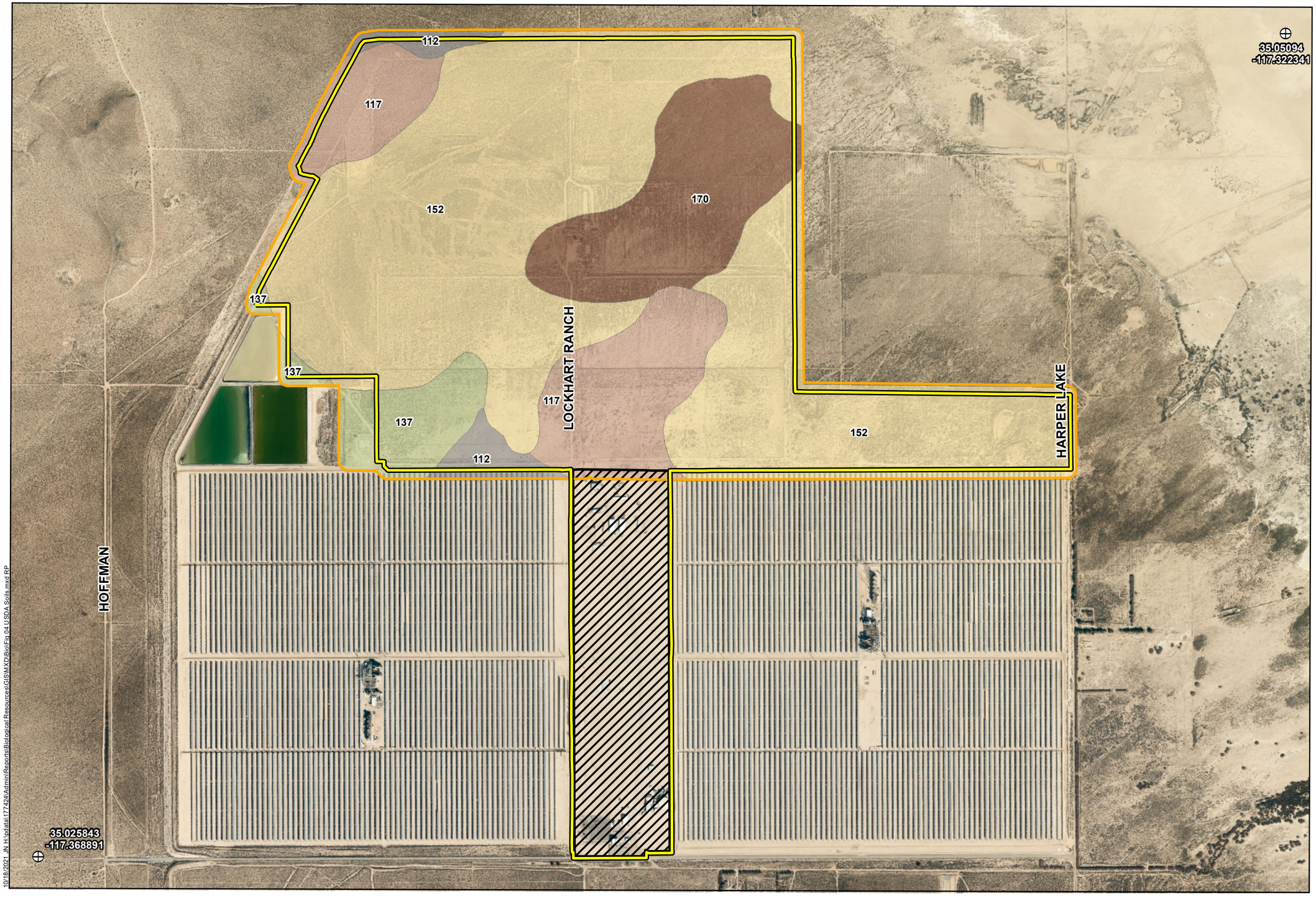
3.2 TOPOGRAPHY AND SOILS

The survey area is situated in the southwestern region of the Mojave Desert. The region is known as the "High Desert" due to its approximate elevation of 2,800 feet above mean sea level (amsl). Much of the survey area is relatively flat, with surface elevations varying between approximately 2,070 feet amsl in the southwest corner to approximately 2,030 feet amsl in the northeast corner. In addition, a small topographic depression is located within the southeastern portion of the survey area.

Soils within the survey area and in adjoining areas were reviewed prior to the field survey using the Web Soil Survey (USDA 2021a). Mapped soils within the survey area include the following (refer to Figure 4, *USDA Soils*):

- Cajon sand, 0 to 2 percent slopes (Map Unit Symbol: 112)
- Cajon loamy sand, loamy substratum, 0 to 2 percent slopes (117)
- Kimberlina loamy fine sand, cool, 0 to 2 percent slopes (137)
- Norob-Halloran complex, 0 to 5 percent slopes (152)
- Victorville Variant Sand (170)

Michael Baker then reviewed the National Hydric Soils List (USDA 2021b) to identify soils mapped within the survey area that are considered to be hydric. According to the soils list, Cajon sand, 0 to 2 percent slopes (112); Cajon loamy sand, loamy substratum, 0 to 2 percent slopes (117); Norob-Halloran complex, 0 to 5 percent slopes (152); and Victorville Variant Sand (170) are considered hydric.



Legend

- Project Site
- Survey Area (100-foot Buffer)
- Shared Facilities Area
- 117 — Cajon Loamy Sand, Loamy Substratum, 0 to 2 percent slopes
- 112 — Cajon Sand, 0 to 2 percent slopes
- 137 — Kimberlina Loamy Fine Sand, Cool, 0 to 2 percent slopes
- 152 — Norob-Halloran Complex, 0 to 5 percent slopes
- 170 — Victorville Variant Sand
- Reference Point

0 525 1,050 Feet

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Source: Esri, 2020, USDA, 2019

Michael Baker INTERNATIONAL

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USDA Soils

Figure 4

Soil textures identified within the survey area were generally consistent with those mapped by the Web Soil Survey. Although hydric soils are present according to the USDA soils report, no hydrophytic vegetation was present within the survey area.

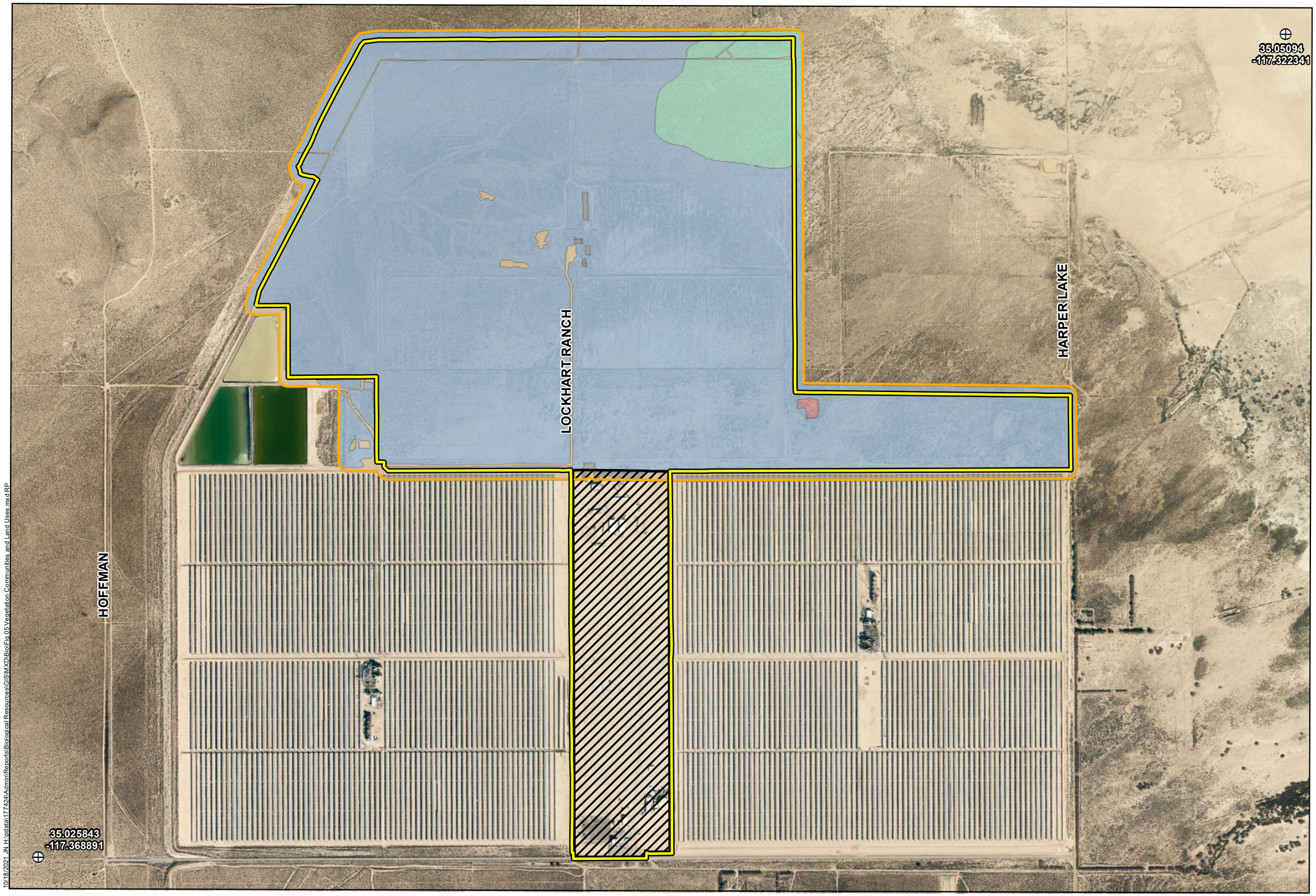
3.3 VEGETATION COMMUNITIES AND OTHER LAND USES

Four (4) terrestrial vegetation communities were identified within the survey area during the field survey: allscale scrub (*Atriplex polycarpa* Shrubland Alliance), spinescale scrub (*Atriplex spinifera* Shrubland Alliance), disturbed allscale scrub, and tamarisk thickets (*Tamarix* spp. Semi-Natural Alliance). Although not located on BLM lands and therefore not subject to any BLM-related regulations or requirements, the dominance of saltbush vegetation in the survey area is consistent with the surrounding region, which is recognized for its "unusual plant assemblage" due to a high concentration of similar plants within a limited distribution; in this case, the survey area is within the Western Mojave Desert/Desert Saltbush Assemblage (BLM 2019). In addition, three non-vegetative (3) land cover types identified as developed, bare ground, and open water were observed within the survey area. Vegetation communities occurring within the survey area were mapped on an aerial photograph and classified in accordance with the vegetation descriptions provided in the MCV, but were also compared against the community descriptions provided by Holland (1986), which is still used by the CNDDB to list special-status vegetation communities. A complete list of plant species observed during the field surveys is provided in Appendix B. A map that illustrates the extent of the terrestrial vegetation communities and other land uses observed within the survey area is presented as Figure 5, *Vegetation Communities and Land Uses*. Table 1, below, provides the acreages of each vegetation community/land use within the survey area, followed by each discussed in detail.

Table 1. Vegetation Communities and Land Uses within the Survey Area

Vegetation Communities and Land Uses	Acreage Total*
	TOTAL
Allscale Scrub	633.77
Spinescale Scrub	47.48
Tamarisk Thickets	0.89
Bare Ground	20.00
Open Water	0.13
Developed	11.12
ACREAGE	**713.39**

*This acreage and this table do not include the Shared Facilities Area, which was previously analyzed for resources and impacts and permitted as part of the Lockhart Solar I Facility and the existing SEGS VIII and IX facilities (Michael Baker International 2018).



10/18/2021 JN: H:\pdata\177424\Admin\Reports\Biological Resources\GIS\MXD\BioFig 05 Vegetation Communities and Land Uses mxd RP

Source: Esri, 2020

LOCKHART SOLAR PV II PROJECT
BIOLOGICAL RESOURCES REPORT

Vegetation Communities and Land Uses

Figure 5

Allscale Scrub

Approximately 633.77 acres of allscale scrub (*Atriplex polycarpa* Shrubland Alliance) are located within the survey area. The survey area is almost entirely composed of allscale scrub with little change in plant species throughout. The majority of this vegetation community is dominated by allscale saltbush, with red stemmed filaree (*Erodium cicutarium*), winged comb seed (*Pectocarya penicillata*), western tansy mustard (*Descurainia pinnata*), and California goldfields (*Lasthenia californica*) interspersed between saltbush shrubs. Note that a large portion of the allscale scrub within the survey area was either previously farmed and/or significantly disturbed during partial construction of the SEGS X facility.

Spinescale Scrub

Approximately 47.48 acres of spinescale scrub (*Atriplex spinifera* Shrubland Alliance) are located within the survey area. The spinescale scrub is limited to the northeast portion of the survey area. This vegetation community has a similar herbaceous understory to the allscale scrub within the survey area but is dominated by spinescale saltbush rather than allscale saltbush. According to the CNDDB and the *California Natural Community List* dated September 9, 2020 (CDFW 2020), spinescale scrub is considered a Sensitive Natural Community by CDFW. Note that the spinescale scrub was not previously farmed and was likely partly disturbed during partial construction of the SEGS X facility.

Tamarisk Thickets

Approximately 0.89 acre of tamarisk thickets (*Tamarix* spp. Semi-Natural Alliance) are located within the survey area. Tamarisk thickets within the survey area include a small area within and around the topographic depression located within the southeastern portion of the Project Site. This vegetation community is dominated by tamarisk (*Tamarix ramosissima*). Note that the tamarisk thickets existed during partial construction of the SEGS X facility.

Bare Ground

Approximately 20.00 acres of bare ground are located within the survey area. This includes areas primarily used as unpaved dirt maintenance roads throughout the survey area.

Open Water

Approximately 0.13 acre of open water are located within the survey area. All open water mapped within the survey area exclusively includes the processed water evaporation ponds located at the southwest corner of the survey area.

Developed

Approximately 11.12 acres of developed land are located within the survey area. Developed portions of the survey area include a small portion of the SEGS VIII and IX solar fields along with

infrastructure and facilities associated with said solar fields. Additional developed portions include several previously installed SEGS X concrete structures and foundations within the center of the survey area. Note that the SEGS X area was previously farmed and the area completely graded during partial construction of the SEGS X facility.

3.4 GENERAL WILDLIFE OBSERVATIONS

The survey area is dominated by native vegetation and friable soils necessary to support various wildlife species. However, wildlife diversity during the field surveys was generally low, with few species seen across all efforts due to the low diversity of the plant assemblage. The most commonly observed species within the survey area was saltbush Bell's sparrow (*Artemisiospiza belli canescens*). Otherwise, the most abundant species included common raven (*Corvus corax*), white-crowned sparrow (*Zonotrichia leucophrys*), and California horned lark (*Eremophila alpestris actia*) in the survey area, and cinnamon teal (*Spatula cyanoptera*), green-winged teal (*Anas crecca*), and least sandpiper (*Calidris minutilla*) in the evaporation ponds in the southwest corner of the survey area. In addition, several nest mounds of harvester ant (*Pogonomyrmex* sp.) were observed throughout the survey area. Refer to Appendix B for a complete list of wildlife species observed during the field survey.

3.5 REGULATORY SETTING

3.5.1 Federal Regulations

National Environmental Policy Act

The National Environmental Policy Act (NEPA) directs a "systematic, interdisciplinary approach" to planning and decision making and requires environmental statements for "major Federal actions significantly affecting the quality of the human environment". Implementing regulations by the Council of Environmental Quality (40 Code of Federal Regulations [CFR], Parts 1500–1508) require Federal agencies to identify and assess reasonable alternatives to proposed actions that will restore and enhance the quality of the human environment and avoid or minimize adverse environmental impacts.

Federal Endangered Species Act of 1973

As defined within the FESA of 1973, an endangered species is any animal or plant listed by regulation as being in danger of extinction throughout all or a significant portion of its geographical range. A threatened species is any animal or plant that is likely to become endangered within the foreseeable future throughout all or a significant portion of its geographical range. Without a special permit, Federal law prohibits the "take" of any individuals or habitat of Federally-listed species. Under Section 9 of the FESA, take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." The term "harm" has been clarified to include "any act which actually kills or injures fish or wildlife, and emphasizes

that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife." Enforcement of FESA is administered by the USFWS.

Under the definition used by the FESA, "Critical Habitat" refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species' conservation and if the occupied areas are inadequate to ensure the species' recovery. If a project may result in take or adverse modification to a species' designated Critical Habitat and the project has a Federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a Federal nexus may include projects that occur on Federal lands, require Federal permits (e.g., Clean Water Act Section 404 permit), or receive any Federal oversight or funding. If there is a Federal nexus, then the Federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the FESA.

Whenever Federal agencies authorize, fund, or carry out actions that may adversely modify or destroy Critical Habitat, they must consult with USFWS under Section 7 of the FESA. The designation of Critical Habitat does not affect private landowners, unless a project they are proposing uses Federal funds, or requires Federal authorization or permits (i.e., funding from the Federal Highway Administration or a permit from the U.S. Army Corps of Engineers).

Migratory Bird Treaty Act

Pursuant to the MBTA (16 U.S. Government Code [USC] 703) of 1918, as amended in 1972, Federal law prohibits the taking of migratory birds or their nests or eggs (16 USC 703; 50 CFR 10, 21). The statute states:

"Unless and except as permitted by regulations made as hereinafter provided in this subchapter, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill...any migratory bird, any part, nest, or egg of any such bird...included in the terms of the [Migratory Bird] conventions…"

The Act covers the taking of any nests or eggs of migratory birds, except as allowed by permit pursuant to 50 CFR, Part 21. Disturbances causing nest abandonment and/or loss of reproductive effort (i.e., killing or abandonment of eggs or young) may also be considered a "take." This regulation seeks to protect migratory birds and active nests.

In 1972, the MBTA was amended to include protection for migratory birds of prey (e.g., raptors). Six families of raptors occurring in North America were included in the amendment: Accipitridae

(kites, hawks, and eagles); Cathartidae (New World vultures); Falconidae (falcons and caracaras); Pandionidae (ospreys); Strigidae (typical owls); and Tytonidae (barn owls). The provisions of the 1972 amendment to the MBTA protects all species and subspecies of the families listed above. The MBTA protects over 800 species including geese, ducks, shorebirds, raptors, songbirds and many relatively common species.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 protects bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of these species and establishes civil penalties for violation of this act. Take of bald and golden eagles includes to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." To disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior. (Federal Register, volume 72, page 31132; 50 CFR 22.3).

Executive Order 13112 – Invasive Species

On February 3, 1999, President William J. Clinton signed Executive Order 13112 requiring Federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued August 10, 1999 directs the use of the State's invasive species list, maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project. Under the Executive Order, Federal agencies cannot authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered.

Desert Renewable Energy Conservation Plan

In response to Executive Order S-14-08, which established a target of obtaining 33 percent of the state's electricity from renewable resources by 2020, the CEC, CDFW, BLM, and USFWS have developed the Desert Renewable Energy Conservation Plan (DRECP). The plan area encompasses the Mojave and Colorado Desert regions in California, including all or a portion of the following counties: Kern, Los Angeles, San Bernardino, Inyo, Riverside, Imperial, and San Diego.

The DRECP is a joint State and Federal Natural Community Conservation Plan and part of one or more Habitat Conservation Plans that are intended to provide for effective protection and conservation of desert ecosystems while allowing for the appropriate development of renewable energy projects. The plan is anticipated to provide long-term endangered species permit assurances to renewable energy developers and provide a process for conservation funding to implement the DRECP. It would also serve as the basis for one or more habitat conservation plans under the FESA.

In 2016, the BLM issued a Record of Decision, approving a LUPA that represents the conclusion of Phase I of the DRECP, which identifies priority areas for renewable energy development while setting aside millions of acres for conservation and outdoor recreation. The BLM plan complements the non-federal land component of the DRECP (Phase II), which is ongoing, led by the CEC.

3.5.2 State Regulations

California Environmental Quality Act

CEQA provides for the protection of the environment within the State of California by establishing State policy to prevent significant, avoidable damage to the environment through the use of alternatives or mitigation measures for projects. It applies to actions directly undertaken, financed, or permitted by State lead agencies. If a project is determined to be subject to CEQA, the lead agency will be required to conduct an Initial Study (IS); if the IS determines that the project may have significant impacts on the environment, the lead agency will subsequently be required to write an Environmental Impact Report (EIR). A finding of non-significant effects will require either a Negative Declaration or a Mitigated Negative Declaration instead of an EIR. Section 15380 of the CEQA Guidelines independently defines "endangered" species as those whose survival and reproduction in the wild are in immediate jeopardy, while "rare" species are defined as those who are in such low numbers that they could become endangered if their environment worsens.

California Endangered Species Act

In addition to Federal laws, the State of California has its own CESA, enforced by the CDFW. The CESA program maintains a separate listing of species beyond the FESA, although the provisions of each act are similar.

State-listed threatened and endangered species are protected under provisions of the CESA. Activities that may result in "take" of individuals (defined in CESA as; "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") are regulated by CDFW. Habitat degradation or modification is not included in the definition of "take" under CESA. Nonetheless, CDFW has interpreted "take" to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are protected against take, as defined above, in the absence of incidental take permits.

The CDFW has also produced a species of special concern list to serve as a species watch list. Species on this list are either of limited distribution or their habitats have been reduced substantially, such that a threat to their populations may be imminent. Species of special concern may receive special attention during environmental review, but they do not have formal statutory protection. At the Federal level, USFWS also uses the label species of concern, as an informal term that refers to species which might be in need of concentrated conservation actions.

As the Species of Concern designated by USFWS do not receive formal legal protection, the use of the term does not necessarily ensure that the species will be proposed for listing as a threatened or endangered species.

California Fish and Game Code

The CDFW administers the CFGC. There are particular sections of the CFGC that are applicable to natural resource management.

Sections 3503, 3503.5, 3511, and 3513

Section 3503 makes it unlawful to destroy any birds' nest or any birds' eggs that are protected under the MBTA. Further, any birds in the orders Falconiformes or Strigiformes (Birds of Prey), such as hawks, eagles, and owls, are protected under Section 3503.5 which makes it unlawful to take, possess, or destroy their nest or eggs. Coordination with CDFW may be required prior to the removal of any bird of prey nest that may occur on a project site. Section 3511 lists fully protected bird species, where the CDFW is unable to authorize the issuance of permits or licenses to take these species. Pertinent species in the region that are State fully protected include golden eagle and white-tailed kite (*Elanus leucurus*). The golden eagle was found to have a low potential to occur on-site; therefore, no further analysis is included. None of the other species listed above were documented as observed at the Project Site. In addition, Section 3513 makes it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

Section 4150

Section 4150 of the CFGC protects nongame mammals, defined as any naturally-occurring mammal in California that is not a game mammal, fully protected mammal, or fur-bearing mammal. Nongame mammals, which includes bats and bat roosts, may not be taken or possessed except as provided by the CFGC or in accordance with applicable regulations.

Sections 1900-1913

Sections 1900–1913 of the CFGC, the Native Plant Protection Act, were developed to preserve, protect, and enhance Rare and Endangered plants in the State of California. The act requires all State agencies to use their authority to carry out programs to conserve Endangered and Rare native plants. Provisions of the Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification of the CDFW at least ten days in advance of any change in land use which would adversely impact listed plants. This allows the CDFW to salvage listed plant species that would otherwise be destroyed.

California Desert Native Plants Act

Division 23 of the California Food and Agriculture Code consists of the CDNPA. The CDNPA was developed to protect certain species of California desert native plants from unlawful harvesting on both public and privately-owned lands. The CDNPA only applies within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego Counties. Within these counties, the CDNPA prohibits the harvest, transport, sale, or possession of specific native desert plants unless a person has a valid permit or wood receipt, and the required tags and seals. The appropriate permits, tags and seals must be obtained from the sheriff or commissioner of the county where collecting will occur, and the county will charge a fee.

3.5.3 Local Policies and Ordinances

San Bernardino County Policy Plan

The County adopted the *County Policy Plan* (Policy Plan) in October 2020. The Policy Plan provides an update of the County's General Plan addressing physical, social and economic issues facing the unincorporated portions of the County. The Policy Plan also provides an expansion of the County's General Plan to address supportive service for adults and children, healthcare service, public safety, and other regional county services provided to both incorporated and unincorporated areas.

Relevant goals and policies of the Policy Plan are as follows:

- *Natural Resources Element*
    - Policy NR-5.1: Landscape-scale habitat conservation planning and coordinate with existing or proposed habitat conservation and natural resource management plans

for private and public lands to increase certainty for both the conservation of species, habitats, wildlife corridors, and other important biological resources and functions; and for land development and infrastructure permitting should be participated in.

- Policy NR-5.2: Coordination with public and nongovernmental agencies shall be utilized to seek funding and other resources to protect, restore, and maintain open space, habitat, and wildlife corridors for threatened, endangered, and other sensitive species s.
- Policy NR-5.3: Conservation actions that demonstrate multiple resource preservation benefits, such as biology, climate change adaptation and resiliency, hydrology, cultural, scenic, and community character should be prioritized.
- Policy NR-5.7: There shall be compliance with state and federal regulations regarding protected species of animals and vegetation through the development review, entitlement, and environmental clearance processes.
- Policy NR 5.8: The use of non-invasive plant species with new development is required and the management of existing invasive plant species that degrade ecological function is encouraged.

- *Renewable Energy and Conservation Element* Renewable Energy (RE) Goal 4: The County will establish a new era of sustainable energy production and consumption in the context of sound resource conservation and renewable energy development practices that reduce greenhouse gases and dependency on fossil fuels.
  - RE Objective 4.1: The County will continue its efforts to meet or exceed State Greenhouse Gas reduction goals, by encouraging renewable energy development that will be compatible with the natural environment and the integrity of unincorporated communities.
    - RE Policy 4.1: Apply standards to the design, siting, and operation of all renewable energy facilities that protect the environment, including sensitive biological resources, air quality, water supply and quality, cultural, archaeological, paleontological and scenic resources.
      - RE 4.1.2: RE development applications shall be subject to thorough environmental review, including consideration of water consumption, before being permitted.
    - RE Policy 4.7: RE project site selection and site design shall be guided by the following priorities relative to habitat conservation and mitigation:
      - Avoid sensitive habitat, including wildlife corridors, during site selection and project design.
      - Where necessary and feasible, conduct mitigation on-site.
      - When on-site habitat mitigation is not possible or adequate, establish mitigation off-site in an area designated for habitat conservation.

- RE Policy 4.8: Encourage mitigation for RE generation facility projects to locate habitat conservation offsets on public lands where suitable habitat is available.
    - RE 4.8.1: Collaborate with appropriate state and federal agencies to facilitate mitigation/habitat conservation activities on public lands.
- RE Policy 4.9: Encourage RE facility developers to design projects in ways that provide sanctuary (i.e., a safe place to nest, breed and/or feed) for native bees, butterflies and birds where feasible and appropriate, according to expert recommendations.

San Bernardino County Development Code

Development Code 84.29.040 focuses on solar energy development standards and includes regulations and guidelines for the notification and permitting processes pertaining to solar facilities, and is therefore applicable to the Project Site since it is a proposed solar facility.

Development Code 84.29.070 focuses on decommissioning requirements for wind and solar energy projects. This section of the code includes regulations and guidelines for site closure activities to meet federal, state, and local requirements for the rehabilitation and revegetation of wind and solar energy project sites after decommissioning.

Development Code Section 88.01.060 is a subset of the Plant Protection and Management Code, which focuses on the conservation of specified desert plant species and is therefore applicable to the Project Site since the Project Site is within the Desert Planning Region.

Division 2, Land Use Zoning Districts and Allowed Land Uses

Chapter 82.11, Biotic Resources Overlay, implements Policy Plan policies for the protection and conservation of beneficial unique, rare, threatened, or endangered plants and animal resources and their habitats in certain unincorporated areas identified by a federal, state, or county agency. For new developments or increased development of existing land uses by more than 25 percent, the land use application must include a biotic resources report evaluating all biotic resources on and adjacent to the site which could be impacted and identifying mitigation measures for significant impacts.

Division 8, Resource Management and Conservation

Chapter 88.01, Plant Protection and Management, includes regulations and guidelines for the management of biotic resources in unincorporated areas under private or public ownership, including conservation of native plant heritage; regulation of native plant and tree removal activities; protection and maintenance of local watersheds; preservation of habitats for rare,

endangered, or threatened plants; and protection of wildlife with limited or specialized habitats. Chapter 88.01 also requires a permit prior to removal of regulated trees and plants.

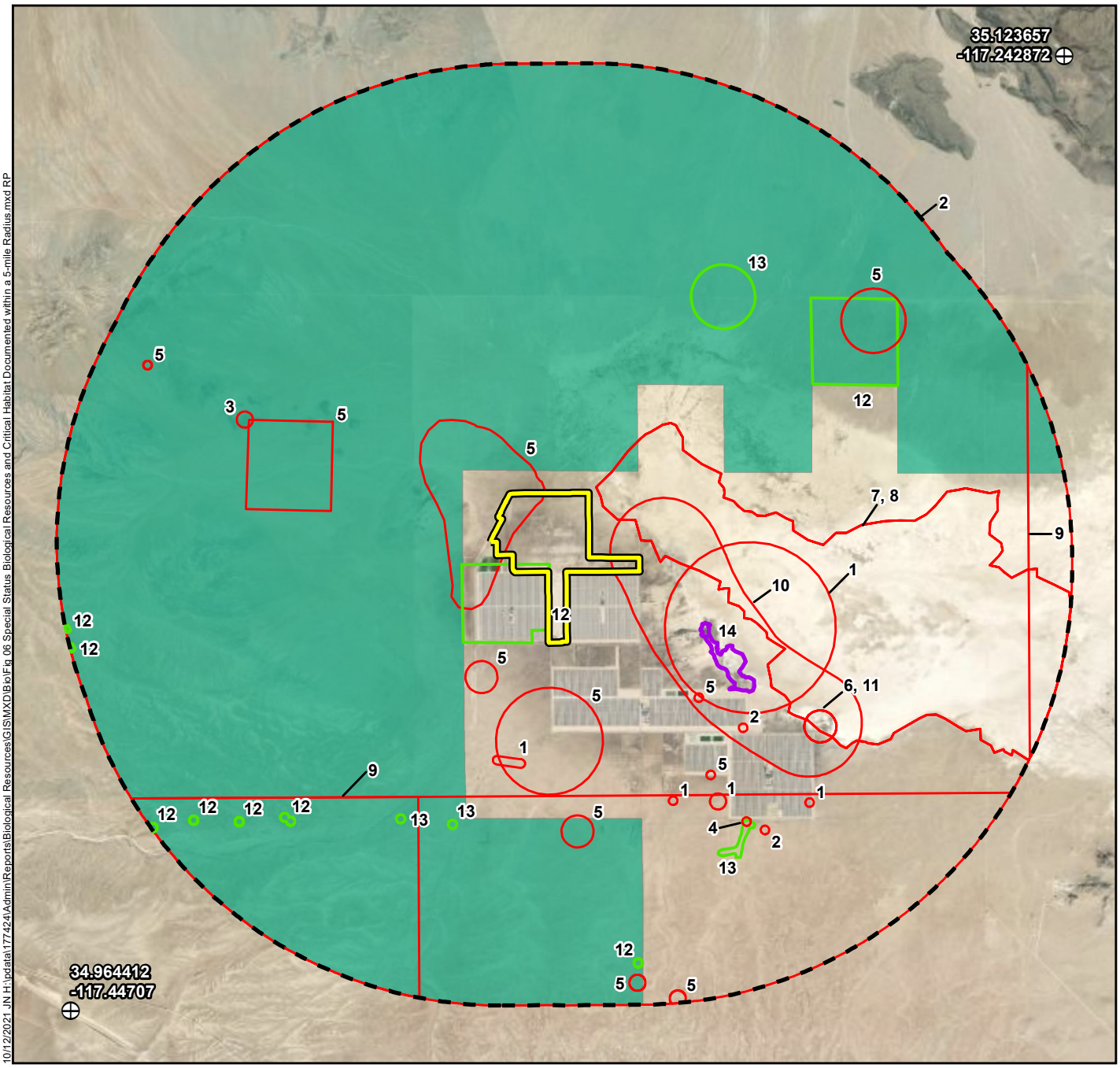
Section 4 Special-Status Biological Resources

The following discusses the potential for special-status plant and wildlife species and special-status vegetation communities to occur within the survey area. The CNDDB and CNPS Online Inventory were queried for reported locations of special-status plant and wildlife species as well as special-status natural vegetation communities within the 9-quad search radius. All CNDDB occurrences, documentation of special-status species and vegetation communities, and USFWS-designated Critical Habitat within a 5-mile radius of the Project Site are shown in Figure 6, *Special-Status Biological Resources and Critical Habitat Documented Within a 5-mile Radius*. An evaluation of the potential for each species identified in the database records search to occur within the survey area is presented in Appendix C.

4.1 SPECIAL-STATUS SPECIES

The field survey was conducted to assess the conditions of the habitat(s) within the boundaries of the survey area to determine if the existing vegetation communities, at the time of the field survey, have the potential to provide suitable habitat(s) for special-status plant and wildlife species. Additionally, the potential for special-status species to occur within the survey area was determined based on the reported locations in the CNDDB and CNPS Online Inventory and the following:

- **Present**: the species was observed or detected within the survey area during the field survey.
- **High**: Recent occurrence records indicate that the species has been known to occur on or within 1 mile of the survey area and the survey area is within the normal expected range of this species. Intact, suitable habitat preferred by this species occurs within the survey area and/or there is viable landscape connectivity to a local known extant population(s) or sighting(s).
- **Moderate**: Recent occurrence records indicate that the species has been known to occur within 1 mile of the survey area and the survey area is within the normal expected range of this species. There is suitable habitat within the survey area but the site is ecologically isolated from any local known extant populations or sightings.
- **Low**: Recent occurrence records indicate that the species has been known to occur within 5 miles of the survey area, but the survey area is outside of the normal expected range of the species and/or there is poor quality or marginal habitat within the survey area.
- **Not Expected**: There are no occurrence records of the species occurring within 5 miles of the survey area, there is no suitable habitat within the survey area, and/or the survey area is outside of the normal expected range for the species.



Legend

- Project Site
- 5-mile Radius Buffer

CNDDB Special-Status Resources

- Animal
- Plant
- Vegetation Community

Critical Habitat

- Desert Tortoise (*Gopherus agassizii*)

⊕ Reference Point

ID	Animal	ID	Animal	ID	Plant	ID	Plant Community
1	burrowing owl	7	Mojave fringe-toed lizard	12	Barstow woolly sunflower	14	Transmontane Alkali Marsh
2	desert tortoise	8	mountain plover	13	desert cymopterus		
3	golden eagle	9	prairie falcon				
4	loggerhead shrike	10	western snowy plover				
5	Mohave ground squirrel	11	Yuma Ridgway's rail				
6	Mohave river vole						

LOCKHART SOLAR PV II PROJECT
BIOLOGICAL RESOURCES REPORT

Michael Baker INTERNATIONAL

0 0.875 1.75 Miles

Source: Esri, 2018, USFWS, 2019

Special-Status Biological Resources and Critical Habitat Documented Within a 5-mile Radius

Figure 6

- **Absent**: The species has been determined to conclusively be absent from the survey area.

The literature search identified twelve (12) special-status plant species and twenty-three (23) special-status wildlife species as having been reported to occur within the 9-quad search radius. Special-status plant and wildlife species were evaluated for their potential to occur within the survey area based on habitat requirements, availability and quality of suitable habitat, and known distributions. Special-status biological resources identified during the literature review as having the potential to occur within the 9-quad search radius are presented in Appendix C.

4.1.1 Special-Status Plant Species

No special-status plant species were observed during the initial field survey, but rare plant surveys conducted in March and April 2021 by EREMICO determined that approximately 4,700 dried Mojave spineflower (CRPR 4.2) plants were present within the survey area (Refer to Appendix D for additional information). Based on the results of the field survey and the rare plant surveys and a review of specific habitat preferences, occurrence records, known distributions, and elevation ranges, it was determined that the survey area has a low potential to support Barstow woolly sunflower (CRPR 1B.2), desert cymopterus (CRPR 1B.2), crowned muilla (CRPR 4.2), and Beaver Dam breadroot (CRPR 1B.2). As previously stated, the only special-status plant species known to occur within the survey area is Mojave spineflower. All remaining special-status plant species identified by the CNDDB and CNPS databases are not expected to occur within the survey area.

4.1.2 Special-Status Wildlife Species

Six (6) special-status wildlife species were observed during the field surveys: sharp-shinned hawk (*Accipiter striatus*; CDFW Watch List [WL]), northern harrier (*Circus hudsonius*; CDFW Species of Special Concern [SSC]), California horned lark (WL), loggerhead shrike (*Lanius ludovicianus*; SSC), California gull (*Larus californicus*; WL), and double-crested cormorant (*Phalacrocoracidae auritus*; WL). Based on current site conditions and reviews of specific habitat preferences, occurrence records, known distributions, and elevation ranges, it was determined that the survey area has a moderate potential to support long-eared owl (*Asio otus*; SSC). Additionally, the golden eagle (*Aquila chrysaetos*; CDFW Fully Protected species), burrowing owl (*Athene cunicularia*; SSC), prairie falcon (*Falco mexicanus*; WL), yellow warbler (*Setophaga petechia*; SSC), desert kit fox (*Vulpes macrotis arsipus*; a furbearing mammal), and American badger (*Taxidea taxus*; SSC) were found to have a low potential to occur on-site. All remaining special-status wildlife species identified by the CNDDB and IPaC, including desert tortoise which is described in detail below due to its regional and conservation significance, are not expected to occur within the survey area.

Although the records search did not identify any special-status bats occurring within the 9-quad search radius, a single unidentified vesper bat (Family Vespertilionidae) was found roosting in a

shed in the survey area in July 2021. All bat species and their roosts are protected by the CDFW and the CFGC as nongame mammals under CFGC Section 4150. Bats are not discussed further below but because a bat was found roosting in the survey area and there are several sheds and structures within the overall Project Site, the Project will require bat avoidance and minimization as described in Section 5.

4.1.2.1 Desert Tortoise

The desert tortoise is currently designated as a State and federally Threatened species. The Mojave population of the desert tortoise inhabits areas north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, and southwestern Utah, and in the Sonoran Desert in California. Throughout the majority of the Mojave Desert, desert tortoises occur most commonly on gentle sloping soils characterized by an even mix of sand and gravel and sparsely vegetated low-growing vegetation where there is abundant inter-shrub space (USFWS 2008). The typical habitat for this species is creosote bush scrub below approximately 5,500 feet in elevation (USFWS 2008, USFWS 2010). Wildflowers, grasses, and in some cases, cacti make up the bulk of their diet. Some of the more common forbs consumed by desert tortoise include desert dandelion (*Malacothrix glabrata*), primrose (*Camissonia* spp. and *Oenothera* spp.), desert plantain (*Plantago ovata*), milkvetches (*Astragalus* spp.), gilia (*Gilia* spp.), desert marigold (*Baileya multiradiata*), Mojave lupine (*Lupinus odoratus*), phacelia (*Phacelia* spp.), desert wishbone-bush (*Mirabilis laevis*), lotus (*Lotus* spp.), forget-me-nots (*Cryptantha* spp.), goldfields (*Lasthenia californica*), California coreopsis (*Leptosyne californica*), white-margin sandmat (*Euphorbia albomarginata*), and the introduced red stemmed filaree. The desert tortoise spends 95 percent of its life underground and will opportunistically utilize burrows of various lengths, deep caves, rock and caliche crevices, or overhangs for cover. Therefore, a moderately friable soil is required to allow for burrow construction and ensure that burrows do not collapse.

No desert tortoises or sign (i.e., burrows, scat, carcasses) were observed within the survey area during any of the field surveys. The survey area contains suitable habitat for this species, including allscale scrub and spinescale scrub. According to the CNDDB, there are thirteen (13) occurrence records for desert tortoise within the 9-quad search radius of the Project Site with occurrence dates ranging from 1977 to 2007. The entire general region that the Project is in is considered to be occupied by desert tortoise, with anywhere from 20 to over 250 individuals estimated per square mile in 1977, although population density has been declining since then due to increased human encroachment and development (CDFW 2021b). The nearest specific tortoise locations currently available in the CNDDB and the only ones within five miles of the Project Site are two single tortoises found in May 2006 approximately 2.2 and 3.4 miles southeast of the survey area. Multiple live tortoises were historically observed near the survey area; twenty-two (22) tortoises were observed by a Luz Construction Management engineer after a brief rain in mid-May 1989 while walking along the transmission line route from the SEGS VIII facility to the Kramer Junction substation (CEC 1990).

Focused, protocol-level surveys were conducted in May 2020, March and July 2021 (Refer to Appendices E and F, respectively) by qualified Michael Baker biologists in accordance with the survey guidelines and protocols provided in the protocol *Preparing for Any Action That May Occur Within the Range of the Mojave Desert Tortoise (Gopherus agassizii)*, last updated in 2019 (USFWS 2019). The specific protocol used for the 2020 survey was determined by Michael Baker senior biologists Ryan Winkleman and Tom Millington with USFWS senior biologist Mr. Scott Hoffmann and applied in a similar manner to the 2021 survey. Michael Baker biologists Ryan Winkleman, Tom Millington, Stephen Anderson, and Ashley Spencer conducted focused presence/absence tortoise surveys following the "quantitative" protocol within the entire Project Site identified at the time on May 11, 12, 14, and 18, 2020 (Refer to Appendix E). Following an expansion of the Project Site in 2021, Michael Baker biologists Ryan Winkleman, Tom Millington, Ashley Spencer and Tim Tidwell conducted additional focused presence/absence tortoise surveys in the additional areas on March 11, 2021 and July 14, 2021 (Refer to Appendix F).

All 2020 and 2021 survey efforts were negative, with no desert tortoises observed within the combined survey area and no definitive tortoise sign identified. Fifteen (15) burrows potentially fitting desert tortoise were found and mapped within the survey area, including twelve (12) within the fenced portion of the survey area and three (3) within the unfenced portion of the survey area, but all were classified as Class 5, defined by the USFWS as "deteriorated condition; this includes collapsed burrows; possibly desert tortoise." In all instances, there was no desert tortoise sign found around these burrows and no indication that the burrows belonged to tortoises at any time. It is more likely instead that the burrows belonged to local small mammals, particularly because several of them had additional burrows in the immediate vicinity indicating a presumed "network" of burrows characteristic of certain mammal species.

Michael Baker biologists contacted USFWS senior biologist Scott Hoffmann on May 5, 2020 to confirm the site- specific survey methodology for the surveys. Based on guidance from Mr. Hoffmann, it was determined that based on the regional population status and historic data for the project vicinity, focused surveys would only be required within the Project Site. According to Mr. Hoffmann, the species has undergone severe declines in recent decades in the general project vicinity, and he stated that he did not expect Michael Baker to find any tortoises or sign. Based on the results of the focused surveys and because the fence was promptly repaired and reinforced, it was determined by Michael Baker biologists that desert tortoise is absent from the entire survey area as of July 2021 and is unlikely to occur in the future. Refer to Appendices E and F for additional information.

4.2 SPECIAL-STATUS VEGETATION COMMUNITIES

According to the CNDDB records search, one (1) special-status habitat/vegetation community has been documented within the 9-quad search radius, Transmontane Alkali Marsh. This community was not observed within the survey area. However, spinescale scrub (*Atriplex spinifera* Shrubland Alliance), a community classified as sensitivity level S3, was documented

within the survey area. On the list of California Sensitive Natural Communities, natural communities with ranks of S1-S3 are considered sensitive by CDFW (CDFW 2020). These communities need to be addressed in the CEQA review process. As such, any impacts to these sensitive natural communities may be considered significant under CEQA and require further mitigation to ensure compliance with the federal, State, and local regulations. These mitigation requirements are typically determined during the CEQA review and approval process.

4.3 NESTING BIRDS AND WILDLIFE MOVEMENT

The many shrubs located within the survey area provide nesting habitat for a limited number of ground-nesting bird species. Numerous nests of both saltbush Bell's sparrow and lesser nighthawk (*Chordeiles acutipennis*) were found during the focused desert tortoise surveys. The few individuals of tamarisk within the survey area provide minimal nesting habitat for tree-nesting species. In addition, a remnant stick nest was observed on top of the abandoned SEGS X concrete structure located at the center of the survey area. The 6-foot-tall chain link fence with associated tortoise exclusion fencing surrounding the Project Site prevents movement of larger wildlife through the Project Site.

4.4 CRITICAL HABITAT

No USFWS-designated critical habitats (proposed or final) have been mapped within the survey area. The survey area is located approximately 0.33 mile to the east at its closest point from the Superior-Cronese Unit and approximately 0.25 mile to the south of the Ord-Rodman Unit of desert tortoise Critical Habitat (refer to Figure 6).

4.5 JURISDICTIONAL AQUATIC FEATURES

Non-Wetland Features (Non-jurisdictional)

A flood control diversion feature, constructed as part of the existing SEGS VIII and IX facilities, was identified near the southwestern portion of the Project Site. This feature was constructed and designed to divert stormwater flows away from the SEGS VIII and IX facilities. The diversion was constructed within upland habitat areas and captures portions of the off-site run-on and redirects them north and away from existing development. Since the feature is a stormwater control diversion excavated or constructed wholly in the uplands or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off, it does not qualify as a WoUS pursuant to the Navigable Waters Protection Rule.[3] Furthermore, no evidence of an ordinary-high water mark (OHWM) or a bed and bank was identified in association with the feature. Therefore, this feature would not be considered jurisdictional by the Regional Water Quality Control Board or CDFW.

[3] United States Environmental Protection Agency, *Overview of the Navigable Waters Protection Rule Fact Sheet*, July 22, 2020. Accessed online at: https://www.epa.gov/wotus/navigable-waters-protection-rule-factsheets.

The remainder of the survey area was surveyed for the presence of aquatic features including ephemeral drainage features. Given that the Project is located in the arid to semi-arid desert region, the survey area was assessed more specifically for ephemeral features (watercourses that flow only during and shortly after precipitation events). No surface water and no ephemeral features were identified within the survey area during the 2020 or 2021 site reconnaissance surveys.

Wetland Features

Based on the results of the field delineation, no wetland features were noted within the survey area. During the March 11, 2021 site visit, one soil pit (SP1) was dug within a flood control diversion feature in the southwestern portion of the survey area due to the presence of hydrologic indicators consisting of surface soil cracks.

SP1 was dug to a depth of approximately 4 inches prior to encountering a compacted earth restrictive layer. SP1 consisted of a single layer and exhibited a sand texture and displayed a matrix color of 10YR 5/4 when moist. No redoximorphic features were observed and no dominant hydrophytic vegetation was present within the vicinity of SP1. Based on the results of the field delineation, it was determined that SP1 only met one (hydrology) of the three required parameters and thus did not qualify as a wetland.

Section 5 Conclusion and Recommendations

The following sections discuss the potential impacts to biological resources that may occur from implementation of the Project and suggest appropriate mitigation measures that would reduce those potential impacts to less than significant levels.

5.1 SPECIAL-STATUS PLANT SPECIES

Approximately 4,700 individual Mojave spineflower plants, a CRPR 4 (i.e., watch list) species, were found within the rare plant survey area during rare plant surveys conducted in March and April 2021. It is important to note that because the SEGS X site itself was largely graded during initial construction of the SEGS X facility before construction was halted in the early 1990s, these plants have regrown in this area and would be expected to regrow again after the Project is decommissioned. Based on the results of the field surveys and a review of specific habitat preferences, occurrence records, known distributions, and elevation ranges, it was determined that Mojave spineflower is present within the survey area and that the survey area has a low potential to support Barstow woolly sunflower, desert cymopterus, crowned muilla, and Beaver Dam breadroot. These four species were not found within the survey area. The 2021 rare plant surveys were conducted in drought conditions where the occurrence of annual plant species may have been negatively affected due to lack of rainfall. All remaining special-status plant species identified by the CNDDB and CNPS databases are not expected to occur within the survey area.

Impacts to special-status species with a CRPR of 1 or 2 would require disclosure under CEQA. Impacts to CRPR 3 and 4 species are not considered significant under CEQA and warrant no legal protection but may simply require CEQA disclosure.

5.1.1 Avoidance and Minimization Measures

The following avoidance and minimization measure is recommended to reduce potential impacts to special-status plant species:

BIO-1: Prior to construction, a qualified botanist shall conduct a pre-construction rare plant survey within the Project Site, particularly focusing on areas with suitable habitat to support special-status plant species. The survey shall be floristic in nature (i.e., identifying all plant species to the taxonomic level necessary to determine rarity), and shall be inclusive of, at a minimum, areas proposed for disturbance.

The results of the survey shall be documented in a letter report that will be submitted to San Bernardino County. If individual or populations of special-status plant species are found along the edges of areas that are proposed for disturbance, measures to avoid and minimize impacts to these plants, including but not limited to flagging and/or fencing, shall be recommended and implemented, as appropriate. Existing vegetation within the Project Site would be removed, but

mitigation for the loss of any special-status plant species within the Project Site shall be considered during the process of purchasing mitigation lands for Project impacts. The surveys and reporting shall follow 2018 CDFW and/or 2001 CNPS guidelines.

Although not expected, if State- and/or Federally-listed plant species are present and avoidance is infeasible, consultation with the requisite resource agency will be conducted and an Incidental Take Permit may be warranted prior to the commencement of Project activities. In the event that State or Federally-listed plant species are present and avoidance is infeasible, the County shall assess whether the loss of individual plants constitutes a "substantial adverse effect" on the species and if so, shall require mitigation for such impacts through the acquisition and protection of mitigation land commensurate with the impact. Acquisition of mitigation land is not required if equivalent mitigation will or has already been provided through an Incidental Take Permit.

5.2 SPECIAL-STATUS WILDLIFE SPECIES

Six (6) special-status wildlife species were observed during the survey: sharp-shinned hawk, northern harrier, California horned lark, loggerhead shrike, California gull, and double-crested cormorant. Based on current site conditions and reviews of specific habitat preferences, occurrence records, known distributions, and elevation ranges, it was determined that the survey area has a moderate potential to support long-eared owl. Additionally, the golden eagle, burrowing owl, prairie falcon, yellow warbler, desert kit fox, and American badger were found to have a low potential to occur on-site. All remaining special-status wildlife species identified by the CNDDB and IPaC are not expected to occur within the survey area.

There are several sheds and structures within the overall Project Site. Based on the presence of a bat in one of the sheds during a July 2021 survey, bats are assumed to be present and the Project will require bat avoidance and minimization to reduce potential impacts on roosting bats to less than significant.

Impacts to special-status species that are ranked as SSC or higher would need to be considered under CEQA, whereas impacts to WL species are generally not considered significant under CEQA.

5.2.1 Avoidance and Minimization Measures

The following avoidance and minimization measures are recommended to reduce potential impacts to special-status wildlife species:

Non-Listed Species

For this Project, focused survey efforts for loggerhead shrike, long-eared owl, golden eagle, prairie falcon, and yellow warbler are not recommended. Instead, the presence of these species can be determined with a nesting bird survey (refer to BIO-2 below). Focused surveys for burrowing owl, desert kit fox, and American badger, all of which were determined to have low potentials to occur within the survey area based on Michael Baker's observations and known records in the area, are not recommended, as 100 percent of the survey area was covered by Michael Baker biologists during focused desert tortoise survey efforts in 2020 and 2021 and no suitable burrowing owl, desert kit fox, or American badger burrows or sign were found within the survey area. Pre-construction burrowing owl surveys (refer to BIO-3 below) to ensure that owls, kit fox, and badger remain absent from the Project Site prior to the commencement of construction. A pre-construction bat survey and potential monitoring measures (refer to BIO-4 below) is recommended below for bat roost avoidance and impact minimization efforts.

BIO-2: If it is not feasible to avoid the nesting bird season (typically January through July for raptors and February through August for other avian species), a qualified biologist shall conduct a pre-construction nesting bird survey for avian species to determine the presence/absence, location, and status of any active nests on or adjacent to the Project Site. The extent of the survey buffer area surrounding the nest should be established by the qualified biologist to ensure that direct and indirect effects to nesting birds are avoided. To avoid the destruction of active nests and to protect the reproductive success of birds protected by the MBTA and the CFGC, the nesting bird survey shall occur no earlier than seven (7) days prior to the commencement of construction.

In the event that active nests are discovered, a suitable buffer (distance to be determined by the biologist) shall be established around such active nests, and no construction within the buffer allowed, until the biologist has determined that the nest(s) is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest).

BIO-3: Pre-construction burrow clearance surveys shall be conducted by a qualified biologist to ensure that burrowing owls, desert kit fox, or American badger remain absent from the Project Site and impacts to these animals do not occur. Two (2) pre-construction clearance surveys should be conducted 14-30 days and 24 hours prior to any vegetation removal or ground disturbing activities. Once surveys are completed, the qualified biologist shall prepare a final report documenting surveys and findings. If no occupied burrows are detected, Project construction activities may begin. If an occupied burrow is found within the Project Site during pre-construction clearance surveys, a burrowing owl, desert kit fox, or American badger-exclusion and mitigation plan shall be prepared and submitted to the

County, which may consult with CDFW for review, prior to initiating Project construction activities.

BIO-4: A qualified bat biologist shall survey all suitable structures and vegetation on the Project Site for bat roosts within 30 days prior to the start of Project construction activities. If bats roosts are found within the Project Site, the qualified bat biologist shall identify the bats to the species level and evaluate the colony to determine its size and significance. If structures on the Project Site house an active maternity colony of bats, construction activities shall not occur during the recognized bat breeding season (March 1 to October 1). Proposed work in areas with no suitable habitat shall not require a bat survey.

If Project activities must occur during non-daylight hours or during the bat breeding season (March 1 to October 1), a qualified bat biologist shall establish monitoring measures, including frequency and duration, based on species, individual behavior, and type of construction activities. Night lighting should be used only within the portion of the Project Site actively being worked on and should be focused directly on the work area. This measure would minimize visual disturbance and allow bats to continue to utilize the remainder of the area for foraging and night roosting. If bats are showing signs of distress, work activities shall be modified to prevent bats from abandoning their roost or altering their feeding behavior. The qualified biologist shall have the authority to halt work if there are any signs of distress or disturbance that may lead to roost abandonment. Work shall not resume until corrective measures have been taken or it is determined that continued activity would not adversely affect roost success.

Desert Tortoise

Previous mitigation requirements implemented for the previously approved but not fully constructed SEGS X Facility include the acquisition and transfer of 1,680 acres of mitigation lands to CDFW for the purpose of enhancement and management of suitable desert tortoise and Mohave ground squirrel habitat in perpetuity and to compensate for habitat that would be eliminated or subject to long-term disturbance as a result of construction of SEGS IX and X and any ancillary facilities. On December 7, 1990, the developer of SEGS X, the Luz Development and Finance Corporation (“Luz”), conveyed approximately 3,192.34 acres of land previously acquired from Santa Fe Pacific Properties to CDFG “for conservation purposes related to mitigation of adverse impacts identified as part of the Luz Project. The land is conveyed subject to such covenants and restrictions on transfer and use contained in the Habitat Mitigation and Acquisition Agreement and the Habitat Mitigation Plan by and between [Luz] and the Department of Fish and Game of the State of California (“CDFG”), dated May 23, 1988, which is intended to bind grantee, CDFG and all subsequent grantees.” As explained in a letter from CDFG dated March 23, 1993 documenting the status of acquisition of habitat mitigation for the SEGS projects,

the transfer of 1,680 of these acres (identified as coming from Santa Fe Pacific) "satisfies SEGS IX/X mitigation requirement." The subject lands are located within the County of San Bernardino and include Sections 1, 3, 5 and 11, Township 11 North, Range 6 West and Section 7, Township 11 North, Range 5 West, San Bernardino Base and Meridian. The habitat was dedicated to the purpose of supporting Mohave ground squirrel, desert tortoise, and other native wildlife and plants in perpetuity (CEC 1990). Therefore, as a result of this prior conveyance, any potential impacts on desert tortoise and Mojave ground squirrel has been previously mitigated through the prior SEGS X project that was never fully developed and potential impacts on these species is considered less than significant with the previously implemented mitigation and no additional mitigation for loss of habitat is required.

The Project may require grading for extension of the existing channel located outside the Project fence line along the western and northern boundary of the Project Site for the collection and routing of offsite run-on. If feasible, this channel may be constructed within the fence line to limit new disturbance associated with Project construction. Nonetheless, this habitat loss is not considered as a significant adverse impact to the species because disturbance would be temporary and upon completion of construction, the area would be revegetated and restored to preconstruction conditions.

The following avoidance and minimization measures related to desert tortoise are recommended for the Project, considering current site conditions and survey results:

BIO-5: Off-road travel shall be prohibited in all native habitats adjacent to the Project Site during construction and operation. Such areas shall be posted prior to initiation of construction. Parking areas for the construction crews shall be designated and clearly marked.

BIO-6: Speed limits on the Project Site shall be posted and will be limited to 15 miles per hour.

BIO-7: Prior to the initiation of ground-disturbing activities, the Project Applicant and construction manager shall conduct a Worker Education Awareness Program (WEAP) to provide construction contractors and all on-site personnel with information to encourage awareness and preservation of the desert ecosystem and the key species and resources with potential to occur on the Project Site and that are found in the western Mojave Desert. The WEAP shall also educate and instruct on-site personnel to avoid harassment and disturbance of wildlife, especially during reproductive activities (e.g., courtship and nesting) during construction. At a minimum, the program shall contain information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protective measures associated with the listed species that potentially occur within or adjacent to the Project Site. The program shall be administered to all onsite

personnel including employees, contractors, contractors' employees, supervisors, inspectors, and subcontractors. The program shall be administered by a qualified biologist. It shall include an oral presentation, video/PowerPoint, and/or written materials. Each Project employee, as well as employees of contractors and subcontractors, who participate in the environmental awareness program shall sign an affidavit declaring that the individual understands and will adhere to the guidelines set forth in the program material. Documentation shall be retained demonstrating that construction personnel attended the training.

BIO-8: The following best management practices shall be implemented during Project grading and construction and decommissioning activities to further address potential impacts on special-status wildlife species:

- To prevent inadvertent entrapment during construction, at the end of each workday all excavated, steep-walled holes or trenches more than two feet deep shall be covered with plywood or similar materials or be equipped with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals by construction personnel trained by a qualified biologist. Should wildlife become trapped, a qualified biologist shall be notified by construction personnel to remove and relocate the individual(s). If a trapped listed species is discovered, the Project shall contact CDFW and/or USFWS to determine appropriate action.
- All open ends of pipes, culverts, or other hollow materials temporarily installed in open trenches or stored in staging/laydown areas shall be covered/capped at the end of each workday. Any such materials that have not been capped shall be inspected by construction personnel for wildlife before being moved, buried, or handled. Should wildlife become trapped, a qualified biologist shall be notified by construction personnel to remove and relocate the individual(s). If a listed species is discovered inside a pipe, that section of pipe shall not be moved. The Project shall contact CDFW and/or USFWS to determine the appropriate action.
- The qualified biologist shall inspect for special-status species and other wildlife under vehicles and equipment every time the vehicles or equipment are moved. If an animal is present, site workers shall wait for the individual to move to a safe location. If a listed species is discovered under equipment or vehicles and does not move on its own, the project shall contact CDFW and/or USFWS to determine the appropriate action.
- To avoid toxic substances on road surfaces, soil binding and weighting agents used on unpaved surfaces shall be nontoxic to wildlife and plants.
- To minimize spills of hazardous materials, all vehicles and equipment shall be maintained in proper condition to minimize the potential for fugitive emissions

of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. Hazardous spills shall be immediately cleaned up and the contaminated soil shall be properly handled or disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated staging area.

- To discourage attraction by predators to the Project Site, all food-related trash items, such as wrappers, cans, bottles, and food scraps, shall be disposed of in solid, closed containers (trash cans) on a daily basis. Onsite trash receptacles shall be emptied as necessary (for example, weekly) to prevent overflow of trash. Trash removed from the receptacles shall be hauled to an offsite waste disposal facility. Workers shall not feed wildlife or bring pets to the Project Site.
- The Project shall incorporate methods to control runoff, including a stormwater pollution prevention plan to meet National Pollutant Discharge Elimination System (NPDES) regulations. Implementation of stormwater regulations is expected to substantially control adverse edge effects (e.g., erosion, sedimentation, habitat conversion) during and following construction, both adjacent to and downstream from the Project area. Typical construction best management practices specifically related to reducing impacts from dust, erosion, and runoff generated by construction activities shall be implemented. During construction, material stockpiles shall be placed such that they cause minimal interference with on-site drainage patterns, which will protect sensitive vegetation from being inundated with sediment-laden runoff. Dewatering shall be conducted in accordance with standard regulations of the Lahontan Regional Water Quality Control Board. An NPDES permit, issued by the RWQCB to discharge water from dewatering activities, shall be required prior to the start of dewatering. This permit will minimize erosion, siltation, and pollution in sensitive vegetation communities.

5.3 NESTING BIRDS AND WILDLIFE MOVEMENT

Suitable bird nesting habitat is present throughout the Project Site. Bird nesting opportunities can occur within the shrubs located within the majority of the Project Site or within a few individual tamarisks located in the southeast corner of the Project Site. Ground nesting species may also nest throughout the eastern portions of the Project Site. Regarding nesting birds, refer to BIO-2 above.

The chain link and desert tortoise fencing that was previously installed around the SEGS X project site circa 1990 was damaged with some gaps in coverage but was recently repaired and reinforced following the negative desert tortoise survey results in 2020; therefore, impacts to wildlife movement are not expected as a result of the Project because the Project Site is already fenced. The survey area is surrounded by undeveloped land to the north, west, and east, and

implementation of the Project will not inhibit wildlife from moving throughout the surrounding areas. Suitable bird nesting habitat is present throughout the survey area.

5.3.1 Avoidance and Minimization Measures

Refer to BIO-2 above, which is recommended to reduce potential impacts to nesting birds to a less than significant level.

5.4 SPECIAL-STATUS VEGETATION COMMUNITIES

Spinescale scrub (*Atriplex spinifera* Shrubland Alliance), a community classified as sensitivity level S3 by the CDFW, was documented within the survey area. This community is considered sensitive by CDFW (CDFW 2020) and the loss of the community within the Project Site would need to be addressed in the CEQA review process as its loss may be considered a significant impact under CEQA and may require additional mitigation to ensure compliance with State regulations. However, as previously noted, previous mitigation requirements set forth for the previously approved but not fully constructed SEGS X facility included the acquisition and transfer of 1,680 acres of mitigation lands to CDFW for the purpose of enhancement and management of suitable desert tortoise and Mohave ground squirrel habitat in perpetuity. On December 7, 1990, the developer of SEGS X, Luz, conveyed approximately 3,192.34 acres of land previously acquired from Santa Fe Pacific Properties to CDFW "for conservation purposes related to mitigation of adverse impacts identified as part of the Luz Project. The land is conveyed subject to such covenants and restrictions on transfer and use contained in the Habitat Mitigation and Acquisition Agreement and the Habitat Mitigation Plan by and between [Luz] and the Department of Fish and Game of the State of California ("CDFG"), dated May 23, 1988, which is intended to bind grantee, CDFG and all subsequent grantees." As explained in a letter from CDFG dated March 23, 1993 documenting the status of acquisition of habitat mitigation for the SEGS projects, the transfer of 1,680 of these acres (identified as coming from Santa Fe Pacific) "satisfies SEGS IX/X mitigation requirement." The subject lands are located within the County of San Bernardino and include Sections 1, 3, 5 and 11, Township 11 North, Range 6 West and Section 7, Township 11 North, Range 5 West, San Bernardino Base and Meridian. The habitat was dedicated to the purpose of supporting Mojave ground squirrel, desert tortoise, and other native wildlife and plants in perpetuity (CEC 1990).

5.5 CRITICAL HABITAT

No USFWS-designated critical habitat has been mapped within the survey area. Therefore, no impacts to critical habitat are expected to occur as a result of the Project, and no further recommendations or avoidance and minimization measures are warranted.

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Appendix A Project Site Photographs

Photograph 1 – View of allscale scrub within the central portion of the survey area, facing west.

Photograph 2 – View of the remnant stick nest located within the concrete structure within the center of the survey area, facing northeast.

Photograph 3 – View of disturbed allscale scrub within the central portion of the survey area, facing west.

Photograph 4 – View of the chain link fence at the north end of the survey area, facing east.

Photograph 5 – View of shadscale scrub in the northeastern portion of the survey area, facing southwest.

Photograph 6 – View of allscale scrub in the eastern portion of the survey area, facing west.

Photograph 7 – View of the topographic depression with several individuals of tamarisk at the southeastern end of the survey area, looking east.

Photograph 8 – View of the SEGS IX solar fields adjacent to the south edge of the survey area, facing east.

Photograph 9 – View of the allscale scrub at the southern end of the survey area, looking west.

Photograph 10 – View of the allscale scrub within the central portion of the survey area, looking west.

Photograph 11 – View of the disturbed allscale scrub at the southern end of the survey area, looking northwest.

Photograph 12 – View of the western portion of the survey area adjacent to the evaporation ponds, looking north.

Photograph 13 – View of the evaporation pond at the western end of the survey area, looking northeast.

Photograph 14 – View of the bare ground at the southwestern end of the survey area, looking east.

Photograph 15 – View of the damaged fence at the southeastern edge of the survey area, looking north. Note that this fence was replaced following the negative results of the 2020 desert tortoise focused surveys.

Photograph 16 – View of the northwestern end of the survey area, looking southwest.

Photograph 17 – Facing northeast from the northwest corner of the survey area.

Photograph 18 – Facing west from the eastern end of the survey area.

Photograph 19 – Facing south from the northeastern corner of the survey area at the reinforced fence.

Photograph 20 – Showing the reinforced fence line with exclusion fencing.

Photograph 21 – Facing southeast from within the Shared Facilities Area. This photo was taken in 2018 for the Lockhart Solar I Facility.

Photograph 22 – Facing north from within the Shared Facilities Area. This photo was taken in 2018 for the Lockhart Solar I Facility.

Appendix B Plants and Wildlife Species Observed List

Scientific Name*	**Common Name**	**Cal-IPC Rating** or Special-Status Rank****
Plants		
Ambrosia dumosa	burrobush	
Amsinckia intermedia	common fiddleneck	
Atriplex confertifolia	spiny saltbush	
Atriplex hymenelytra	desert holly	
Atriplex polycarpa	allscale saltbush	
Atriplex spinifera	spinescale	
*Brassica tournefortii**	Saharan mustard	High
Chaenactis fremontii	Fremont pincushion	
Descurainia pinnata	western tansy mustard	
*Erodium cicutarium**	red-stemmed filaree	Limited
Eschscholzia minutiflora	pygmy poppy	
Lasthenia californica	California goldfields	
Lycium andersonii	Anderson thornbush	
Lycium cooperi	Cooper's box thorn	
Malacothrix glabrata	desert dandelion	
Pectocarya penicillata	winged comb seed	
Phacelia fremontii	Fremont's phacelia	
*Schismus barbatus**	common Mediterranean grass	Limited
*Sisymbrium irio**	London rocket	Limited
Sphaeralcea ambigua var. *ambigua*	apricot mallow	
*Tamarix ramosissima**	tamarisk	High
Invertebrates		
Pogonomyrmex sp.	harvester ant	
Reptiles		
Aspidoscelis tigris tigris	Great Basin whiptail	
Dipsosaurus dorsalis dorsalis	desert iguana	
Gambelia wislizenii	long-nosed leopard lizard	
Sceloporus uniformis	yellow-backed spiny lizard	
Uta stansburiana elegans	western side-blotched lizard	
Birds		
Accipiter striatus	sharp-shinned hawk	WL
Anas carolinensis	green-winged teal	
Anas cyanoptera	cinnamon teal	
Artemisiospiza belli canescens	saltbush (=Bell's) sparrow	
Calidris mauri	western sandpiper	

Scientific Name*	**Common Name**	**Cal-IPC Rating** or Special-Status Rank****
Calidris minutilla	least sandpiper	
Cathartes aura	turkey vulture	
Chordeiles acutipennis	lesser nighthawk	
Circus hudsonius	northern harrier	SSC
Corvus corax	common raven	
Eremophila alpestris actia	California horned lark	WL
Gavia immer	common loon	
Haemorhous mexicanus	house finch	
Lanius ludovicianus	loggerhead shrike	SSC
Larus californicus	California gull	WL
Larus delawarensis	ring-billed gull	
Mareca strepera	gadwall	
Numenius americanus	long-billed curlew	
Oreoscoptes montanus	sage thrasher	
*Passer domesticus**	house sparrow	
Passerculus sandwichensis	savannah sparrow	
Phalacrocorax auritus	double-crested cormorant	WL
Phalaropus lobatus	red-necked phalarope	
Podiceps nigricollis	eared grebe	
Recurvirostra americana	American avocet	
Sayornis nigricans	black phoebe	
*Sturnus vulgaris**	European starling	
Toxostoma lecontei	LeConte's thrasher	
Tyrannus verticalis	western kingbird	
Zenaida macroura	mourning dove	
Zonotrichia leucophrys	white-crowned sparrow	
Mammals		
Ammospermophilus leucurus	white-tailed antelope ground squirrel	
Canis latrans	coyote	
Dipodomys deserti	desert kangaroo rat	
Lepus californicus	black-tailed jackrabbit	
Sylvilagus audubonii	Audubon's cottontail	
Family Vespertilionidae	vesper bat (unidentified)	

* Non-native species

** **California Invasive Plant Council (Cal-IPC) Ratings**

High These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are

conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Limited These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

*** **Special-Status Rank**

SSC Species of Special Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria:

- is extirpated from California or, in the case of birds, in its primary seasonal or breeding role;
- is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed.
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

WL Watch List - taxa that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

Appendix C Special-Status Species Table

Scientific Name **Common Name**	**Status* Federal / State and CRPR *or* G-Rank / S-Rank**	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
PLANTS			
Abronia villosa* var. *aurita **chaparral sand-verbena**	-- / -- 1B.1	Annual herb. Blooms January through September. Occurs in sandy areas in chaparral, coastal scrub, and desert dunes. Known elevations range from 50 to 4,985 feet above mean sea level (amsl).	**Not Expected.** The Survey Area consists primarily of saltbush scrub and lacks the chaparral, coastal scrub, and desert dune habitat that this species typically prefers. Further, the nearest occurrence is over 10 miles to the southeast of the Project Site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Canbya candida **white pygmy-poppy**	-- / -- 4.2	Annual herb. Blooms March through June. Occurs in sandy places in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland. Known elevations range from 2,280 to 5,280 feet amsl.	**Not Expected**. Suitable habitat (sandy soils in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland) is not present within the Survey Area. Vegetation within the Survey Area is composed of chenopod scrub, a separate community (based around saltbush) from Mojavean desert scrub (generally based around creosote bush, which is absent from the Project Site). In addition, the Project Site is out of the known elevation range for this species. Further, the nearest occurrence is over 10 miles to the southwest. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Chorizanthe spinosa **Mojave spineflower**	-- / -- 4.2	Annual herb. Blooms March through July. Occurs in chenopod scrub, Mojavean desert scrub, Joshua tree woodland, and playas. Known elevations range from 20 to 4,265 feet amsl.	**Present.** This species was identified within the Survey Area during rare plant surveys conducted in March and April 2021. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Cymopterus deserticola **desert cymopterus**	-- / -- / 1B.2	Perennial herb. Blooms March through May. Found on fine to coarse, loose, sandy soils of flats in old dune areas with well-drained sand in Joshua tree woodland and Mojavean desert scrub. Known elevations range from 2,065 to 4,920 feet amsl.	**Low**. The Survey Area consists primarily of saltbush scrub and may lack the loose, sandy soils in desert dunes with Joshua tree woodland and Mojavean desert scrub this species typically prefers. Further, the nearest occurrence is over 2.5 miles to the southwest of the Project Site. Not expected

Scientific Name **Common Name**	**Status* Federal / State and CRPR *or* G-Rank / S-Rank**	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
			within the Shared Facilities Area due to lack of any suitable habitat.
Diplacus mohavensis **Mojave monkeyflower**	-- / -- 1B.2	Annual herb. Blooms April through June. Found on dry, sandy or rocky washes along the Mojave River, in Joshua tree woodland and Mojavean desert scrub. Known elevations range from 1,965 to 5,740 feet amsl.	**Not Expected**. Habitat within the Survey Area is comprised of saltbush scrub, and not the dry, sandy washes in desert scrub that is typically preferred by this species. Further, the nearest occurrence is over 10 miles to the southeast of the Project Site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Eriophyllum mohavense **Barstow woolly sunflower**	-- /-- 1B.2	Annual herb. Blooms April through May. Found in siltyor sandy areas w/ saltbush scrub, or creosote bush scrub. Known elevations range from 1,985 to 4,232 feet amsl.	**Moderate**. Suitable habitat (sandy soils in saltbush scrub) is present throughout the Survey Area. The Survey Area is located approximately 7 miles east of the Barstow Woolly Sunflower Area of Critical Environmental Concern. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Lycium torreyi **Torrey's box-thorn**	-- / -- 4.2	Shrub. Blooms March through May. Occurs on sandy, rocky washes, streambanks, and desert valleys in Mojavean desert scrub and Sonoran desert scrub. Known elevations range from -150 to 3,600 feet amsl.	**Not Expected**. Suitable habitat (sandy washes in desert scrub) is not present within the Survey Area. Vegetation within the Survey Area is composed of chenopod scrub, a separate community (based around saltbush) from Mojavean desert scrub (generally based around creosote bush, which is absent from the Project Site). Further, the nearest occurrence is over 8 miles to the southwest of the Project Site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Mentzelia tridentata **creamy blazing star**	-- / -- 1B.3	Annual herb. Blooms March through May. Found in Mojavean desert scrub. Known elevations range from 2,200 to 3,805 feet amsl.	**Not Expected**. Suitable habitat (desert scrub) is not present within the Survey Area. Vegetation within the Survey Area is composed of chenopod scrub, a separate community (based around saltbush) from Mojavean desert scrub (generally based around creosote bush, which is absent

Scientific Name Common Name	Status* Federal / State and CRPR *or* G-Rank / S-Rank	Habitat Preferences and Distribution Affinities	Potential for Occurrence
			from the Project Site). Further, the nearest occurrence is over 8 miles to the northeast to the Project Site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Muilla coronata **crowned muilla**	-- / -- 4.2	Perennial herb. Blooms March through April. Occurs on barren flats and ridges in sandy, granitic soils in Joshua tree woodland, pinyon and juniper woodland, Mojavean desert scrub, and chenopod scrub. Known elevations range from 2,200 to 6,430 feet amsl.	**Low**. Suitable habitat (sandy soils in chenopod scrub, a vegetation community based around saltbush scrub) is present within the Survey Area. However, the nearest occurrence is over 10 miles to the southeast of the Project Site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Pediomelum castoreum **Beaver Dam breadroot**	-- / -- 1B.2	Perennial herb. Blooms April through May. Found on sandy soils of desert washes and road cuts in Joshua tree woodland and Mojavean desert scrub. Known elevations range from 1,965 to 3,495 feet amsl.	**Low**. The Survey Area consists primarily of saltbush scrub and may lack the sandy soils of desert washes and road cuts typically preferred by this species. Further, the nearest occurrence is over 10 miles to the southwest of the Project Site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Sclerocactus polyancistrus **Mojave fish-hook cactus**	-- / -- 4.2	Perennial stem succulent. Grows on carbonate soils within Great Basin scrub, Joshua tree woodland, and Mojavean desert scrub habitats. Found at elevations ranging from 2,100 to 7,612 feet amsl. Blooming period is from April to July.	**Not Expected**. The Survey Area consists primarily of saltbush scrub and lacks the carbonate soils within Great Basin scrub, Joshua tree woodland, and Mojavean desert scrub typically preferred by this species. Further, the nearest occurrence is over 9 miles to the southeast of the Project Site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Yucca brevifolia **western Joshua tree**	-- / SC	Tree. Occurs in silts, loams, and/or sands within desert grassland and shrublands. Typically found on flats, mesas, bajadas, and gentle slopes in the Western Mojave Desert.	**Absent**. This species is conspicuous and unmistakable and was not found within the Survey Area. Further, the nearest occurrence is greater than 5 miles from the Project Site. Absent from the Shared Facilities Area.
INVERTEBRATES			
Bombus crotchii	-- / SC	Found from coastal California	**Not Expected.** The preferred

Scientific Name **Common Name**	**Status* Federal / State and CRPR *or* G-Rank / S-Rank**	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Crotch bumble bee	G3G4 / S1S2	east to the Sierra-Cascade crest and southinto Mexico. Nectar plantgenera include *Antirrhinum*,*Phacelia*,*Clarkia*, *Dendromecon*, *Eschscholzia*, and *Eriogonum*.	nectar plants associated with this species were not found within the Survey Area, which is almost entirely composed of saltbush. Further, the nearest occurrence is over 9 miles to the southwest of the Project Site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Bombus occidentalis **western bumble bee**	-- / SC G2G3 / S1	Found along the western United States. Nectar plant genera include *Melilotus, Cirsium, Trifolium, Centaurea, Chrysothamnus/Ericameria*, and *Eriogonum*.	**Not Expected.** The preferred nectar plants associated with this species were not found within the Survey Area, which is almost entirely composed of saltbush. Further, the nearest occurrence is over 9 miles to the southwest of the Project Site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
FISH			
Siphateles bicolor mohavensis **Mohave tui chub**	FE / SE, FP G4T1 / S1	Endemic to the Mojave River basin; adapted to alkaline, mineralized waters. Needs deep pools, ponds, or slough-like areas. Needs vegetation for spawning.	**Not Expected.** The Project Site does not contain any water bodies that would be capable of supporting this species and therefore there is no habitat to support this aquatic-dependent species. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
AMPHIBIANS			
Anaxyrus californicus **arroyo toad**	FE / SSC G2G3 / S2S3	Inhabits washes, arroyos, sandy riverbanks, and riparian areas with willows, sycamores, oaks, and cottonwoods. Has extremely specialized habitat needs, which include exposed sandy stream sides with stable terraces for burrowing with scattered vegetation for shelter, and areas of quiet water or pools free of predatory fishes with sandy or gravel bottoms without silt for breeding.	**Not Expected**. The Project Site does not have any washes or other waterways that would be capable of supporting this species. Further, the nearest occurrence is over 15 miles to the southeast of the Project Site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.

Scientific Name **Common Name**	**Status* Federal / State and CRPR *or* G-Rank / S-Rank**	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
REPTILES			
Gopherus agassizii **desert tortoise**	FT / ST G3 / S2S3	Most commonly occurs in desert scrub, desert wash, and Joshua tree habitats (i.e., almost every desert habitat). Requires friable soils for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms is preferred.	**Not Expected**. Suitable habitat is present within the Survey Area, although allscale scrub is one of the lesser-used habitat types for this species after the most frequently used type, creosote bush scrub. The Survey Area is adjacent to designated Critical Habitat on two sides, but the local population has been in decline for decades due to development of this area. Focused desert tortoise presence/absence surveys were conducted across the entire Survey Area in May 2020 and March 2021, with no tortoises or tortoise sign observed. The entire Project Site is fenced with chain link fencing including exclusionary fencing specifically to keep desert tortoise from entering the Project Site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Uma scoparia **Mojave fringe-toed lizard**	-- / SSC G3G4 / S3S4	Found in fine, loose, wind-blown sand in sand dunes, dry lakebeds, riverbanks, desert washes, sparse alkali scrub, and desert scrub. Shrubs or annual plans may be necessary for arthropods found in the diet.	**Not Expected**. The Survey Area, although characterized by desert scrub (saltbush scrub) habitat, lacks the Aeolian influence that this species is associated with. The nearest occurrence is on Harper Dry Lake to the east. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
BIRDS			
Accipiter striatus **sharp-shinned hawk**	-- / WL G5 / S4	Occurs in a wide range of woodlands and forests that are mostly dominated by conifers and by various types of broad-leaved trees (especially oaks). The largest populations of the nominate group (Accipiter striatus) are thought to occur in the temperate boreal forests, but winter in warmer regions, such as the southern US,	**Present (Foraging).** This species was observed within the survey area during the 2020 surveys. Not expected within the Shared Facilities Area due to lack of any suitable habitat.

Scientific Name **Common Name**	**Status* Federal / State and CRPR *or* G-Rank / S-Rank**	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
		Mexico, and Central America.	
Asio otus **long-eared owl**	-- / SSC G5 / S3	Nests in conifer, oak, riparian, pinyon-juniper, and desert woodlands that are either open or are adjacent to grasslands, meadows, or shrublands. Key habitat components are some dense cover for nesting and roosting, suitable nest platforms, and open foraging areas.	**Moderate (Nesting & Foraging)**. The southeastern perimeter of the Survey Area contains suitable nesting habitat in the extensive windrows that are present, and the Survey Area and general vicinity, including Harper Dry Lake, constitute suitable foraging habitat for this species. There are numerous historic records of this species at Harper Dry Lake, and of this species nesting and/or wintering in this area of the desert. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Athene cunicularia **burrowing owl**	-- / SSC G4 / S3	Primarily found in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation, but it persists and even thrives in some landscapes highly altered by human activity, such as earthen canals, berms, rock piles, and pipes. Subterranean nester, most often dependent upon burrowing mammals, most notably, the California ground squirrel (*Otospermophilus beecheyi*).	**Low (Foraging).** Although this species has historically been recorded many times at Harper Dry Lake, habitat in the Survey Area is less suitable. Many areas of the Survey Area are densely packed with allscale saltbush and on-site prey appears to be low based on the general lack of activity during the reconnaissance survey and compacted soils caused during partial construction of the SEGS X project. No suitable burrows were identified during site surveys but this species could come into the Survey Area while foraging. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Buteo swainsoni **Swainson's hawk**	-- / ST G5 / S3	Summer migrant in southern California. Typical habitat is open desert, grassland, or cropland containing scattered large trees or small groves. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley. Forages in adjacent grassland or suitable grain or alfalfa fields or livestock pastures.	**Not Expected.** Suitable nesting or foraging habitat for this species consists of large, open agricultural fields or areas of high rodent productivity with sparse trees for nesting. This species also is only known to nest in very specific areas in southern California. There are no records for this species within five miles of the Project Site based on the CNDDB database search. Not expected

Scientific Name **Common Name**	**Status* Federal / State and CRPR *or* G-Rank / S-Rank**	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
			within the Shared Facilities Area due to lack of any suitable habitat.
Aquila chrysaetos **golden eagle**	-- / FP, WL G5 / S3	Inhabits rolling foothills, mountain areas, sage-juniper flats, and deserts. Preferred habits include broadleaved upland forest, cismontane woodland, coastal prairie, and Great Basin grassland. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**Low (Nesting & Foraging).** Suitable foraging habitat (open desert scrub) is present throughout the Survey Area, but the most common nesting habitat (cliff-walled canyons or large, isolated trees) is not present within the Survey Area. Although the nearest occurrence in the CNDDB is roughly 3.25 miles to the northwest, eBird shows a variety of sightings of this species in the vicinity of Harper Dry Lake. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Artemisiospiza belli belli **Bell's sage sparrow**	-- / WL G5T2T2 / S3	This species has a wide, but sparse distribution in western Riverside County, specifically within the "Riverside lowlands, San Jacinto Foothills, Santa Ana Mountains, and Desert Transition Bioregions. Yearlong resident on the coastal side of southern California mountains. Breeds in coastal sage scrub and chaparral habitats from February to August. They require semi-open habitats with evenly spaced shrubs one to two meters high. Occurs in chaparral dominated by fairly dense stands of chamise (*Adenostoma fasciculatum*).	**Not Expected.** The subspecies of Bell's sparrow (*A. b. canescens*) that is present in the Survey Area is different from the sensitive subspecies (*A. b. belli*). The sensitive subspecies is not expected to be present at the Project Site or Shared Facilities Area because they are outside of its known range.
Charadrius alexandrinus nivosus **western snowy plover**	FT / SSC G3T3 / S2S3	Found in sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	**Not Expected.** Suitable habitat is lacking in the Survey Area, although this species is expected to occur regularly at Harper Dry Lake to the east. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Charadrius montanus **mountain plover**	-- / SSC G3 / S2S3	Found in short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Prefers	**Not Expected.** The Survey Area lacks any grasslands or agricultural fields, which this species is almost invariably

Scientific Name **Common Name**	**Status* Federal / State and CRPR *or* G-Rank / S-Rank**	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
		short vegetation, bare ground, and flat topography. Also prefers grazed areas with burrowing rodents.	associated with during winter. Further, agricultural fields in the surrounding area where plovers had previously been recorded have subsequently been developed. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Circus hudsonius **northern harrier**	-- / SSC G5 / S3	Breeds throughout the northern parts of the northern hemisphere in Canada and the northernmost USA. It migrates to more southerly areas in winter with breeding birds in more northerly areas moving to the southernmost US, Mexico, and Central America. In milder regions in the southern US, they may be present all year, but the higher ground is largely deserted in winter. This bird inhabits prairies, open areas, and marshes.	**Present (Foraging).** This species was observed within the Survey Area during the 2021 surveys. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Eremophila alpestris actia **California horned lark**	-- / WL G5T4Q / S4	Yearlong resident of California. This subspecies is typically found in coastal regions. Breed in level or gently sloping shortgrass prairie, montane meadows, "bald" hills, open coastal plains, fallow grain fields, and alkali flats. Within southern California, California horned larks breed primarily in open fields, (short) grasslands, and rangelands. Nests on the open ground.	**Present (Nesting & Foraging).** This species was observed within the Survey Area during the 2020 and 2021 surveys. Not expected to nest within the Shared Facilities Area due to lack of any suitable habitat but may forage opportunistically.
Falco mexicanus **prairie falcon**	-- / WL G5 / S4	Inhabits dry, open terrain, either level or hilly, in Great Basin grasslands, Great Basin scrub, Mojavean desert scrub, Sonoran Desert scrub, and valley and foothill grasslands. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	**Low (Nesting & Foraging).** The Survey Area contains suitable foraging habitat for this species, particularly in the more open and sparsely vegetated portions. Occurs periodically on Harper Dry Lake. Not expected within the Shared Facilities Area due to lack of any suitable habitat.

Scientific Name **Common Name**	**Status* Federal / State and CRPR *or* G-Rank / S-Rank**	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
Gymnogyps californianus **California condor**	FE / SE, FP G1 / S1	Current distributionof California condor is considered to be all of the Los Padres National Forest and western half of the Angeles National Forest, with some occasionally found in the Sequoia National Forest. Nest sites are typicallylocated in chaparral, coniferforest, or oak woodlandhabitats. Nest sites are in cliff caves in the mountains. Some have nested in large cavities within sequoias *(Sequoiadendron iganteum*).	**Not Expected.** The Project Site is outside of the breeding range of this species and outside of its typical foraging range. There are no records for this species in the general vicinity in either the CNDDB or in eBird. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Lanius ludovicianus **loggerhead shrike**	-- / SSC G4 / S4	Found in broken woodlands, savannah, pinyon-juniper, Joshua tree, riparian woodlands, desert oases, scrub, and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Present (Foraging), High (Nesting).** Suitable habitat is present throughout the Survey Area and this species is knownto occur in the surroundingarea. A single shrike was seen on-site in July 2021 by the Michael Baker biologists, and possibly the same bird was seen later the same morningfrom a distance carrying an item into the brush, implying possibly nesting. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Larus californicus **California gull**	-- / WL G5 / S4	Nests in colonies in shallow depressions on the ground lined with vegetation and feathers. Their breeding habitat is lakes and marshes in interior western North America and the Northwest Territories, Canada south to eastern California and Colorado. This species is migratory, mostmoving to the Pacific coast in winter.	**Present (Foraging).** This species was observed within the Survey Area during the 2020 surveys. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Phalacrocoracidae auratus **double-crested cormorant**	-- / WL G5 / S4	Resident on the Pacific Coast from the Aleutian Islands south to Nayarit, Mexico and inland to the Colorado River. They build their stick nests in trees, on cliff edges, or on the ground on suitable islands. The Project Site lies within migratory paths of the double-crested cormorant	**Present (Foraging).** This species was observed within the Survey Area during the 2020 surveys. Not expected within the Shared Facilities Area due to lack of any suitable habitat.

Scientific Name **Common Name**	**Status* Federal / State and CRPR *or* G-Rank / S-Rank**	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
		and may be found intermittently due to the proximity to the Pacific Ocean to the west and the Colorado River to the east.	
Rallus obsoletus yumanensis **Yuma Ridgway's rail**	FE / ST, FP G5T3 / S1S2	Prefers stands of cattails and tule dissected by narrow channels of flowing water containing crawfish. Nests in freshwater marshes along the Colorado River and along the south and east ends of the Salton Sea.	**Not Expected**. Suitable marsh or slow-water habitat is not present within the Survey Area. Further, the nearest occurrence is roughly 2.75 miles to the southeast of the Project Site along the edge of Harper Dry Lake.
Setophaga petechia **yellow warbler**	-- / SSC G5 / S3S4	Present in California from April through September. Nests in riparian areas dominated by willows, cottonwoods, California sycamores, or alders (*Alnus spp.*) or in mature chaparral. May also use oaks, conifers, and urban areas near stream courses.	**Low (Foraging).** This species may pass through and forage in tamarisks in the Survey Area during spring and fall migration but there is no riparian nesting habitat present. This species occurs regularly on Harper Dry Lake during migration. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Toxostoma lecontei **LeConte's thrasher**	-- / SSC G4 / S3	Common yearlong resident in southern California. Typically occurs primarily in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats; also occurs in Joshua tree habitat with scattered shrubs. Habitats with a high proportion of one or more species of saltbush (*Atriplex* spp.) and/or cylindrical cholla cactus (*Cylindropuntia* spp.) is preferred. The ground is generally bare or with sparse patches of grasses and annuals forming low ground cover. Prefers thick, dense, and thorny shrubs or cholla cactus for nesting.	**Not Expected.** Although LeConte's thrashers are known to occur in the general Project vicinity and one was observed on-site in July 2021 by the Michael Baker biologists, the special-status designation for this species refers specifically to the population in the San Joaquin Valley, Toxostoma lecontei macmillanorum. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
MAMMALS			
Microtus californicus mohavensis **Mohave river vole**	-- / SSC G5T1 / S1	Occurs only in weedy herbaceous growth in wet areas and riparian scrub along the Mojave River. May be found in some irrigated pastures. Burrows into soft soil. Feeds on leafy parts of	**Not Expected**. This species is restricted to wet areas or irrigated pastures along and near the Mojave River. This habitat does not occur in the Survey Area. Further, the nearest occurrence is roughly

Scientific Name **Common Name**	**Status* Federal / State and CRPR *or* G-Rank / S-Rank**	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**
		grasses, sedges and herbs. Clips grasses to form runways from burrow.	2.75 miles to the southeast of the Project Site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Taxidea taxus **American badger**	-- / SSC G5 / S3	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground where it can burrow and prey on burrowing rodents.	**Low**. Although suitable habitat is present within the Survey Area, no burrows of suitable size were found during surveys of the Project Site. Further, the nearest occurrence is nearly 9 miles to the southeast. Not expected within the Shared Facilities Area due to lack of any suitable habitat.
Xerospermophilus mohavensis **Mohave ground squirrel**	-- / ST G2G3 / S2S3	Inhabits open desert scrub, alkali scrub, and Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave Desert. Prefers sandy to gravelly soils; avoids rocky areas. Uses burrows at base of shrubs f or cover. Nests are in burrows.	**Varies across the Survey Area**. MGS not expected in lands previously in intensive agriculture that were graded and compacted during partial construction of SEGS X; these areas still have compacted soils unsuitable for MGS. Low to moderate potential in parts of the SEGS X site that have not been compacted, generally in the northern and western parts of the site. Not expected within the Shared Facilities Area due to lack of any suitable habitat.

FESA Classifications

FE	Federally Endangered
FT	Federally Threaten ed

CESA Classifications

SE	State Endangered
ST	State Threatened
SCE	State Candidate for Listing
SSC	California Species of Special Concern
FP	Fully Protected
WL	Watch List

California Rare Plant Rank (CRPR)

1A Plants presumed extirpated in California and either rare or extinct elsewhere 1B Plants rare, threatened, or endangered in California and elsewhere
2A Plants presumed extirpated in California, but common elsewhere
2B Plants rare, threatened, or endangered in California, but more common elsewhere
3 Plants about which more information is needed - a Review List
4 Plants of limited distribution - a Watch List

Threat Ranks

.1 Seriously threatened in California (over 80 percent of occurrences

Scientific Name **Common Name**	**Status* Federal / State and CRPR *or* G-Rank / S-Rank**	**Habitat Preferences and Distribution Affinities**	**Potential for Occurrence**

threatened/high degree and immediacy of threat)

.2 Moderately threatened in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat)

.3 Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known)

G- Rank / S- Rank

Global Rank and State Rank as per NatureServe and CDFW's CNDDB RareFind 5, ranging from critically imperiled (G1/S1) to demonstrably secure (G5/S5), with variations and qualifiers[11].

Infraspecific Taxon Conservation Status Ranks

Infraspecific taxa refer to subspecies, varieties, and other designations below the level of the species. Infraspecific taxon status (T-ranks) apply to plants and animals only; these T-ranks do not apply to ecological communities. The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above for global conservation status ranks.

[1] http://explorer.natureserve.org/granks.htm

Appendix D Rare Plant Survey Report

Rare Plant Survey at the Lockhart Solar PV II Project, Lockhart, San Bernardino County, California Spring 2021

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This document reports the results of a rare plant survey performed during a drought year. This survey is not intended to substitute for a protocol-level rare plant survey, which necessitates that it be conducted when potentially occurring rare plant species are detectable.

October 2021

EXECUTIVE SUMMARY

A rare plant survey was conducted in March and April 2021 by EREMICO Biological Services, LLC at the Lockhart Solar PV II Project (Project). The purpose of the survey was to determine the occurrence of special status (i.e., rare) plant species, sensitive natural communities, and plants protected by the California Desert Native Plant Act (CDNPA) within the survey area. The survey area only encompassed 670 acres of the total 755-acre Project Site because the portion of the Project Site on its southern end referred to as the Shared Facilities Area was surveyed as part of the permitting effort for the Lockhart Solar I Facility (Michael Baker International 2018). The Shared Facilities Area is completely barren other than some existing buildings; thus, did not need to be resurveyed.

During the survey one annual rare plant species was identified from dried skeletons - Mojave spineflower (*Chorizanthe spinosa*). This species is on a watch list that includes plants with limited distribution and limited information (California Rare Plant Rank [CRPR] 4 plant). Approximately 4,700 dried plants in 2,624 square meters were tallied. Because of the dry conditions at the time of the survey and the lack of annual herb germination within the survey area or in surrounding areas, the presence or absence of the other potentially occurring annual rare plants, which included desert cymopterus (*Cymopterus deserticola*), Barstow woolly sunflower (*Eriophyllum mohavense*), creamy blazing star (*Mentzelia tridentata*), Beaver Dam breadroot (*Pediomelum castoreum*), and white pygmy-poppy (*Canbya candida*) could not be determined. However, soil types within the survey area were not appropriate for these species, therefore, occurrence is very unlikely.

Only one individual California Desert Native Plant Act species, a silver cholla (*Cylindropuntia echinocarpa*), was recorded. In addition, one sensitive natural community, spinescale scrub (*Atriplex spinifera* Shrubland Alliance) was present and encompassed 47.48 acres in the northeastern portion of the survey area.

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APPENDICES

1. INTRODUCTION

On behalf of Lockhart Solar PV II, LLC, EREMICO Biological Services, LLC, under contract with EnviroPlus Consulting, Inc., conducted a rare plant survey for the Lockhart Solar PV II Project (Project). The objectives of the survey were 1) to identify any special status (i.e., rare) plants and sensitive natural communities that occur within the survey area; and 2) identify potential habitat for special status plant species that have some potential to occur within the survey area but may not be present or observable during the time of the survey. This report documents methods and results of the rare plant survey.

1.1 PROJECT DESCRIPTION

Lockhart Solar PV II, LLC (Applicant) proposes to develop the Lockhart Solar PV II Project (Project), a utility scale, solar photovoltaic (PV) electricity generation and energy storage facility that would produce up to 150 megawatts (MW) of solar power and include up to 4 gigawatt hours (GWh) of energy storage capacity rate in a battery energy storage system (BESS) within the approximately 755-acre Project Site. The Project is located within the County of San Bernardino (County) and is largely sited on land previously approved by the California Energy Commission (CEC) for development of Solar Energy Generating System (SEGS) X, a solar thermal power facility which was never fully constructed. The Project is bordered on the south by the approved Lockhart Solar I Facility and the existing SEGS VIII and IX Solar Thermal Plants. The Project would share existing operations and maintenance (O&M) facilities with the Lockhart Solar I Facility (i.e., O&M building, warehouse and employee building), water and septic systems, switchyard and electrical transmission infrastructure, and a new collector substation (approved and to be constructed) within the approximately 110-acre "Shared Facilities Area" to connect the Project to the existing transmission line which runs to the Southern California Edison (SCE)-owned Kramer Junction substation.

1.2 PROJECT LOCATION

The Project Site is in unincorporated Hinkley, CA, approximately 7 miles north of the intersection of Harper Lake Road and Mojave-Barstow Highway 58. The Project Site consists of three parcels, each of which contain vacant, previously disturbed land or miscellaneous concrete foundations and various electrical lines and poles, as well as existing facilities within the Shared Facilities Area. The Project Site is bordered on the south by the existing SEGS VIII and IX Solar Thermal Power Plants, which the County approved for repowering to PV solar and battery storage in 2019 as part of the Lockhart Solar I Facility (CUP Project #201900125 approved in 2019), Harper Lake Road to the east; Hoffman Road to the west; and vacant land to the north (Figure 1-1 *Lockhart Solar PV II Project Vicinity Map*). The Project is located on the Lockhart U.S. Geological Survey (USGS) 1:24000 quadrangle; the cadastral description follows:

- Township 11 North, Range 4 West – portions of Sections 18 and 19; and
- Township 11 North, Range 5 West – portions of Sections 13 and 24.

Elevations range from 2,027 feet above mean sea level (AMSL) in the northeast corner to 2,070 feet AMSL in the southwest corner.

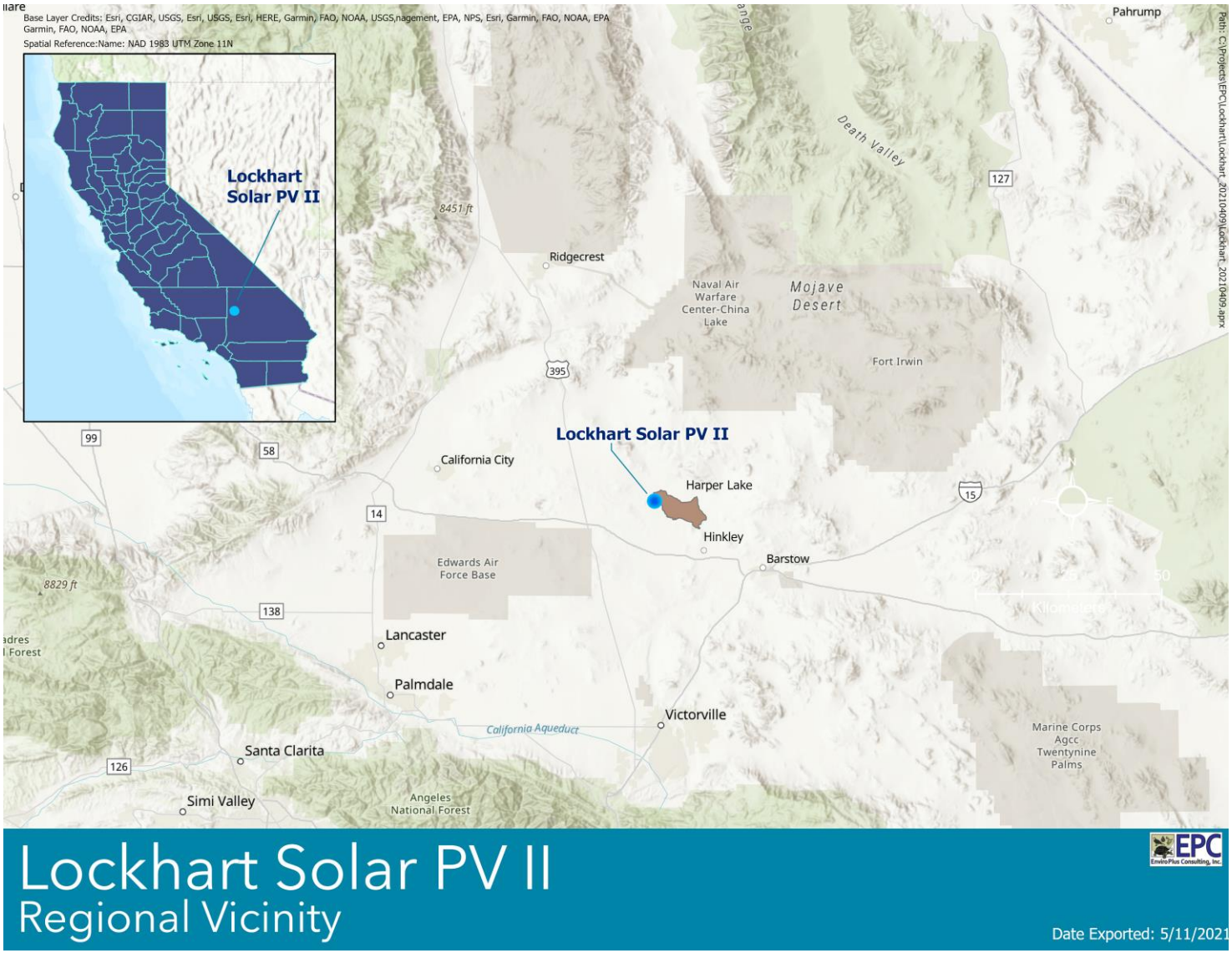

Figure 1-1. Lockhart Solar PV II Project Vicinity Map

2. METHODS

The rare plant survey supplements the biological resources surveys conducted by Michael Baker International (2020-2021). The survey area only encompassed 670 acres of the total 755-acre Project Site because the portion of the Project Site on its southern end referred to as the Shared Facilities Area was surveyed as part of the permitting effort for the Lockhart Solar I Facility (Michael Baker International 2018). Construction of the approximately 110-acre Shared Facilities Area occurred as part of SEGS VIII and IX facilities construction in the early 1990s; existing facilities in the Shared Facilities Area include an operations and maintenance (O&M) building, warehouse, employee building, switchyard, other supporting facilities, electrical transmission infrastructure, and compacted access roads. Thus, the Shared Facilities Area has incurred comprehensive severe surface disturbance over the past 30 years as part of the two operational solar thermal facilities and continues to be completely denude of vegetation. The Shared Facilities Area is completely barren other than some existing buildings; thus, did not need to be resurveyed.

2.1 DATABASE SEARCH AND LITERATURE REVIEW

A list of special status plants and sensitive natural communities that occur or appear to have some potential to occur within the survey area was developed using information from the California Natural Diversity Database (CNDDB 2021a), the Bureau of Land Management (BLM 2015), the Desert Renewable Energy Conservation Plan (DRECP) (Dudek 2014), DRECP Data Basin (Dudek 2014), California Native Plant Society (CNPS), and biological resources survey reports. The database search included the following topographic maps (USGS quadrangles, 7.5-minute series):

Bird Spring
Fremont Peak
Hinkley
Kramer Hills
Lockhart
Opal Mountain
The Buttes
Twelve Gauge Lake
Water Valley

The search also included a query of CNDDB QuickView (CNDDB 2021a), a free Internet application, to determine if there were: 1) any records that have not been processed in the CNDDB or 2) any records for California Rare Plant Rank (CRPR) 3 and CRPR 4 plant species, which are often not found during the CNDDB search.

A special status plant species or sensitive natural community was judged to occur within the survey area if there were locality records, either historic or recent, indicating its presence. A species was judged to have some potential for inhabiting the survey area if it is known to occur in the same general area, in a similar habitat, and/or at a similar elevation as the survey area. A species was included on the special status list if it fell into one or more of the following categories (BLM 2015; CNDDB 2021a, 2021b, 2021c; CNPS 2021; U.S. Fish and Wildlife Service [FWS] 2021):

- taxa that are officially listed or proposed for listing under the State and/or Federal Endangered Species Acts;
- taxa that are State or Federal candidates for possible listing;
- taxa considered sensitive by the BLM;
- taxa listed in the California Native Plant Society's *Inventory of Rare and Endangered Plants of California* (CNPS 2021);
- taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act (CEQA)

Guidelines (e.g., all CRPR 1 and 2 and some CRPR 3 and 4 plants may fall under Section 15380 of CEQA);

- taxa that are biologically rare, very restricted in distribution, or declining throughout their range but not currently threatened with extirpation;
- populations in California that may be on the periphery of a taxon's range, but are threatened with extirpation in California; and
- taxa closely associated with a habitat that is declining in California at a significant rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands, vernal pools, etc.).

In addition, taxa protected under the California Desert Native Plants Act (CDNPA) (Division 23 of the California Food and Agricultural Code, Section 80071-80075), which include cacti and yuccas, were also considered. These taxa include:

- Smoke tree (*Psorothamnus spinosus*);
- all native species in the genus *Prosopis*, i.e., mesquites;
- all native species in the genus *Nolina*, i.e., beargrass;
- all native species in the family *Cactaceae*, i.e., cacti; and
- all native species in the family *Agavaceae*, i.e., century plants (*Agave* spp.), Joshua trees (*Yucca brevifolia*) and other *Yucca* spp., desert lilies (*Hesperocallis undulata*).

Although federal and/or state threatened or endangered species or proposed threatened or endangered species receive legal protection, special status species do not. However, local, state, and federal resource agencies typically require that these species be considered during the planning process for projects because: 1) they either are declining at a rate that could result in a state and/or federal listing or they have historically occurred in low numbers, and 2) known threats to their persistence currently exist. Designations and rankings of special status species are intended to focus attention on the species to help avert the need for costly listing and recovery efforts required under federal and/or state endangered species laws.

Prior to conducting the field survey, field investigators reviewed the physical description, habitat description, drawings, and photographs of each potentially occurring special status plant species. Sources for information on each species included floras (Abrams and Ferris 1923-1960, Baldwin et al. 2012, Munz 1974), field guides (Jaeger 1940, MacKay 2013), and other sources (CNPS 1978, 2021; Smithsonian Institution 1978; University of California 2021). The field crew also developed a list of known locations for rare plants in the general Project vicinity based on CNDDB records. Immediately prior to the protocol-level rare plant survey, the crew visited some of these locations to become familiar with the rare plant's appearance and habitat and to determine if it would be identifiable at the time of the survey.

2.2 RARE PLANT SURVEY

EREMICO Biological Services, LLC personnel Denise LaBerteaux and Bruce Garlinger conducted the rare plant survey for the Project on March 31, April 1, April 5-6, 2021. The field survey consisted of a full coverage survey of the survey area following protocols recommended by the CDFW (2018). The field crew systematically walked 15-m wide parallel line transects over

the entire survey area to achieve full coverage. If any special status plant or CDNPA plant was encountered, its location was recorded with a Garmin hand-held GPS unit.

The rare plant survey was floristically based, that is, the field crew identified all plant species, whether fresh or dried, that were encountered in the survey area to at least genus and to the level necessary to ensure that they were not plant species of concern. Nomenclature throughout this report follows *The Jepson Manual: Vascular Plants of California, 2nd Ed.* (Baldwin et al. 2012).

3. RESULTS

3.1 DATABASE SEARCH AND LITERATURE REVIEW

The CNDDB and CNDDB QuickView searches found one record of a special status plant within the survey area. Barstow woolly sunflowers (*Eriophyllum mohavense*) were recorded in the southwestern portion of the survey area and in adjacent areas to the south during preconstruction surveys in 1989 for the SEGS VIII Solar Thermal Power Plant (CNDDB 2021a). In addition, seven special status plants were identified as occurring in the general Project vicinity (Figure 3-1, Table 3-1). None of these species are listed under the Federal Endangered Species Act (FWS 2021) or the California Endangered Species Act (CNDDB 2021c). Occurrence potential for each species in the survey area, provided in Table 3-1, was estimated prior to the rare plant survey and was based on habitat requirements and proximity to known populations. Final determination of occurrence potential was based on the results of the rare plant survey.

Of the eight special status plant species identified within the Project vicinity, four species are listed as CRPR 1B, defined as plants that are rare and endangered in California and elsewhere; and the remaining four species are listed as CRPR 4, a watch list of plants with limited distribution and limited information (CNPS 2021). Because of the lack of specific locational information for the potentially occurring CRPR 4 plants, except for white pygmy-poppy (*Canbya candida*), they are not mapped on Figure 3-1. Each of the eight potentially occurring species are described below.

Desert Cymopterus (*Cymopterus deserticola*). The desert cymopterus is a deep-rooted, stemless perennial that usually grows to a height of 15 cm. Its leaf blades are 4-8 cm long, highly dissected and hairless. The inflorescence is compact and spherical with numerous purple flowers. The fruit is 5-7 mm long with narrowly winged ribs. With a flowering season from late March to early May, this rare species occurs an elevation of 700-1,310 m above mean sea level (AMSL). It grows on alluvial plains in fine to coarse, sandy soil and in old dune areas that have deep, well-drained sand, typically in creosote bush scrub and Joshua tree woodland (Baldwin et al. 2012). It is a CRPR 1B plant. Threats to the desert cymopterus include grazing, off-highway vehicles, and development (CNPS 1978; 2021). Records show that it occurs in the Rogers Dry Lake basin from Kramer Junction to Edwards Air Force Base (AFB), Cuddeback Dry Lake basin, and Harper Dry Lake basin (Figure 3-1), in Kern, Los Angeles and San Bernardino Counties. The majority of known populations occur on Edwards AFB and vicinity.

Barstow Woolly Sunflower (*Eriophyllum mohavense*). The Barstow woolly sunflower is a woolly, tufted, dwarf annual, measuring 1-2.5 cm tall and 2-3 cm wide. Leaves are spoon-to-wedge-shaped and sharply 3-toothed. Flower heads have 3-4 yellow disk flowers. It is found in fine gravelly, silty, sandy, or clay soils on level or sloping terrain, as well as in low-lying depressions/desert playas. It grows in creosote bush or saltbush scrub at elevations of 500-800 m AMSL and typically flowers between April and May (Baldwin et al. 2012). The Barstow woolly sunflower occurs largely in west-central San Bernardino County and eastern Kern County. Known locations range from California City and northern Edwards AFB to Boron, Kramer Hills, Harper Dry Lake basin, Opal Mountain, and Cuddeback Dry Lake basin. Partly because it occurs in such a limited area, the CRPR is 1B. In general, threats to this rare species include energy development, military activities, vehicles/road construction, and grazing (CNPS 2021) The CNDDB (2021a) has occurrence records in and near the survey area, including in 1989 at the SEGS VIII Solar Thermal Power Plant site prior to facility development (Figure 3-1).

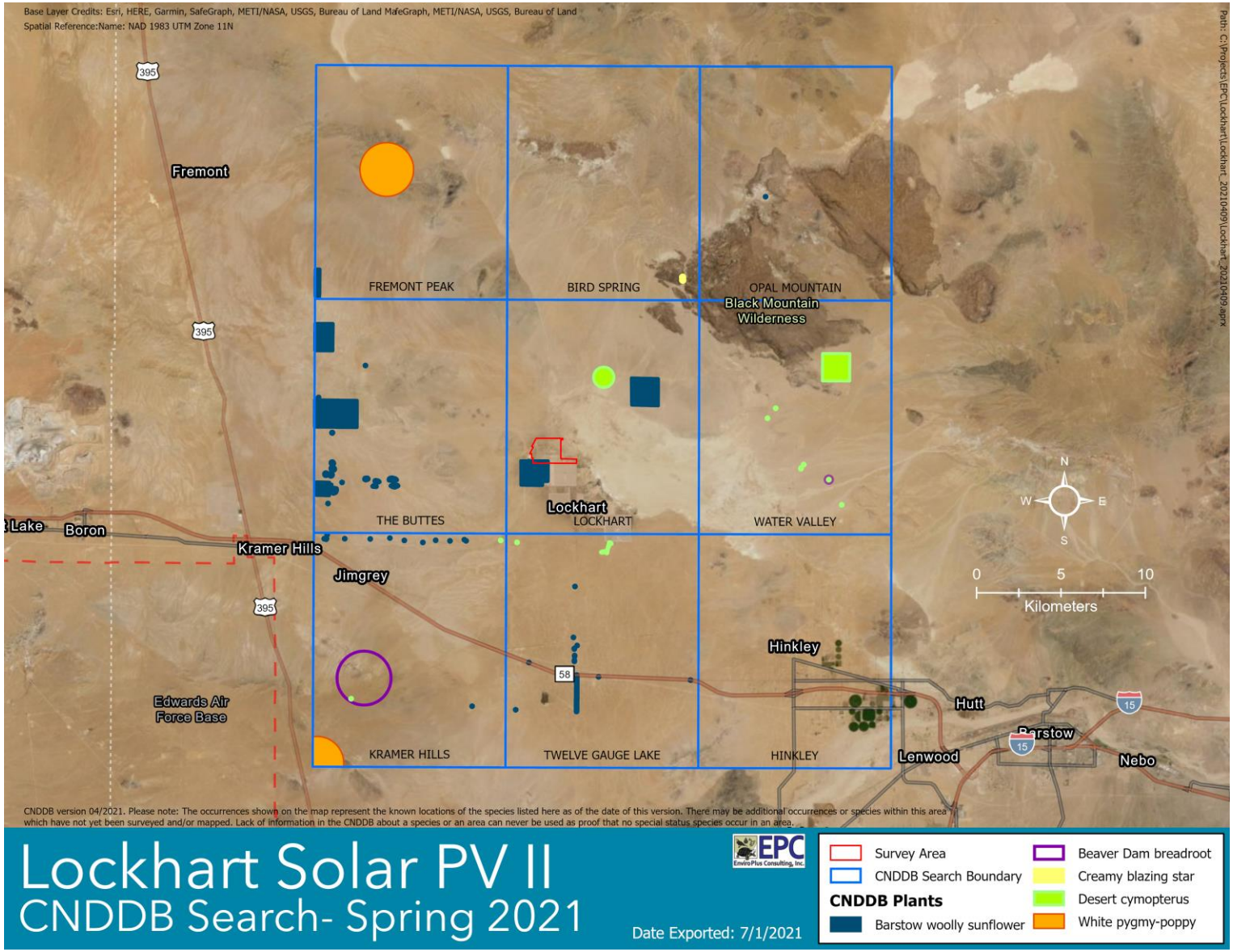

Figure 3-1. Special Status Plants, CNDDB Search Results, Lockhart Solar PV II

Table 3-1. Special status plant species known to occur in the region and their estimated occurrence potential based on habitat requirements and proximity to Survey Area[1]

Scientific name Common Name Plant Family, Life Form	Rank or Status[2]				Flowering Period	Habitat and Distribution Notes	Occurrence Potential within the Survey Area Prior to Rare Plant Survey
	FEDERAL	STATE	G-RANK/ S-RANK	CRPR			
CRPR 1B							
Cymopterus deserticola desert cymopterus Apiaceae, perennial herb	–	–	G2/S2	1B.2 E	March-May	630-1500 m. Sandy. Joshua tree woodland, Mojavean desert scrub. Known to occur in the Harper Lake basin.	**LOW** – sandy soils occur in the northwest portion of the survey area
Eriophyllum mohavense Barstow woolly sunflower Asteraceae, annual herb	–	–	G2/S2	1B.2 E	March-May	500-950 m. Gravelly, silty, sandy, or clay soils on level or sloping terrain, as well as in low-lying areas. Chenopod scrub, Mojavean scrub, playas. Several occurrences are near the survey area.	**MODERATE** – known occurrences are near the survey area
Mentzelia tridentata creamy blazing star Loasaceae, annual herb	–	–	G3/S3	1B.3 E	March-May	700-1175 m. Rocky, gravelly, sandy. Mojavean desert scrub. One occurrence record northeast of the survey area.	**LIKELY ABSENT** – preferred substrates may be absent from survey area
Pediomelum castoreum Beaver Dam breadroot Fabaceae, perennial herb	–	–	G3/S2	1B.2	April-May	610-1525 m. Sandy, washes and roadcuts. Joshua tree woodland, Mojavean scrub. Known to occur east and southwest of the survey area.	**LOW** – sandy soils occur in the northwest portion of the survey area
CRPR 4							
Canbya candida white pygmy-poppy Papaveraceae, annual herb	–	–	G3G4/ S3S4	4.2 E	March-June	600-1460 m. Gravelly, sandy, granitic. Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. Known from near Kramer Hills and Fremont Peak.	**VERY LOW** – sandy soils occur in the northwest portion of the survey area
Chorizanthe spinosa Mojave spineflower Polygonaceae, annual herb	–	–	G4/S4	4.2 E	March-July	6-1300 m. Sometimes alkaline. Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, playas. Known to occur in surrounding areas.	**HIGH** – survey area contains potential habitat; known to occur nearby
Lycium torreyi Torrey's box-thorn Solanaceae, shrub	–	–	G4G5/ S3	4.2	March-June	-50-1220 m. Sandy, rocky, washes, streambanks, desert valleys. Mojavean desert scrub, Sonoran desert scrub. Old occurrence records from near Kramer Junction and Barstow.	**VERY LOW** – habitat likely does not occur within the survey area

Scientific name Common Name Plant Family, Life Form	Rank or Status[2]				Flowering Period	Habitat and Distribution Notes	Occurrence Potential within the Survey Area Prior to Rare Plant Survey
	FEDERAL	STATE	G-RANK/ S-RANK	CRPR			
Muilla coronata crowned muilla Themidaceae, perennial bulbiferous herb	–	–	G3/S3	4.2	March-April	670-1960 m. Chenopod scrub, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. Known to occur east of the survey area.	**LOW** – survey area contains potential habitat

[1] Information taken from the California Natural Diversity Database (CNDDB) reports (CNNDB 2021a); rank or status data checked in California Native Plant Society (CNPS 2021).

[2] Rank or status abbreviations:

Federal listings under the Endangered Species: E=Endangered; T=Threatened; – = not listed or proposed for listing (FWS 2021).

State listings under California Endangered Species Act: E=Endangered; T=Threatened; R=Rare; – = not listed or proposed for listing (CNDDB 2021c)c.

G-Ranks (Global Ranks): GX=presumed extinct; GH; possibly extinct; G1=critically imperiled; G2=imperiled; G3=vulnerable; G4=apparently secure; G5=secure; GNR=not ranked. Uncertainty about the rank of an element is expressed in two major ways: 1) by expressing the rank as a range of values: e.g., G2G3 means the rank is somewhere between G2 and G3; and 2) by adding a "?" to the rank: e.g., G2? This represents more certainty than G2G3, but less than G2 (CNDDB 2021b, CNPS 2021).

S-Ranks: SX=presumed extinct; SH=possibly extirpated; S1= critically imperiled; S2= imperiled; S3= vulnerable; S4= apparently secure; S5= secure; SNR=not ranked. Uncertainty about the rank of an element is expressed in two major ways: 1) by expressing the rank as a range of values: e.g., S2S3 means the rank is somewhere between S2 and S3; and 2) by adding a "?" to the rank: e.g., S2? This represents more certainty than S2S3, but less than S2 (CNDDB 2021b, CNPS 2021).

CRPR (California Rare Plant Rank): 1A=plants presumed extirpated in California and either rare or extinct elsewhere; 1B=plants rare or endangered in California and elsewhere; 2A=plants presumed extirpated in California but more common elsewhere; 2B=plants rare or endangered in California but more common elsewhere; 3=plants about which more information is needed – a review list; and 4=plants of limited distribution – a watch list. The number following Rank is the Threat Code: .1=seriously threatened in California; .2=moderately threatened in California; .3=not very threatened in California. Plants with an "E" are endemic to California (CNPS 2021).

Creamy Blazing Star (*Mentzelia tridentata*). Creamy blazing star, a CRPR 1B plant, is an annual with conspicuous white to pale yellow flowers that are 9-18 mm wide and fruit that is 5-8 mm wide, erect or reflexed. Flower bracts are green, anther stalks are generally greater than the filament lobes, and the barrel-shaped seeds are widest at middle, distinguishing this species from other, similar-looking ones (Baldwin et al. 2012). Blooming from March through May, it occurs on sandy, gravelly, and rocky substrates in creosote bush scrub at an elevation of 700-1175 m AMSL (CNPS 2021). It is known to occur in the central Mojave Desert. There is one occurrence record northeast of the survey area near Black Mountain.

Beaver Dam Breadroot (*Pediomelum castoreum*). Beaver Dam breadroot is a deep-rooted perennial herb in the pea family. It has palmately and subpalmately compound leaves that emerge from near the base of the plant. Leaflets number 5 or 6. Stipules at the of plant are fused and 5-13.5 mm long. Petiole measures 6.8-15 cm. Corolla is partly blue to purple; banner measures 9-13 mm. Fruit is ovate to elliptic in outline; body is 6-8 mm and beak is triangular, measures 8-11 mm, and is straight to curved. Seeds are gray, kidney-shaped, and ridged (Baldwin et al. 2012). It occurs in sandy open areas, washes, and roadcuts. This species is possibly threatened by vehicles and road widening projects. There are occurrence records in the Kramer Hills and in the Harper Lake basin (Figure 3-1) (CNPS 2021).

White Pygmy-Poppy (*Canbya candida*). The white pygmy-poppy is a diminutive, tufted, hairless annual that grows 10-30 mm tall. Its basal leaves are fleshy and linear-oblong. Each flower has six separate petals that are ovate and white. The fruit is a small capsule with tiny brown seeds. Flowering occurs from April to May/June (Baldwin et al. 2012). It grows on sandy soil from 600 to 1,200 m AMSL in creosote-bush scrub, saltbush scrub, Joshua tree woodland, and pinyon-juniper woodland. It tends to be encountered in sandy wash areas where the mountains reach the desert floor. This plant is CRPR 4, a watch list that includes plants of limited distribution. Endemic to California, white pygmy-poppy populations have been found in Inyo, Kern, Los Angeles and San Bernardino Counties (CNPS 2021). The nearest known populations are northwest and southwest of the survey area (Figure 3-1). Although it is not considered threatened at this time, it has been placed on a watch list because of its tiny size and limited range. The survey area likely has no habitat for this species.

Mojave Spineflower (*Chorizanthe spinosa*). Mojave spineflower is a CRPR 4 species. It is an annual and member of the buckwheat family. It grows 3-40 cm tall: stems are prostate to ascending, with oblong leaves that can vary from 3-20 mm in length. Bracts of the inflorescence are usually 3 per node and lanceolate. The involucral tube is 2-2.5 mm, urn shaped, with one of five bracts longer than the others. Its white flowers are generally hairless, and the seeds are black. It blooms from April through July at elevations ranging from 600-1,300 m AMSL (Baldwin et al. 2012). Because of its stout stems and involucres, Mojave spineflower skeletal remains persist in the environment long after the flowering period. This species is endemic to California and is known from Rabbit Springs in Lucerne Valley, San Bernardino County, northwest to Red Rock Canyon, Kern County. It was once considered a rare plant before thousands of plants were reported from Rosamond to Boron, Kern County. It prefers sandy areas or low-lying open soils with fine gravels in desert scrub plant communities. Threats to the spineflower include surface mining, energy development, vehicles, and grazing (Charlton 1992, CNPS 2021). It is expected to occur within the survey area.

Torrey's Box-thorn (*Lycium torreyi*). In the nightshade family, Torrey's box-thorn is a 1-4 m

tall, glabrous shrub. Its twigs are slender and not or less climbing. Leaves are narrowly oblanceolate to obovate. The five-lobed calyx is 2.5-4.5 mm. The corolla is 8-15 mm, narrowly funnel-shaped, and green-lavender or whitish. Lobes of corolla are 3-4 mm and lanceolate to ovate. Stamens are more or less exerted and attached at the middle of the tube. The fruit is 6-10 mm and is orange or red (Baldwin et al. 2012). This box-thorn occurs in washes and streambanks in Mojavean and Sonoran desert scrubs. Possible threats to the species include solar development. Historic populations are known from Kramer Junction and Barstow (CNPS 2021). Habitat for this species likely does not occur within the survey area. Being a shrub, it can be detectable during the survey.

Crowned Muilla (*Muilla coronata*). Crowned muilla is a diminutive monocot, approximately 3-5 cm tall, in the brodiaea family. Its perianth is whitish to bluish with a green abaxial midvein. Stamens are 2-4 mm; filaments are dilated throughout with wide, overlapping margins forming the nectar tube with cylindric crown (Baldwin et al. 2012). It occurs in open desert scrub and woodland from 670-1960 m AMSL in elevation. A CRPR 4 plant, it occurs in scattered locations throughout the Mojave Desert, including near Kramer Junction, west of the survey area (CNPS 2021). Crowned muilla has a low potential to occur within the survey area.

The only plant protected by the CDNPA that is expected to occur within the survey area is silver cholla (*Cylindropuntia echinocarpa*). This plant is fairly common in the Mojave Desert. Finally, two sensitive natural communities (CDFW 2020), spinescale scrub (*Atriplex spinifera*) and bush seepweed (*Suaeda nigra*) were identified on the DRECP Data Basin (Dudek 2014) as occurring in or near the survey area.

3.2 RARE PLANT SURVEY

3.2.1 REFERENCE SITE VISITS

Prior to the rare plant survey, the field crew visited reference sites for the four potentially occurring CRPR 1B plants. On March 24, 2021, the field crew searched for desert cymopterus (CYDE) and Barstow woolly sunflower (ERMO) in the Project vicinity, including CYDE CNDDB Occurrence Records #17, #69, and #86 on the north and east sides of Harper Lake; and ERMO CNDDB Occurrence Record #14 on the north side of Harper Lake. Very dry conditions prevailed at all sites. No annual or perennial herbs were detected. On March 31, 2021, the field crew searched for CYDE at CNDDB Occurrence #88 location east of Harper Lake; Beaver Dam breadroot at CNDDB Occurrence #23 location east of Harper Lake; creamy blazing star at CNDDB Occurrence #20 location northeast of the survey area; and ERMO at several known locations along Harper Lake Road, south of the survey area. Again, the conditions at all of these sites were very dry with no annual or perennial herbs present. Total precipitation for the water year prior to the survey (October 1, 2020 to April 1, 2021) at Barstow, California was 0.57 inch. In comparison, the mean annual precipitation in Barstow for 18 years between 2002 to 2020 is 4.73 inches (National Oceanic & Atmospheric Administration [NOAA] 2021).

From these reference site visits, the field crew determined that none of the CRPR 1B plants or any of the CRPR 4 plants, with one exception, would be detectable in 2021. Because Mojave spineflower is a stout annual, dried material (i.e., skeletons) from the previous growing season could be detectable.

3.2.2 FLORA

Plants identified during the rare plant survey totaled 46 taxa in 16 plant families (Appendix A). There were 36 native taxa, nine non-native weedy plants, and one non-native ornamental. The annual herbs recorded during the survey may not accurately represent the complete flora of the survey area due to below average precipitation during the previous fall and winter.

3.2.3 RARE PLANTS

One rare plant species was encountered within the survey area during the survey. This species was Mojave spineflower, a CRPR 4 plant. Point and polygon data for this species are mapped in Figure 3-2. An estimated 4,700 Mojave spineflower skeletons were recorded in four polygons and at four points measuring approximately 0.65 acres in the eastern and northern portions of the survey area (Figure 3-2). Mojave spineflowers were on alkali flats with silty sand, in both spinescale scrub (*Atriplex spinifera* Shrubland Alliance) and allscale scrub (*Atriplex polycarpa* Shrubland Alliance). Annual species identified in these areas included yellow peppergrass (*Lepidium flavum*), snake's-head (*Malacothrix coulteri*), and red-stemmed filaree (*Erodium cicutarium*). Photographs are provided in Appendix B.

Barstow woolly sunflower was previously reported in the southwestern portion of the survey area in 1989 (CNDDB 2021a). This area was subsequently disturbed during partial construction of the SEGS X solar thermal power facility. Under the existing conditions of the survey area, Barstow woolly sunflower is not likely to occur. The occurrence of other rare plants within the survey area is also highly unlikely. There were no substrates (i.e., sand, gravel, rock) that were appropriate for desert cymopterus, Beaver Dam breadroot, creamy blazing star, white pygmy-poppy, or Torrey's box-thorn. Crowned muilla is known to occur in sandy and silty soils, but this species is unlikely to occur in the alkaline soils that exist within the survey area.

3.2.4 CDNPA PLANTS

Only one CDNPA plant, a silver cholla (*Cylindropuntia echinocarpa*), was recorded within the survey area (Figure 3-2). The location coordinates (Universal Transverse Mercator, Zone 11 S, World Geodetic System 1984) are provided below:

Species	Easting	Northing	Elevation
Cylindropuntia echinocarpa	467624	3878560	2,014 feet

3.2.5 NATURAL COMMUNITIES

Four natural communities were identified within the survey area during the Biological Resources Survey conducted by Michael Baker International in February 2020 and March 2021, and include allscale scrub (*Atriplex polycarpa* Shrubland Alliance), spinescale scrub (*Atriplex spinifera* Shrubland Alliance), disturbed allscale scrub, and tamarisk (*Tamarix* sp.) thickets (see Section 5, Michael Baker International 2021).

Spinescale scrub is a sensitive natural community (CDFW 2020). It encompassed 47.48 acres within the survey area. Generally, spinescale scrub is found between 164 and 2,624 ft AMSL in elevation on alluvial fans and on old lake beds perched above current drainages. Soils are moderately sandy clay loams to fine, silty clays that may be carbonate rich (Sawyer et al. 2009). Other shrubs were few but included allscale and bush seepweed. This habitat ranges from the

Antelope Valley to the Northern Mojave region and east to the Barstow area. It is especially concentrated around dry lakebeds and in the Kramer Junction area (Menke et al. 2013).

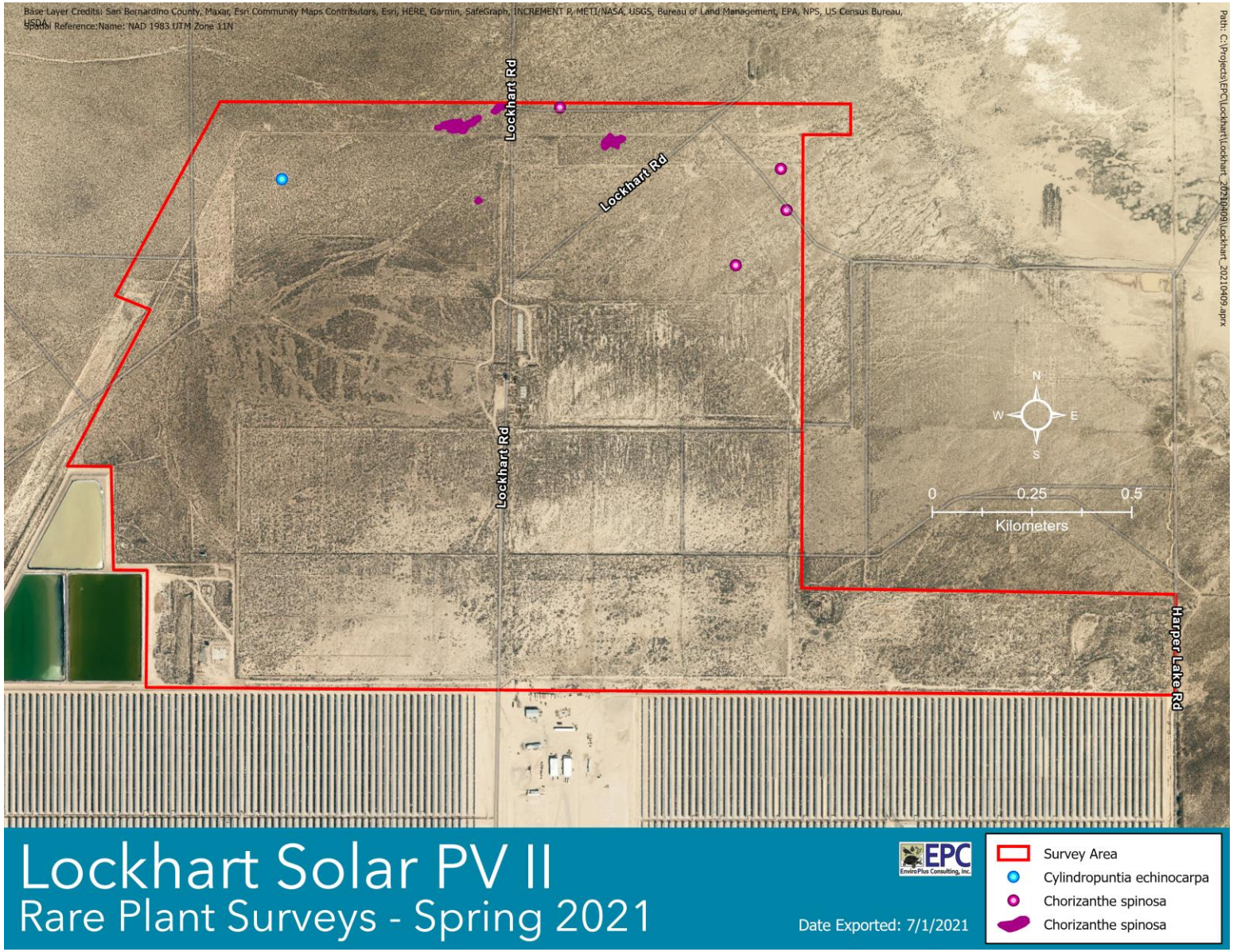

Figure 3-2. Special Status Plant Locations, Lockhart Solar PV II

4. DISCUSSION

The survey documented the occurrence of Mojave spineflower, a CRPR 4 (i.e., a watch list) species. This species is endemic to California, tends to be fairly common where it occurs, but its distribution is limited. The survey also concluded that the presence of other rare species is highly unlikely. However, because of the existing drought conditions in the survey area during the time of the rare plant survey, the survey could not determine the presence or absence of all other potentially occurring rare plants and could not fully document the flora within the survey area. Therefore, additional surveys may be required in a year with sufficient fall and winter precipitation to germinate any potentially occurring species and verify that no other rare plant species occur within the survey area and meet the requirements for a complete protocol-level survey (CDFW 2018).

5. CONCLUSIONS AND RECOMMENDATIONS

Implementation of the Project may result in impacts to special status plants and sensitive natural communities including Mojave spineflower, a special status plant, and spinescale scrub, a sensitive natural community. In addition, the Project has the potential to result in impacts to desert cymopterus, Barstow woolly sunflower, white pygmy-poppy, Beaver Dam breadroot, and crowned muilla.

Construction activities would involve site grading, mowing, excavation, pile-driving, and other soil-disturbing activities. Short-term impacts to vegetation would result from the removal or alteration of physical habitats that can be re-vegetated and reclaimed after Project decommissioning. The removal or alteration of native and non-native habitats within the Project Site could result in the temporary or permanent displacement of plants and habitat.

The following avoidance and minimization measures are recommended to reduce potential impacts to special-status plant species:

1. Prior to construction, a qualified botanist shall conduct a pre-construction rare plant survey within the Project Site, particularly focusing on areas with suitable habitat to support special-status plant species. The survey shall be floristic in nature (i.e., identifying all plant species to the taxonomic level necessary to determine rarity), and shall be inclusive of, at a minimum, areas proposed for disturbance.
2. If individual or populations of special-status plant species are found along the edges of areas that are proposed for disturbance, measures to avoid and minimize impacts to these plants, including but not limited to flagging and/or fencing, shall be recommended and implemented, as appropriate.
3. If State- and/or Federally-listed plant species are present and avoidance is infeasible, consultation with the requisite resource agency is recommended.

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APPENDIX A
Plant List

FAMILY SCIENTIFIC NAME	COMMON NAME	HABIT
EUDICOT FLOWERING PLANTS		
ASTERACEAE	**SUNFLOWER FAMILY**	
Ambrosia dumosa	burro bush	shrub
Chaenactis fremontii	Fremont pincushion	annual herb
Ericameria nauseosa	rubber rabbitbrush	shrub
Leptosyne bigelovii	Bigelow tickseed	annual herb
Malacothrix coulteri	snake's-head	annual herb
Malacothrix glabrata	desert dandelion	annual herb
Stephanomeria pauciflora	wire-lettuce	perennial herb/subshrub
BORAGINACEAE	**BORAGE FAMILY**	
Amsinckia sp.	fiddleneck	annual herb
Cryptantha angustifolia	narrow-leaved cryptantha	annual herb
Cryptantha circumscissa var. *circumscissa*	capped cryptantha	annual herb
Cryptantha micrantha var. *micrantha*	red-root cryptantha	annual herb
Cryptantha sp.	cryptantha	annual herb
Heliotropium curassavicum var. *oculatum*	alkali heliotrope	perennial herb
Phacelia fremontii	yellowthroats	annual herb
BRASSICACEAE	**MUSTARD FAMILY**	
Caulanthus lasiophyllus	California mustard	annual herb
Descurainia pinnata	western tansy-mustard	annual herb
Descurainia sophia[3]	flixweed	annual herb
Lepidium flavum	yellow peppergrass	annual herb
Sisymbrium irio[3]	London rocket	annual herb
CACTACEAE	**CACTUS FAMILY**	
Cylindropuntia echinocarpa[2]	silver cholla	perennial stem succulent
CHENOPODIACEAE	**GOOSEFOOT FAMILY**	
Atriplex polycarpa	allscale	shrub
Atriplex spinifera	spinescale, spiny saltbush	shrub
Bassia hyssopifolia[3]	bassia	annual herb
Chenopodium sp.	goosefoot	annual herb
Grayia spinosa	spiny hope-sage	shrub
Krascheninnikovia lanata	winter fat	shrub
Salsola sp.[3]	Russian-thistle	annual herb
Suaeda nigra	bush seepweed	subshrub/shrub
EUPHORBIACEAE	**SPURGE FAMILY**	
Croton setigerus	turkey-mullein	annual herb
FABACEAE	**LEGUME FAMILY**	
Lupinus odoratus	Mojave lupine	annual herb
GERANIACEAE	**GERANIUM FAMILY**	
Erodium cicutarium[3]	red-stemmed filaree	annual herb
LOASACEAE	**LOASA FAMILY**	
Mentzelia sp.	blazing star	annual herb
MALVACEAE	**MYRTLE FAMILY**	
Sphaeralcea ambigua var. *ambigua*	apricot mallow	subshrub
ONAGACEAE	**EVENING PRIMROSE FAMILY**	
Chylismia claviformis	brown-eyed evening-primrose	annual herb
Eremothera boothii ssp. *desertorum*	dwarf evening-primrose	annual herb

FAMILY SCIENTIFIC NAME	COMMON NAME	HABIT
POLEMONIACEAE	**PHLOX FAMILY**	
Gilia sp.	gilia	annual herb
POLYGONACEAE	**BUCKWHEAT FAMILY**	
Chorizanthe spinosa[1]	Mojave spineflower	annual herb
Eriogonum gracillimum	rose-and-white wild buckwheat	annual herb
SOLANACEAE	**NIGHTSHADE FAMILY**	
Lycium andersonii	desert tomato	shrub
Lycium cooperi	box-thorn	shrub
TAMARICACEAE	**TAMARISK FAMILY**	
Tamarix ramosissima[4]	saltcedar	tree
MONOCOT FLOWERING PLANTS		
POACEAE	**GRASS FAMILY**	
Bromus madritensis ssp. *rubens*[3]	red brome, foxtail chess	annual grass
Bromus tectorum[3]	cheatgrass	annual grass
Hordeum sp.[3]	wild barley	annual grass
Schismus sp.[3]	Arabian grass	annual grass
Stipa hymenoides	sand rice grass	perennial grass

[1] special status species
[2] CDNPA species
[3] non-native weed
[4] non-native ornamental

APPENDIX B
Photographs

FAMILY SCIENTIFIC NAME	COMMON NAME	HABIT
EUDICOT FLOWERING PLANTS		
ASTERACEAE	**SUNFLOWER FAMILY**	
Ambrosia dumosa	burro bush	shrub
Chaenactis fremontii	Fremont pincushion	annual herb
Ericameria nauseosa	rubber rabbitbrush	shrub
Leptosyne bigelovii	Bigelow tickseed	annual herb
Malacothrix coulteri	snake's-head	annual herb
Malacothrix glabrata	desert dandelion	annual herb
Stephanomeria pauciflora	wire-lettuce	perennial herb/subshrub
BORAGINACEAE	**BORAGE FAMILY**	
Amsinckia sp.	fiddleneck	annual herb
Cryptantha angustifolia	narrow-leaved cryptantha	annual herb
Cryptantha circumscissa var. *circumscissa*	capped cryptantha	annual herb
Cryptantha micrantha var. *micrantha*	red-root cryptantha	annual herb
Cryptantha sp.	cryptantha	annual herb
Heliotropium curassavicum var. *oculatum*	alkali heliotrope	perennial herb
Phacelia fremontii	yellowthroats	annual herb
BRASSICACEAE	**MUSTARD FAMILY**	
Caulanthus lasiophyllus	California mustard	annual herb
Descurainia pinnata	western tansy-mustard	annual herb
Descurainia sophia[3]	flixweed	annual herb
Lepidium flavum	yellow peppergrass	annual herb
Sisymbrium irio[3]	London rocket	annual herb
CACTACEAE	**CACTUS FAMILY**	
Cylindropuntia echinocarpa[2]	silver cholla	perennial stem succulent
CHENOPODIACEAE	**GOOSEFOOT FAMILY**	
Atriplex polycarpa	allscale	shrub
Atriplex spinifera	spinescale, spiny saltbush	shrub
Bassia hyssopifolia[3]	bassia	annual herb
Chenopodium sp.	goosefoot	annual herb
Grayia spinosa	spiny hope-sage	shrub
Krascheninnikovia lanata	winter fat	shrub
Salsola sp.[3]	Russian-thistle	annual herb
Suaeda nigra	bush seepweed	subshrub/shrub
EUPHORBIACEAE	**SPURGE FAMILY**	
Croton setigerus	turkey-mullein	annual herb
FABACEAE	**LEGUME FAMILY**	
Lupinus odoratus	Mojave lupine	annual herb
GERANIACEAE	**GERANIUM FAMILY**	
Erodium cicutarium[3]	red-stemmed filaree	annual herb
LOASACEAE	**LOASA FAMILY**	
Mentzelia sp.	blazing star	annual herb
MALVACEAE	**MYRTLE FAMILY**	
Sphaeralcea ambigua var. *ambigua*	apricot mallow	subshrub
ONAGACEAE	**EVENING PRIMROSE FAMILY**	
Chylismia claviformis	brown-eyed evening-primrose	annual herb
Eremothera boothii ssp. *desertorum*	dwarf evening-primrose	annual herb

FAMILY SCIENTIFIC NAME	COMMON NAME	HABIT
POLEMONIACEAE	**PHLOX FAMILY**	
Gilia sp.	gilia	annual herb
POLYGONACEAE	**BUCKWHEAT FAMILY**	
Chorizanthe spinosa[1]	Mojave spineflower	annual herb
Eriogonum gracillimum	rose-and-white wild buckwheat	annual herb
SOLANACEAE	**NIGHTSHADE FAMILY**	
Lycium andersonii	desert tomato	shrub
Lycium cooperi	box-thorn	shrub
TAMARICACEAE	**TAMARISK FAMILY**	
Tamarix ramosissima[4]	saltcedar	tree
MONOCOT FLOWERING PLANTS		
POACEAE	**GRASS FAMILY**	
Bromus madritensis ssp. *rubens*[3]	red brome, foxtail chess	annual grass
Bromus tectorum[3]	cheatgrass	annual grass
Hordeum sp.[3]	wild barley	annual grass
Schismus sp.[3]	Arabian grass	annual grass
Stipa hymenoides	sand rice grass	perennial grass

[1] special status species
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[3] non-native weed
[4] non-native ornamental

APPENDIX B
Photographs

Chorizanthe spinosa in Spinescale Scrub

Chorizanthe spinosa in Spinescale Scrub

Chorizanthe spinosa detail

Appendix E Desert Tortoise Focused Survey Results (2020)

Michael Baker
INTERNATIONAL

We Make a Difference

October 15, 2021[1] 177424

Lockhart Solar PV II, LLC
Contact: Simon Day
11455 El Camino Real, Suite 160
San Diego, California 92130
Phone: (415) 404-0807

SUBJECT: Results of Desert Tortoise Focused Surveys for the Lockhart Solar PV II Project– San Bernardino County, California

Dear Mr. Day:

Michael Baker International (Michael Baker) is pleased to submit this report to Terra-Gen, LLC (Terra-Gen) documenting the results of focused desert tortoise (*Gopherus agassizii*; DETO) surveys conducted for the Lockhart Solar PV II Project (Project or Project Site) located in the former town of Lockhart, San Bernardino County, California. Surveys occurred during the 2020 field season, when Michael Baker was contracted by Terra-Gen to perform DETO surveys on approximately 607 acres of desert scrub habitat in the Mojave Desert.

Project Location

The Project Site is located in unincorporated Hinkley, California, generally located north of State Route 58, east of State Route 395, south of the Gravel Hills, and west of Harper Dry Lake in San Bernardino County, California (refer to Figure 1, *Regional Vicinity*, in Attachment A). The Project Site is depicted in Sections 13 and 24 of Township 11 North, Range 5 West, and Sections 18 and 19 of Township 11 North, Range 4 West on the U.S. Geological Survey's (USGS) *Lockhart, California* 7.5-minute quadrangle. Specifically, the Project Site is bounded by Hoffman Road to the west, Harper Lake Road to the east, and the existing solar fields to the south. It is bisected from north to south by Lockhart Ranch Road (refer to Figure 2, *Project Site*, in Attachment A).

Project Description

Lockhart Solar PV II, LLC (Applicant) proposes to develop the Lockhart Solar PV II Project (Project), a utility scale, solar photovoltaic (PV) electricity generation and energy storage facility that would produce up to 150 megawatts (MW) of solar power and include up to 4 gigawatt hours (GWh) of energy storage capacity rate in a battery energy storage system (BESS) within the approximately 755-acre Project Site. The Project is located within the County of San Bernardino (County) and is largely sited on land previously approved by the California Energy Commission (CEC) for development of Solar Energy Generating System (SEGS) X, a solar thermal power facility which was never fully constructed. The Project is bordered on the

[1] This report was originally written in 2020, but the date has been updated to reflect contemporary changes in the Project description and to match contemporary Project stylistic preferences. No changes have been made to the fundamental survey methodology or the survey findings.

south by the approved Lockhart Solar I Facility and the existing SEGS VIII and IX Solar Thermal Plants. The Project would share existing operations and maintenance (O&M) facilities with the Lockhart Solar I Facility (i.e., O&M building, warehouse and employee building), water and septic systems, switchyard and electrical transmission infrastructure, and a new collector substation (approved and to be constructed) within the approximately 110-acre "Shared Facilities Area" to connect the Project to the existing transmission line which runs to the Southern California Edison (SCE)-owned Kramer Junction substation.

Project Background

During the early 1990s, construction of the SEGS X solar thermal facility was initiated on the Project Site. SEGS X was part of a series of three solar thermal power plants certified by the CEC which were to be built adjacent to each other in order to share supporting facilities. SEGS X was fully permitted and certified as an 80 MW solar thermal facility. Approximately 600 acres were identified for the SEGS X power plant including land for associated facilities to be shared with the two adjacent solar thermal power plants (SEGS VIII and IX). Per the SEGS IX and X CEC certification, permanent impacts to loss of the then-existing high-quality habitats were mitigated through purchase of 1,680 acres of conservation land at a 5 to 1 ratio for both Mohave ground squirrel and desert tortoise, pursuant to the California Department of Fish and Game (CDFG), now known as the California Department of Fish and Wildlife (CDFW), requirements and approvals. All of these mitigation lands were protected even though the SEGS X Facility was never fully constructed.

In 1991, the SEGS X owner was unable to continue construction due to lack of financing and construction was halted. Prior to work stoppage, several concrete foundations for the power block as well as concrete foundations for solar racking had been installed in portions of the Project Site. The Project proposes to use these already disturbed parcels to construct a solar PV and BESS facility.

Project Overview and Design

As stated above, the Project includes the development of solar PV facilities, BESS, and associated infrastructure with the capacity to generate up to 150 MW of solar energy and up to 4 GWh of energy storage capacity rate. The previously installed SEGS X concrete foundations will be removed if the foundations conflict with installation of Project facilities; they will otherwise be left in place. Concrete from SEGS X foundations would be demolished and exported from the site for proper disposal at a licensed landfill. Previously constructed concrete solar racking piers in the southwest portion of the site will remain in place as newer steel foundation piles can be driven around the old piers further reducing soil disturbance and offsite hauling and landfilling of debris.

Existing O&M buildings, warehouse and the employee building within the approximately 110-acre Shared Facilities Area would be shared by Project operations and Lockhart Solar I operations staff. The Project would also be served by shared, and already approved, water and septic systems within the adjacent Lockhart Solar I Facility site. The Shared Facilities Area includes the already approved BESS for Lockhart Solar I (County permitted), BESS for SEGS IX (CEC permitted), and the BESS for the Project, as these facilities are integral to the collector substation. In addition, the already approved collector substation and the existing switchyard located within the Shared Facilities Area will be upgraded, as necessary, to connect the Project to the existing transmission line which runs to SCE-owned Kramer Junction substation as a shared facility. The Project is subject to conditional use permit (CUP) approval from the County.

Site Grading and Earthwork

Site grading and earthwork activities are expected to include mowing, excavation, and pile-driving. Grading of the Project Site would be limited to the greatest extent possible to control dust. Micro-grading would occur to maintain pile foundation tolerances and grading would be required for installation of site roads and preparation of equipment foundation pads. Solar panels are attached to driven piles and do not require foundation pads.

The Project may require grading for extension of the existing open channel located outside the Project fence line along the western and northern boundary of the Project Site for the collection and routing of offsite run-on. If feasible, this channel may be constructed within the fence line to limit new disturbance associated with Project construction. The channel would redirect flows to be discharged to the existing watershed which drains toward Harper Dry Lake. Site preparation and construction would occur in accordance with all federal, state, and County zoning codes and requirements.

All applicable local, State, and federal requirements and best management practices (BMPs) would be incorporated into Project construction activities. The construction contractor would be required to incorporate BMPs consistent with the County zoning ordinance and with guidelines provided in the California Stormwater Quality Association's Construction Best Management Practice Handbook, including the preparation of a Stormwater Pollution Prevention Plan and a Soil Erosion and Sedimentation Control Plan to reduce potential impacts related to construction of the Project.

Decommissioning

At the end of the Project's operational term, the Applicant may determine that the Project should be decommissioned and deconstructed, or it may seek an extension of its CUP. The Applicant will work with the County to ensure decommissioning of the Project after its productive lifetime complies with all applicable local, State, and federal requirements BMPs.

Site infrastructure would be removed, including fences and concrete pads that may support the inverters, transformers, and related equipment. The exterior fencing and gates would be removed, and materials would be recycled to the extent feasible. Project roads would be restored to their pre-construction condition to the extent feasible unless the landowner elects to retain the improved roads for access throughout the property.

Regulatory Framework

Federal Endangered Species Act of 1973

As defined within the Federal Endangered Species Act of 1973 (FESA), an endangered species is any animal or plant listed by regulation as being in danger of extinction throughout all or a significant portion of its geographical range. A threatened species is any animal or plant that is likely to become endangered within the foreseeable future throughout all or a significant portion of its geographical range. Without a special permit, Federal law prohibits the "take" of any individuals or habitat of Federally-listed species. Under Section 9 of the FESA, take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." The term "harm" has been clarified to include "any act which actually kills or injures fish or wildlife, and emphasizes that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife." Enforcement of FESA is administered by the U.S. Fish and Wildlife Service (USFWS).

Under the definition used by the FESA, "Critical Habitat" refers to specific areas within the geographical

range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species' conservation and if the occupied areas are inadequate to ensure the species' recovery. If a project may result in take or adverse modification to a species' designated Critical Habitat and the project has a Federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a Federal nexus may include projects that occur on Federal lands, require Federal permits (e.g., Clean Water Act Section 404 permit), or receive any Federal oversight or funding. If there is a Federal nexus, then the Federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the FESA.

California Endangered Species Act

In addition to Federal laws, the State of California has its own California Endangered Species Act (CESA), enforced by the CDFW. The CESA program maintains a separate listing of species beyond the FESA, although the provisions of each act are similar.

State-listed threatened and endangered species are protected under provisions of the CESA. Activities that may result in "take" of individuals (defined in CESA as; "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") are regulated by CDFW. Habitat degradation or modification is not included in the definition of "take" under CESA. Nonetheless, CDFW has interpreted "take" to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are protected against take, as defined above, in the absence of incidental take permits.

Species Background

The desert tortoise is currently designated as a State and Federally Threatened species. The Mojave population of the desert tortoise inhabits areas north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, and southwestern Utah, and in the Sonoran Desert in California. Throughout the majority of the Mojave Desert, desert tortoises occur most commonly on gentle sloping soils characterized by an even mix of sand and gravel and sparsely vegetated low-growing vegetation where there is abundant inter-shrub space (USFWS 2008). The typical habitat for this species is creosote bush scrub below approximately 5,500 feet in elevation (USFWS 2008, USFWS 2010). Wildflowers, grasses, and in some cases, cacti make up the bulk of their diet. Some of the more common forbs consumed by desert tortoise include desert dandelion (*Malacothrix glabrata*), primrose (*Camissonia* spp. and *Oenothera* spp.) desert plantain (*Plantago ovata*), milkvetches (*Astragalus* spp.), gilia (*Gilia* spp.), desert marigold (*Baileya multiradiata*), Mojave lupine (*Lupinus odoratus*), phacelia (*Phacelia* spp.), desert wishbone-bush (*Mirabilis laevis*), lotus (*Lotus* spp.), forget-me-nots (*Cryptantha* spp.), goldfields (*Lasthenia californica*),

California coreopsis (*Leptosyne californica*), white-margin sandmat (*Euphorbia albomarginata*), and the introduced red stemmed filaree (*Erodium cicutarium*). The desert tortoise spends 95 percent of its life underground and will opportunistically utilize burrows of various lengths, deep caves, rock and caliche crevices, or overhangs for cover. Therefore, a moderately friable soil is required to allow for burrow construction and ensure that burrows do not collapse.

According to information within CDFW's California Natural Diversity Database (CNDDB), the entire general region that the Project is in is considered to be occupied by DETO, with anywhere from 20 to over 250 individuals estimated per square mile in 1977, although population density has been declining since then due to increased human encroachment and development (CDFW 2020). The CNDDB has thirteen (13) occurrence records for desert tortoise within the Project vicinity, but the nearest specific DETO locations currently available in the CNDDB are two single tortoises found in May 2006 approximately 2.2 and 3.4 miles southeast of the Project Site. In addition, tortoise sign including burrows was observed west of the proposed Project Site during previous surveys in 1988 (CEC 1990). Multiple live tortoises were also historically observed near the survey area. Twenty-two (22) tortoises were observed by a Luz Construction Management engineer after a brief rain in mid-May 1989 while walking along the transmission line route from the SEGS VIII facility to the Kramer Junction substation (CEC 1990).

The Project Site is not located within designated Critical Habitat, but it is located approximately 0.33 mile to the east at its closest point from the Superior-Cronese Unit and approximately 0.33 mile to the south of the Ord-Rodman Unit. The site is not located within a designated Area of Critical Environmental Concern (ACEC) but is approximately 1.2 miles northwest of the Harper Dry Lake ACEC, which was designated to protect the marsh habitat along the western shoreline of the lake as well as the raptor habitat. Finally, the site is not located within a designated Desert Wildlife Management Area (DWMA).

Environmental Setting

The approximately 607-acre survey area is mostly dominated by native vegetation, with small portions composed of disturbed habitat, bare ground, and developments associated with the existing solar facilities. The survey area is bordered by the existing SEGS VIII and IX solar facilities to the south, and relatively undisturbed, undeveloped land to the north, west, and east, with the Harper Dry Lake located approximately 1 mile to the east. Historically, approximately 352 acres of the land in the Project Site was formally under alfalfa cultivation. Some of the historically cultivated acreage that was abandoned many years ago has become revegetated by *Atriplex* spp. and weedy annuals. The 110-acre Shared Facilities Area is located to the south of the southern portion of the survey area and was previously surveyed (Michael Baker International 2018) as part of the permitting effort for the Lockhart Solar I Facility. The Shared Facilities Area is completely barren other than some existing buildings; it does not contain any suitable habitat for DETO and was not resurveyed as part of this effort.

Topography and Soils

The survey area is situated in the southwestern region of the Mojave Desert. The region is known as the "High Desert" due to its approximate elevation of 2,800 feet above mean sea level (amsl). Much of the survey area is relatively flat, with surface elevations varying between approximately 2,070 feet amsl in the southwest corner to approximately 2,030 feet amsl in the northeast corner. In addition, a small topographic depression is located within the southeastern portion of the Project Site.

On-site and adjoining soils were reviewed prior to the field survey using the Web Soil Survey (U.S.

Department of Agriculture 2020). Mapped soils within the survey area include the following:

- Cajon sand, 0 to 2 percent slopes (Map Unit Symbol: 112)
- Cajon loamy sand, loamy substratum, 0 to 2 percent slopes (117)
- Kimberlina loamy fine sand, cool, 0 to 2 percent slopes (137)
- Norob-Halloran complex, 0 to 5 percent slopes (152)
- Victorville Variant Sand (170)

Vegetation Communities

Three (3) terrestrial vegetation communities were identified on-site during the field survey: allscale scrub, shadscale scrub, and tamarisk thickets. Although not located on the Bureau of Land Management (BLM) lands and therefore not subject to any BLM-related regulations or requirements, the dominance of saltbush vegetation in the survey area is due to the fact that it sits within a regional area recognized as an "unusual plant assemblage" due to a high concentration of similar plants within a limited distribution; in this case, the survey area is within the Western Mojave Desert/Desert Saltbush Assemblage (BLM 2019). In addition, two non-vegetative (2) land cover types identified as bare ground and developed were observed on-site.

Allscale Scrub

The survey area is almost entirely comprised of allscale scrub with little change in plant species throughout. The majority of this vegetation community is dominated by allscale saltbush (*Atriplex polycarpa*), with red stemmed filaree, winged comb seed (*Pectocarya penicillata*), western tansy mustard (*Descurainia pinnata*), and California goldfields (*Lasthenia californica*) interspersed between saltbush shrubs. Note that a large portion of the allscale scrub within the survey area was either previously farmed and/or significantly disturbed during partial construction of the SEGS X facility but has since grown back.

Spinescale Scrub

Approximately 47.48 acres of spinescale scrub are located within the survey area. The spinescale scrub on-site is limited to the northeast portion of the survey area. This vegetation community has a similar herbaceous understory to the allscale scrub on-site but is dominated by spinescale saltbush rather than allscale saltbush. Note that the spinescale scrub was not previously farmed but was likely partly disturbed during partial construction of the SEGS X facility.

Tamarisk Thickets

Approximately 0.89 acre of tamarisk thickets are located within the survey area. Tamarisk thickets within the survey area include a small area within and around the topographic depression located within the southeastern portion of the Project Site. This vegetation community is dominated by tamarisk (*Tamarix ramosissima*).

Bare Ground

Approximately 20 acres of bare ground are located within the survey area. This includes areas primarily used as unpaved dirt maintenance roads throughout the survey area.

Developed

Approximately 11.12 acres of developed land are located within the survey area. Developed portions of the

survey area include a small portion of the SEGS VIII and IX solar fields along with infrastructure and facilities associated with said solar fields. Additional developed portions include several concrete structures within the center of the survey area from the previously abandoned construction of the SEGS X solar field. Note that the SEGS X area was previously farmed and the area completely graded during partial construction of the SEGS X facility.

Methods

Literature Review

Prior to conducting the focused survey, Michael Baker performed a detailed literature review and record search of the Project Site, vicinity, and region for DETO records. The literature search included a review of existing biological and focused DETO survey reports from the Project vicinity, as well as records reported in the CNDDB and the USFWS online Critical Habitat Mapper (USFWS 2020).

Reconnaissance Survey/Vegetation Mapping

Michael Baker biologists Tom Millington, Ryan Winkleman, and Stephen Anderson conducted a general reconnaissance survey of the Project Site on February 27, 2020. The reconnaissance survey allowed Michael Baker to map vegetation within the Project Site and confirm on-site habitat suitability for DETO.

Focused Surveys

Michael Baker contacted USFWS senior biologist Scott Hoffmann on May 5, 2020 to confirm the site-specific survey methodology for the focused surveys. Based on guidance from Mr. S. Hoffmann, it was determined that based on the regional population status and historic data for the Project vicinity, the "action area" for the surveys, referred to in this report as the "survey area," would include only the Project Site. According to Mr. S. Hoffmann, the species has undergone severe declines in recent decades in the general Project vicinity, and he stated that he did not expect Michael Baker to find any tortoises or sign of tortoises.

Based on the 607-acre survey area, the quantitative survey method was utilized for the focused surveys. Focused DETO surveys were conducted in spring 2020 in accordance with the guidelines described in the USFWS protocol *Preparing for Any Action that May Occur within the Range of the Mojave Desert Tortoise (Gopherus agassizii*), last updated in 2019 (USFWS 2019). All surveys were conducted by Michael Baker biologists Tom Millington, Ryan Winkleman, Stephen Anderson, and Ashley Spencer on May 11, 12, 14, and 18, 2020 (refer to Table 1, *Survey Dates, Time, and Weather Conditions*).

Table 1: Survey Dates, Time, and Weather Conditions

Date	Time (start/finish)	Weather Conditions	
		Temperature (°F) (start/finish)	Wind Speed (average miles per hour)
May 11, 2020	0836 / 1343	77 / 93	9
May 12, 2020	0753 / 1358	64 / 81	12
May 14, 2020	0742 / 1453	63 / 86	10
May 18, 2020	0804 / 1447	68 / 81	10

Based on the guidelines set forth in the 2019 DETO survey protocol (USFWS 2019), Michael Baker biologists walked a total of 276 transects spaced at 10-meter (approximately 33 feet) intervals, with each biologist walking a roughly straight path on the centerline of the transect (refer to Figure 3, *Survey Transects*, in Attachment A; every 25 transects in Figure 3 are colored red for ease of viewing). Biologists walked at a pace that allowed for careful/detailed observation of the surrounding area to ensure 100 percent visual coverage of all areas that were determined to provide suitable habitat for DETO. Although the DETO survey protocol allows surveys to occur within only a portion of an action area as a representative piece of the whole, within the Western Mojave Recovery Unit this is only allowed where action areas are larger than 3,290 acres. Because this action area is smaller than 3,290 acres, 100 percent coverage was provided. Hand-held mirrors and cell phone screens were used to reflect sunlight into burrows that were found in order to search for any DETO or sign inside the burrows. Figure 4, *Survey Results*, in Attachment A provides the locations of burrows that were found during the focused surveys. All evidence of DETO presence including live or dead DETO, burrows, or sign, that was observed during the survey was recorded on the datasheet provided in the survey protocol and recorded using a Garmin handheld GPS (refer to Attachment B). Burrows, if present, were categorized according to descriptions provided in the *Desert Tortoise (Mojave Population) Field Manual* (USFWS 2009) and listed below:

Burrow Condition Class:

1. Currently active, with desert tortoise or recent desert tortoise sign
2. Good condition, definitely desert tortoise; no evidence of recent use
3. Deteriorated condition which includes collapsed burrows; definitely desert tortoise (please describe)
4. Good condition; possibly desert tortoise (please describe)
5. Deteriorated condition which includes collapsed burrows; possibly desert tortoise (please describe)

Air temperature was measured with a Kestrel at the beginning and end of each transect to monitor temperature changes. Per the survey protocol, temperature readings were taken approximately 5 centimeters above the ground surface in an area of full sun but in the shade of the observer. Although previous guidance has stated that the maximum air temperature during surveys is 104 degrees Fahrenheit (°F), the current 2019 survey protocol states that DETO are most active when air temperature is below 95°F. At no point during the surveys did the temperature reach this high. Photographs were periodically taken during the surveys (refer to Figure 2, *Project Site*, in Attachment A, as well as to Attachment C).

Results

No DETO or carapaces were found during the focused surveys (refer to Figure 4, *Survey Results*, in Attachment A). A total of eleven (11) Class 5 burrows were found dispersed throughout the Project Site, including one (1) on May 12, seven (7) on May 14, and three (3) on May 18. No burrows were found during the May 11 survey. None of these burrows showed any sign of DETO in their vicinity and several were apparently associated with burrow complexes indicative of likely mammal use. None of these burrows showed any indication that they were currently or historically occupied by DETO. Refer to the datasheets provided in Attachment B for additional information on these burrows, and to Photographs 11-21 in Appendix C. Only those datasheets with burrow information are provided in Attachment B.

A total of eighteen (18) wildlife species were observed during the DETO focused surveys including four (4) reptiles, nine (9) birds, and five (5) mammals (Attachment D).

Conclusions and Recommendations

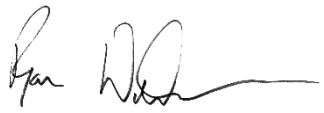
Based on the results of the DETO focused surveys, DETO was determined to be absent on the Project Site. The only potential DETO burrows that were found on the project site were all determined by Michael Baker's biologists to be Class 5 burrows, "deteriorated condition which includes collapsed burrows; possibly desert tortoise." In most cases these burrows were surrounded by other burrows of similar size and shape, indicating a likely mammal burrow complex. No DETO sign or carapaces were found at or near any of the burrows, or anywhere in the entire Project Site.

It should be noted that a chain link fence with associated tortoise exclusion fencing was previously installed during initial construction of the former SEGS X project in 1990 but was damaged in several areas along the fence. Following the negative results of the desert tortoise focused surveys in 2020, the fence was promptly repaired and reinforced, as needed, to prevent tortoises from entering the fenced site in the future. Furthermore, the fence is inspected and maintained by site operation personnel on a regular basis (a minimum of once a week) to ensure it remains intact and effective. Photos showing the existing fencing, including the exclusionary fencing are shown in Attachment C.

These surveys were conducted and this report was prepared in compliance with the current (2019) version of the USFWS DETO survey protocol (USFWS 2019). Surveys followed survey protocol requirements including transect methodology, documentation requirements, and ambient weather conditions. This report should be submitted to the USFWS and CDFW for their review and concurrence with the results.

Please do not hesitate to contact me at (949) 533-0918 or ryan.winkleman@mbakerintl.com or Tom Millington at (949) 246-7004 or tommillington@mbakerintl.com should you have any questions or require further information regarding the information presented in this report.

Sincerely,



Ryan Winkleman
Senior Biologist
Natural Resources & Regulatory Permitting

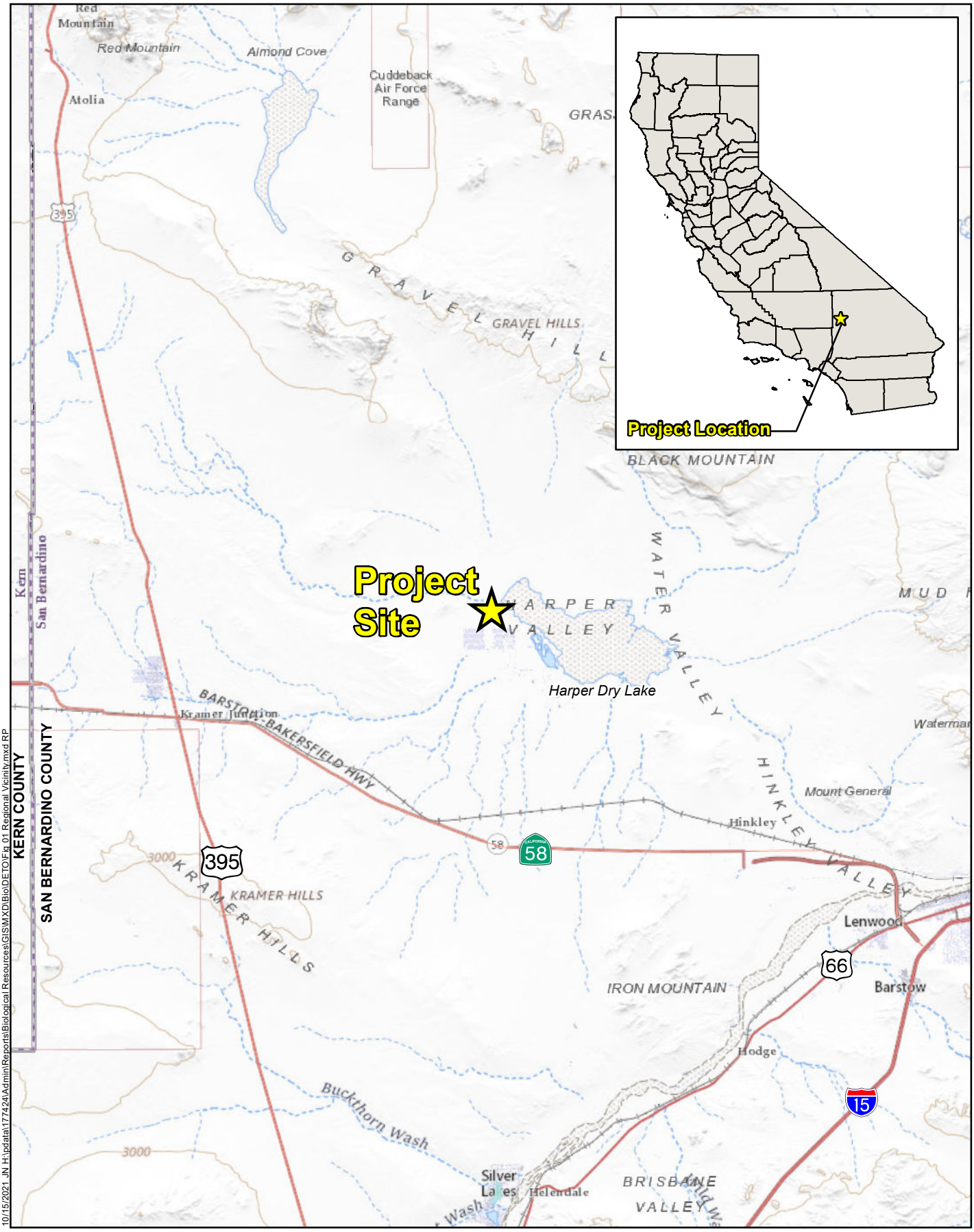
Tom Millington
Senior Biologist
Natural Resources & Regulatory Permitting

Attachments:

A. *Figures*
B. *Datasheets*
C. *Site Photographs*
D. *Wildlife Species Observed List*
E. *References*

Attachment A

Figures



10/15/2021 JN H:\pdata\177424\Admin\Reports\Biological Resources\GIS\MXD\BioIDETOI\Fig 01 Regional Vicinity.mxd RP

Michael Baker INTERNATIONAL

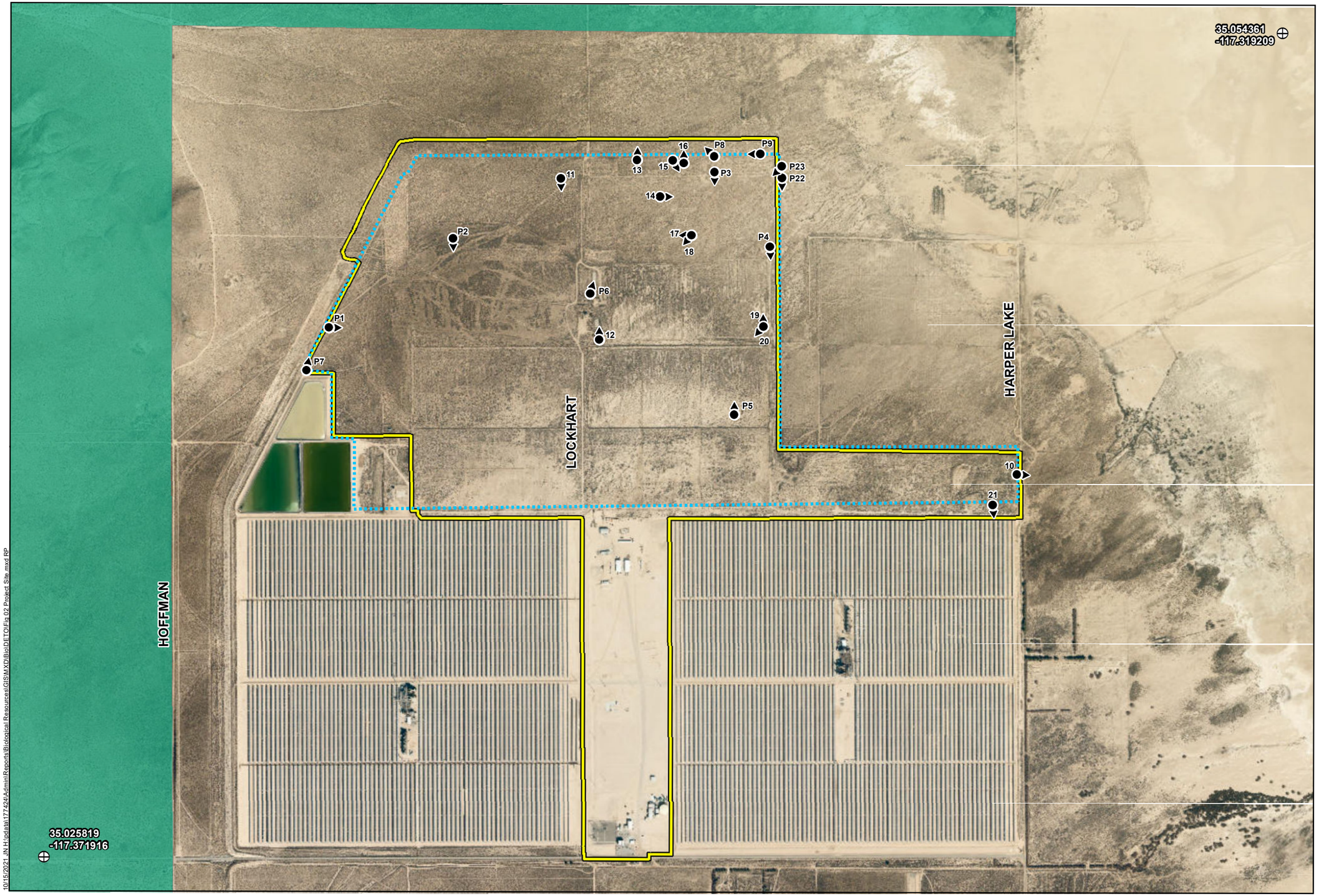
0 2.5 5 Miles

Source: ArcGIS Online, 2018

LOCKHART SOLAR PV II PROJECT
DESERT TORTOISE FOCUSED SURVEY RESULTS

Regional Vicinity

Figure 1



Legend

- Project Site
- Survey Area
- Desert Tortoise (*Gopherus agassizii*) Critical Habitat
- Photograph Point and Direction
- Reference Point

0 600 1,200 Feet

10/15/2021 J:\N H:\data\177424\Admin\Reports\Biological Resources\GIS\MXD\BioIDETOI\Fig 02- Project Site.mxd RP

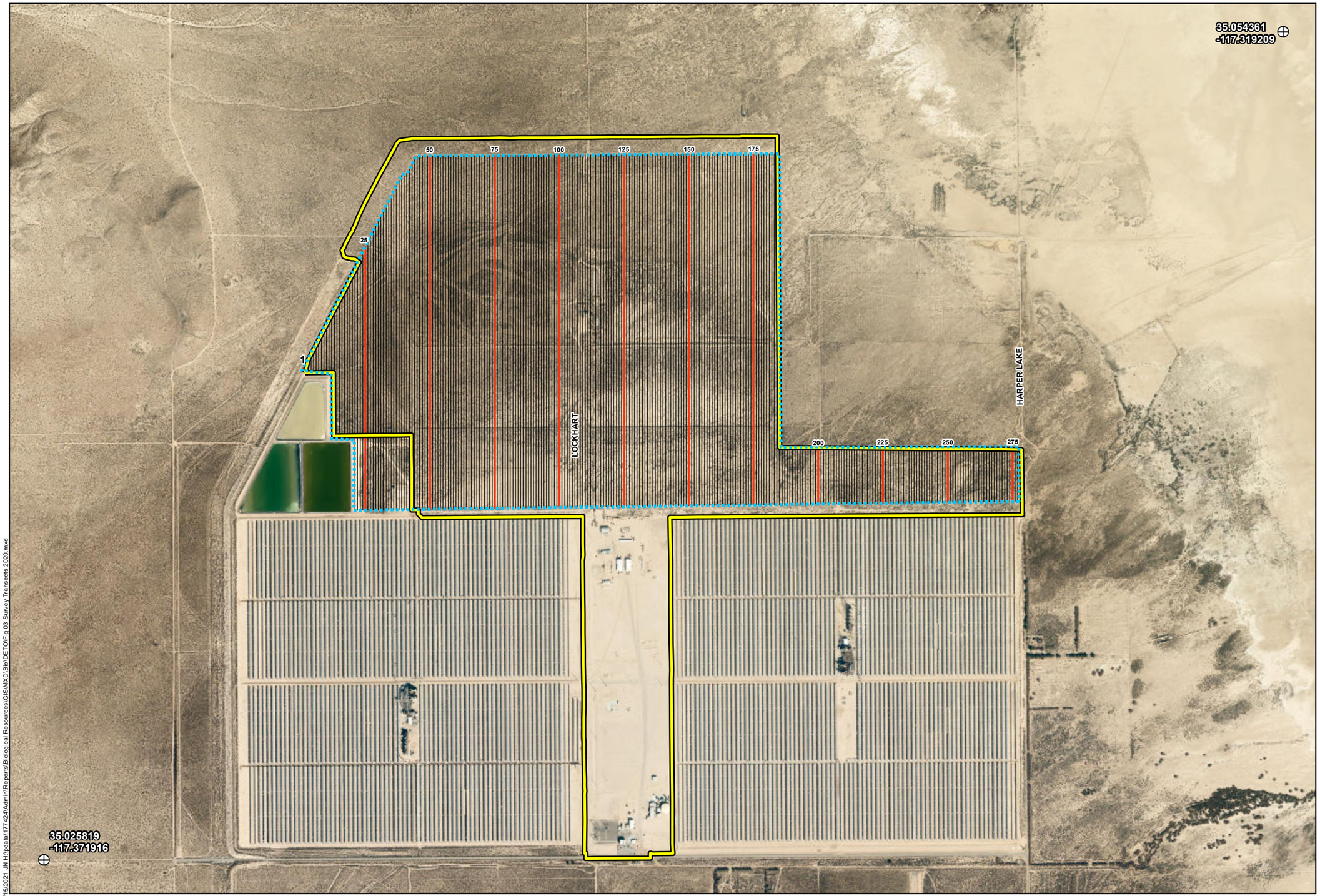
Michael Baker INTERNATIONAL

Source: Esri, 2017, USFWS, 2020

LOCKHART SOLAR PV II PROJECT
DESERT TORTOISE FOCUSED SURVEY RESULTS

Project Site

Figure 2



Legend

- Project Site
- Project Site (Action Area)
- Survey Transects (#)
- Reference_point

10/15/2021 JN H:\pdata\177424\Admin\Reports\Biological Resources\GIS\MXD\BioIDETO\Fig 03 Survey Transects 2020.mxd

Michael Baker INTERNATIONAL

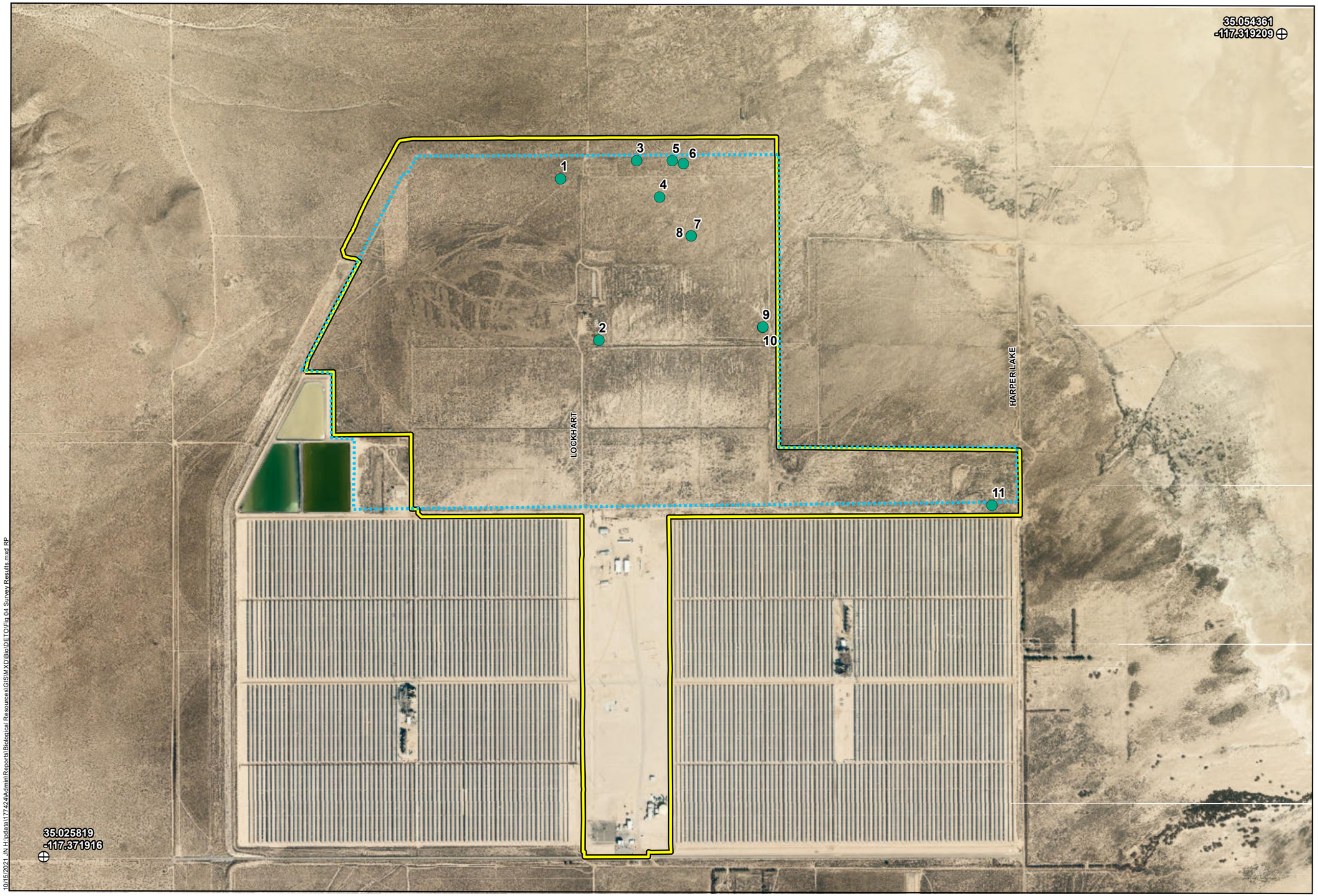
0 600 1,200 Feet

Source:

LOCKHART SOLAR PV II PROJECT
DESERT TORTOISE FOCUSED SURVEY RESULTS

Survey Transects

Figure 3



Legend

- Project Site
- Survey Area
- Class 5 Burrows
- Reference Point

0 600 1,200
Feet

10/15/2021 JN H:\data\177424\Admin\Reports\Biological Resources\GIS\MXD\BioDETOVFig 04 Survey Results.mxd RP

Source: Esri, 2017

Michael Baker INTERNATIONAL

LOCKHART SOLAR PV II PROJECT
DESERT TORTOISE FOCUSED SURVEY RESULTS

Survey Results

Figure 4

Attachment B

Datasheets

Date of Survey: 12-May-20 (day, month, year) Survey Biologist(s): Ryan Winkleman, ryan.winkleman@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project, 607 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.044343, -117.349039 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 607 acres Transect #: 101 Transect Length: 1,362 m

GPS Start-Point: 35.05025, -117.34980, 621 m (easting, northing, elevation in meters) Start Time 1:30 am ☐ pm ☒

GPS End-Point: 35.03797, -117.34990, 627 m (easting, northing, elevation in meters) End Time: 1:58 am ☐ pm ☒

Start Temp: 27 °C End Temp: 27 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	-117.34984	35.04945	Burrow	Class 5. Imperfect half-moon shape. No DT sign anywhere around. Obviously inactive, north-facing burrow with grasses growing at the entrance. Approximately 6" wide. Presence of additional burrows in the immediate vicinity would suggest a mammal complex. Not DT burrow.
2				
3				
4				
5				
6				
7				

Date of Survey: 14-May-20 (day, month, year) Survey Biologist(s): Ashley Spencer, ashley.spencer@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project, 607 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.044343, -117.349039 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 607 acres Transect #: 115 Transect Length: 1,362 m

GPS Start-Point: 35.03798, -117.34836, 628 m (easting, northing, elevation in meters) Start Time 8:38 am ☒ pm ☐

GPS End-Point: 35.05025, -117.34827, 621 m (easting, northing, elevation in meters) End Time: 9:19 am ☒ pm ☐

Start Temp: 20 °C End Temp: 22 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	-117.34825	35.04382	Burrow	South facing burrow located at the base of a saltbush. Deteriorated. Class 5. Not DT burrow.
2				
3				
4				
5				
6				
7				
8				

Date of Survey: 14-May-20 (day, month, year) Survey Biologist(s): Stephen Anderson, stephen.anderson@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project, 607 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.044343, -117.349039 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 607 acres Transect #: 130 Transect Length: 1,362 m

GPS Start-Point: 35.03799, -117.34672, 627 m (easting, northing, elevation in meters) Start Time 11:09 am ☒ pm ☐

GPS End-Point: 35.05025, -117.34662, 620 m (easting, northing, elevation in meters) End Time: 11:36 am ☒ pm ☐

Start Temp: 25 °C End Temp: 29 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	-117.34662	35.05006	Burrow	Class 5, circular burrow about 7 inches in diameter, cobwebs present, caved-in, burrow ends 1-foot deep. Not DT burrow.
2				
3				
4				
5				
6				
7				
8				

Date of Survey: 14-May-20 (day, month, year) Survey Biologist(s): Ashley Spencer, ashley.spencer@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project, 607 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.044343, -117.349039 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 607 acres Transect #: 139 Transect Length: 1,362 m

GPS Start-Point: 35.03800, -117.34573, 626 m (easting, northing, elevation in meters) Start Time 12:54 am ☐ pm ☒

GPS End-Point: 35.05025, -117.34564, 619 m (easting, northing, elevation in meters) End Time: 1:22 am ☐ pm ☒

Start Temp: 28 °C End Temp: 30 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	-117.34565	35.04880	Burrow	West facing burrow. Primarily non-native species covering the front entrance to burrow. Class 5. Not DT burrow.
2				
3				
4				
5				
6				
7				
8				

Date of Survey: 14-May-20 (day, month, year) Survey Biologist(s): Tom Millington, tommillington@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project, 607 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.044343, -117.349039 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 607 acres Transect #: 144 Transect Length: 1,362 m

GPS Start-Point: 35.05025, -117.34509, 620 m (easting, northing, elevation in meters) Start Time 1:22 am ☐ pm ☒

GPS End-Point: 35.03800, -117.34518, 626 m (easting, northing, elevation in meters) End Time: 1:49 am ☐ pm ☒

Start Temp: 30 °C End Temp: 31 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	-117.34510	35.05006	Burrow	Class 5. Northwest facing entrance approximately 5" diameter, not half moon shape. Burrow ends after 10". Not DT burrow.
2				
3				
4				
5				
6				
7				
8				

Date of Survey: 14-May-20 (day, month, year) Survey Biologist(s): Tom Millington, tommillington@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project, 607 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.044343, -117.349039 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 607 acres Transect #: 148 Transect Length: 1,362 m

GPS Start-Point: 35.03800, -117.34475, 625 m (easting, northing, elevation in meters) Start Time 1:53 am ☐ pm ☒

GPS End-Point: 35.05025, -117.34465, 619 m (easting, northing, elevation in meters) End Time: 2:24 am ☐ pm ☒

Start Temp: 31 °C End Temp: 32 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	-117.34464	35.04996	Burrow	Class 5. South facing entrance approximately 6” diameter, not half moon shape. Not DT burrow.
2				
3				
4				
5				
6				
7				
8				

Date of Survey: 14-May-20 (day, month, year) Survey Biologist(s): Ashley Spencer, ashley.spencer@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project, 607 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.044343, -117.349039 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 607 acres Transect #: 151 Transect Length: 1,362 m

GPS Start-Point: 35.05025, -117.34432, 619 m (easting, northing, elevation in meters) Start Time 2:26 am ☐ pm ☒

GPS End-Point: 35.03800, -117.34442, 625 m (easting, northing, elevation in meters) End Time: 2:53 am ☐ pm ☒

Start Temp: 32 °C End Temp: 30 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	-117.34433	35.04742	Burrow	Burrow entrance facing east. Vegetation in front of burrow entrance. Class 5. Not DT burrow.
2				
3				
4				
5				
6				
7				
8				

Date of Survey: 14-May-20 (day, month, year) Survey Biologist(s): Tom Millington, tommillington@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project, 607 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.044343, -117.349039 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 607 acres Transect #: 152 Transect Length: 1,362 m

GPS Start-Point: 35.05025, -117.34421, 619 m (easting, northing, elevation in meters) Start Time 2:26 am ☐ pm ☒

GPS End-Point: 35.03800, -117.34431, 625 m (easting, northing, elevation in meters) End Time: 2:53 am ☐ pm ☒

Start Temp: 32 °C End Temp: 30 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	-117.34432	35.04742	Burrow	Class 5. Northeast facing entrance approximately 7" diameter, not half moon shape. Not DT burrow.
2				
3				
4				
5				
6				
7				
8				

Date of Survey: 18-May-20 (day, month, year) Survey Biologist(s): Ashley Spencer, ashley.spencer@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project, 607 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.044343, -117.349039 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 607 acres Transect #: 179 Transect Length: 1,357 m

GPS Start-Point: 35.03802, -117.34135, 623 m (easting, northing, elevation in meters) Start Time 10:38 am ☒ pm ☐

GPS End-Point: 35.05025, -117.34125, 618 m (easting, northing, elevation in meters) End Time: 11:05 am ☒ pm ☐

Start Temp: 25 °C End Temp: 25 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	-117.34131	35.04422	Burrow	Entrance is south facing. Cobwebs and vegetation covering the entrance. Class 5. Not DT burrow.
2	-117.34129	35.04422	Burrow	Entrance is northeast facing. Cobwebs and vegetation covering the entrance. Class 5. Not DT burrow.
3				
4				
5				
6				
7				
8				

Date of Survey: 18-May-20 (day, month, year) Survey Biologist(s): Tom Millington, tommillington@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project, 607 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.044343, -117.349039 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 607 acres Transect #: 268 Transect Length: 214 m

GPS Start-Point: 35.03807, -117.33159, 621 m (easting, northing, elevation in meters) Start Time 2:29 am ☐ pm ☒

GPS End-Point: 35.04000, -117.33158, 618 m (easting, northing, elevation in meters) End Time: 2:35 am ☐ pm ☒

Start Temp: 28 °C End Temp: 28 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

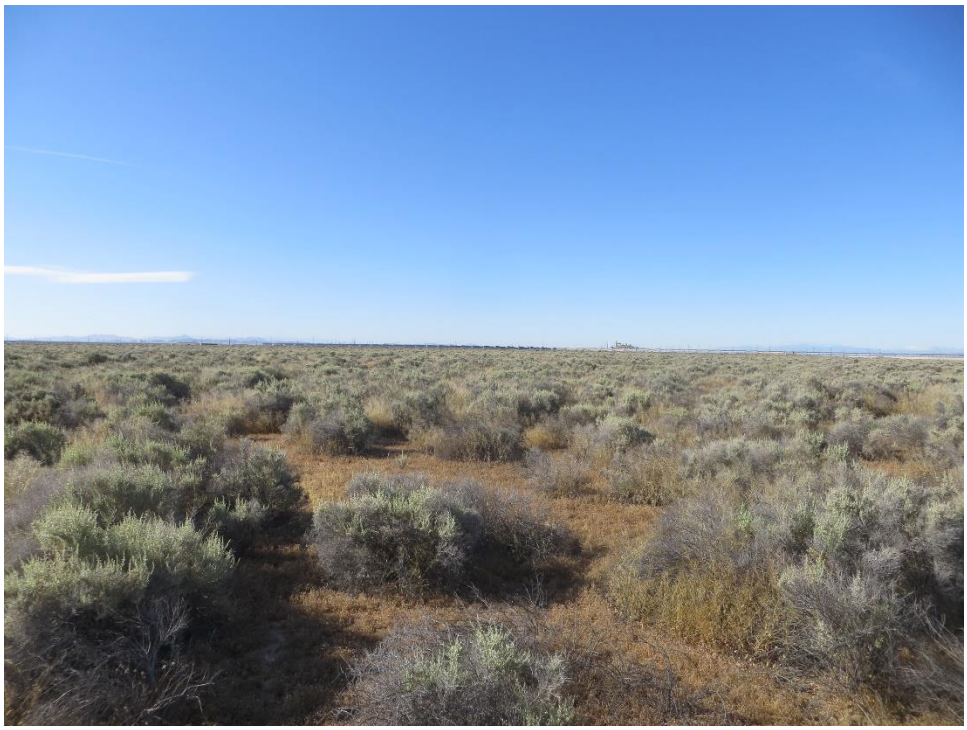
Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	-117.33159	35.03797	Burrow	Class 5. Northeast facing entrance approximately 5" diameter, not half moon shape. Not DT burrow.
2				
3				
4				
5				
6				
7				
8				

Attachment C

Site Photographs

Photograph 1 – View of dense allscale scrub, facing east from the western end of the project site.



Photograph 2 – View of dense allscale scrub, facing south from the northwestern end of the project site.

Photograph 3 – View of moderately dense allscale scrub, facing south from the northeastern end of the project site.

Photograph 4 – View of open allscale scrub, facing south from the northeastern end of the project site.

Photograph 5 – View of open/disturbed allscale scrub, facing north from the southern end of the project site.

Photograph 6 – Facing northeast at a portion of the center of the project site, where existing concrete foundations and structures are present from circa 1990-1991 when this area was originally under construction but was abandoned due to funding.

Photograph 7 – The majority of the project site is protected by both a chain link fence and desert tortoise exclusion fencing.

Photograph 8 – In some areas the desert tortoise exclusion fence is not present, but a chain link fence is still in place.

Photograph 9 – In some areas, such as the northeast corner, there is no fencing present.

Photograph 10 – In this area of the southeast corner, there is a large break in what is otherwise an intact section of the fence.

Photograph 11 – Burrow 1, a north-facing Class 5 burrow. All of the following burrows were "possibly" desert tortoise burrows but showed no tortoise sign and no indications of occupancy. It is likely that none of these are actually tortoise burrows, but size and shape dictated documentation.

Photograph 12 – Burrow 2, a south-facing Class 5 burrow.

Photograph 13 – Burrow 3, a south-facing Class 5 burrow.

Photograph 14 – Burrow 4, a west-facing Class 5 burrow.

Photograph 15 – Burrow 5, a northwest-facing Class 5 burrow.

Photograph 16 – Burrow 6, a south-facing Class 5 burrow.

Photograph 17 – Burrow 7, an east-facing Class 5 burrow.

Photograph 18 – Burrow 8, a northeast-facing Class 5 burrow.

Photograph 19 – Burrow 9, a south-facing Class 5 burrow.

Photograph 20 – Burrow 10, a northeast-facing Class 5 burrow.

Photograph 21 – Burrow 11, a northeast-facing Class 5 burrow.

Photograph 22 – Facing south from the northeastern corner of the survey area at the reinforced fence.

Photograph 23 – Showing the reinforced fence line with exclusion fencing.

Attachment D

Wildlife Species Observed List

*Scientific Name**	**Common Name**	**Special-Status Rank****
Reptiles		
Aspidoscelis tigris tigris	Great Basin whiptail	
Dipsosaurus dorsalis dorsalis	desert iguana	
Gambelia wislizenii	long-nosed leopard lizard	
Uta stansburiana elegans	western side-blotched lizard	
Birds		
Artemisiospiza belli canescens	saltbush (=Bell's) sparrow	
Chordeiles acutipennis	lesser nighthawk	
Corvus corax	common raven	
Eremophila alpestris actia	California horned lark	WL
Haemorhous mexicanus	house finch	
Numenius americanus	long-billed curlew	
*Passer domesticus**	house sparrow	
*Sturnus vulgaris**	European starling	
Zenaida macroura	mourning dove	
Mammals		
Ammospermophilus leucurus	white-tailed antelope ground squirrel	
Canis latrans	coyote	
Dipodomys deserti	desert kangaroo rat	
Lepus californicus	black-tailed jackrabbit	
Sylvilagus audubonii	Audubon's cottontail	

* Non-native species

** **Special-Status Rank**

WL Watch List - taxa that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

Attachment E

References

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Appendix F Desert Tortoise Focused Survey Results (2021)

Michael Baker
INTERNATIONAL

We Make a Difference

October 15, 2021 178416

Lockhart Solar PV II, LLC
Contact: Simon Day
11455 El Camino Real, Suite 160
San Diego, California 92130

SUBJECT: Results of Supplemental Desert Tortoise Focused Surveys for the Lockhart Solar PV II Project – San Bernardino County, California

Dear Mr. Day:

Michael Baker International (Michael Baker) is pleased to submit this supplemental report to Lockhart Solar PV II, LLC documenting the results of two focused desert tortoise (*Gopherus agassizii*; DETO) surveys conducted for the Lockhart Solar PV II Project (Project) located in the former town of Lockhart, San Bernardino County, California. Focused surveys occurred in March and July during the 2021 field season. Michael Baker was contracted to perform DETO surveys on an additional approximate 66 acres of desert scrub habitat in the Mojave Desert, contiguous with an approximate 607-acre area that Michael Baker surveyed for DETO in 2020 (2020 Survey Area; Michael Baker 2021). This area where DETO focused surveys occurred in 2021 is hereafter referred to as the 2021 Survey Area and consists of two discrete areas, an approximately 42-acre area north of the 2020 Survey Area surveyed in March 2021 and an approximately 24-acre area south of the 2020 Survey Area surveyed in July 2021.

Project Location

The Project Site is in unincorporated Hinkley, CA, approximately 7 miles north of the intersection of Harper Lake Road and Mojave-Barstow Highway 58 (refer to Figure 1, *Regional Vicinity*, in Attachment A, *Figures*). The Project Site consists of three parcels, each of which contain vacant, previously disturbed land or miscellaneous concrete foundations, various electrical lines and poles, as well as existing facilities within the Shared Facilities Area. The Project Site is bordered on the south by the existing SEGS VIII and IX Solar Thermal Power Plants, which the County of San Bernardino (County) approved for repowering to photovoltaic (PV) solar and battery storage in 2019 as part of the Lockhart Solar I Facility (Conditional Use Permit [CUP] Project #201900125 approved in 2019), Harper Lake Road to the east; Hoffman Road to the west; and vacant land to the north (refer to Figure 2, *Project Site*, in Attachment A, *Figures*). Vehicular access is currently provided via Harper Lake Road and a private road through the Shared Facilities Area.

Project Description

Lockhart Solar PV II, LLC (Applicant) proposes to develop the Lockhart Solar PV II Project (Project), a utility scale, solar photovoltaic (PV) electricity generation and energy storage facility that would produce up to 150 megawatts (MW) of solar power and include up to 4 gigawatt hours (GWh) of energy storage

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capacity rate in a battery energy storage system (BESS) within the approximately 755-acre Project Site. The Project is located within the County of San Bernardino (County) and is largely sited on land previously approved by the California Energy Commission (CEC) for development of Solar Energy Generating System (SEGS) X, a solar thermal power facility which was never fully constructed. The Project is bordered on the south by the approved Lockhart Solar I Facility and the existing SEGS VIII and IX Solar Thermal Plants. The Project would share existing operations and maintenance (O&M) facilities with the Lockhart Solar I Facility (i.e., O&M building, warehouse and employee building), water and septic systems, switchyard and electrical transmission infrastructure, and a new collector substation (approved and to be constructed) within the approximately 110-acre "Shared Facilities Area" to connect the Project to the existing transmission line which runs to the Southern California Edison (SCE)-owned Kramer Junction substation.

Project Background

During the late-1980s, construction of the SEGS X solar thermal facility was initiated on the Project Site. SEGS X was part of a series of three solar thermal power plants certified by the CEC which were to be built adjacent to each other in order to share supporting facilities. SEGS X was fully permitted and certified as an 80-megawatt solar thermal facility. Approximately 600-acres were identified for the SEGS X power plant including land for associated facilities to be shared with the two adjacent solar thermal power plants (SEGS VIII and IX). Per the SEGS IX and X CEC certification, permanent impacts to loss of high-quality habitats were mitigated through purchase of 1,680 acres of conservation land at a 5 to 1 ratio for both Mohave ground squirrel and desert tortoise, pursuant to the California Department of Fish and Game (CDFG), now known as the California Department of Fish and Wildlife (CDFW), requirements and approvals. All of these mitigation lands were protected even though the SEGS X project was never fully constructed.

In 1991, the SEGS X owner was unable to continue construction due to lack of financing and construction was halted. Prior to work stoppage, several concrete foundations for the power block as well as concrete foundations for solar racking had been installed in portions of the Project Site. The Project proposes to use these already disturbed parcels and the CDFW conservation lands already protected to construct a solar PV and BESS facility.

Project Overview and Design

As stated above, the Project includes the development of solar PV facilities, BESS, and associated infrastructure with the capacity to generate up to 150 MW of solar energy and up to 4 GWh of energy storage capacity rate. The previously installed SEGS X concrete foundations will be removed if the foundations conflict with installation of Project facilities; they will otherwise be left in place. Concrete from SEGS X foundations would be demolished and exported from the site for proper disposal at a licensed landfill. Previously constructed concrete solar racking piers in the southwest portion of the site will remain in place as newer steel foundation piles can be driven around the old piers further reducing soil disturbance and offsite hauling and landfilling of debris.

Existing O&M buildings, warehouse, and the employee building would be shared by Project operations as well as Lockhart Solar I Facility staff. These shared facilities are located within the approximately 110-acre "Shared Facilities Area". The Project would also be served by shared, and already approved, water and septic systems within the adjacent Lockhart Solar I Facility site. The Shared Facilities Area includes the already approved BESS for Lockhart Solar I (County permitted), BESS for SEGS IX (CEC permitted), and the BESS for the Project, as these facilities are integral to the collector substation. In addition, the already

approved collector substation and the existing switchyard located within the Shared Facilities Area will be upgraded, as necessary, to connect the Project to the existing transmission line which runs to SCE-owned Kramer Junction substation. The Project is subject to CUP approval from the County.

Site Grading and Earthwork

Site grading and earthwork activities are expected to include mowing, excavation, and pile-driving. Grading of the Project Site would be limited to the greatest extent possible to control dust. Micro-grading would occur to maintain pile foundation tolerances and grading would be required for installation of site roads and preparation of equipment foundation pads. Solar panels are attached to driven piles and do not require foundation pads.

The Project may require grading for extension of the existing open channel located outside the Project fence line along the western and northern boundary of the Project Site for the collection and routing of offsite run-on. If feasible, this channel may be constructed within the fence line to limit new disturbance associated with Project construction. The channel would redirect flows to be discharged to the existing watershed which drains toward Harper Dry Lake. Site preparation and construction would occur in accordance with all federal, state, and County zoning codes and requirements.

All applicable local, state, and federal requirements and best management practices (BMPs) would be incorporated into Project construction activities. The construction contractor would be required to incorporate BMPs consistent with the County zoning ordinance and with guidelines provided in the California Stormwater Quality Association's Construction Best Management Practice Handbook, including the preparation of a Stormwater Pollution Prevention Plan and a Soil Erosion and Sedimentation Control Plan to reduce potential impacts related to construction of the Project.

Decommissioning

At the end of the Project's operational term, the Applicant may determine that the Project should be decommissioned and deconstructed, or it may seek an extension of its CUP. The Applicant will work with the County to ensure decommissioning of the Project after its productive lifetime complies with all applicable local, state, and federal requirements BMPs.

Site infrastructure would be removed, including fences and concrete pads that may support the inverters, transformers, and related equipment. The exterior fencing and gates would be removed, and materials would be recycled to the extent feasible. Project roads would be restored to their pre-construction condition to the extent feasible unless the landowner elects to retain the improved roads for access throughout the property.

Regulatory Framework

Federal Endangered Species Act of 1973

As defined within the Federal Endangered Species Act of 1973 (FESA), an endangered species is any animal or plant listed by regulation as being in danger of extinction throughout all or a significant portion of its geographical range. A threatened species is any animal or plant that is likely to become endangered within the foreseeable future throughout all or a significant portion of its geographical range. Without a special permit, Federal law prohibits the "take" of any individuals or habitat of Federally-listed species. Under Section 9 of the FESA, take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct." The term "harm" has been clarified to include "any act which actually kills or injures fish or wildlife and emphasizes that such acts may include significant

habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife." Enforcement of FESA is administered by the U.S. Fish and Wildlife Service (USFWS).

Under the definition used by the FESA, "Critical Habitat" refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species' conservation and if the occupied areas are inadequate to ensure the species' recovery. If a project may result in take or adverse modification to a species' designated Critical Habitat and the project has a Federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a Federal nexus may include projects that occur on Federal lands, require Federal permits (e.g., Clean Water Act Section 404 permit), or receive any Federal oversight or funding. If there is a Federal nexus, then the Federal agency that is responsible for providing funds or permits would be required to consult with the USFWS under the FESA.

California Endangered Species Act

In addition to Federal laws, the State of California has its own California Endangered Species Act (CESA), enforced by the CDFW. The CESA program maintains a separate listing of species beyond the FESA, although the provisions of each act are similar.

State-listed threatened and endangered species are protected under provisions of the CESA. Activities that may result in "take" of individuals (defined in CESA as; "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") are regulated by CDFW. Habitat degradation or modification is not included in the definition of "take" under CESA. Nonetheless, CDFW has interpreted "take" to include the destruction of nesting, denning, or foraging habitat necessary to maintain a viable breeding population of protected species.

The State of California considers an endangered species as one whose prospects of survival and reproduction are in immediate jeopardy. A threatened species is considered as one present in such small numbers throughout its range that it is likely to become an endangered species in the near future in the absence of special protection or management. A rare species is one that is considered present in such small numbers throughout its range that it may become endangered if its present environment worsens. State threatened and endangered species are protected against take, as defined above, in the absence of incidental take permits.

Species Background

The DETO is currently designated as a State and federally threatened species. The Mojave population of the DETO inhabits areas north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, and southwestern Utah, and in the Sonoran Desert in California. Throughout the majority of the Mojave Desert, DETO occurs most commonly on gentle sloping soils characterized by an even mix of sand and gravel and sparsely vegetated low-growing vegetation where there is abundant inter-shrub space (USFWS 2008). The typical habitat for this species is creosote bush scrub below approximately 5,500 feet in elevation (USFWS 2008, USFWS 2010). Wildflowers, grasses, and in some cases, cacti make up the bulk of their diet. Some of the more common forbs consumed by DETO include desert dandelion

(*Malacothrix glabrata*), primrose (*Camissonia* spp. and *Oenothera* spp.) desert plantain (*Plantago ovata*), milkvetches (*Astragalus* spp.), gilia (*Gilia* spp.), desert marigold (*Baileya multiradiata*), Mojave lupine (*Lupinus odoratus*), phacelia (*Phacelia* spp.), desert wishbone-bush (*Mirabilis laevis*), lotus (*Lotus* spp.), forget-me-nots (*Cryptantha* spp.), goldfields (*Lasthenia californica*), California coreopsis (*Leptosyne californica*), white-margin sandmat (*Euphorbia albomarginata*), and the introduced red stemmed filaree (*Erodium cicutarium*). The DETO spends 95 percent of its life underground and will opportunistically utilize burrows of various lengths, deep caves, rock and caliche crevices, or overhangs for cover. Therefore, a moderately friable soil is required to allow for burrow construction and ensure that burrows do not collapse.

According to information within CDFW's California Natural Diversity Database (CNDDB), the entire general region that the Project is in is considered to be occupied by DETO, with anywhere from 20 to over 250 individuals estimated per square mile in 1977, although population density has been declining since then due to increased human encroachment and development (CDFW 2021). The CNDDB has thirteen (13) occurrence records for DETO within 5 miles of the Project Site, but the nearest specific DETO locations currently available in the CNDDB are two single tortoises found in May 2006 approximately 2.2 and 3.4 miles to the southeast. In addition, tortoise sign including burrows was observed west of the Project Site during previous surveys in 1988 (CEC 1990). Multiple live tortoises were also historically observed near the Project Site; twenty-two (22) tortoises were observed by a Luz Construction Management engineer after a brief rain in mid-May 1989 while walking along the transmission line route from the SEGS VIII facility to the Kramer Junction substation (CEC 1990).

The Project is not located within designated Critical Habitat for DETO. However, the Superior-Cronese Unit is located approximately 0.33-mile to the west at its closest point, while the Ord-Rodman Unit is located approximately 0.25-mile to the north (refer to Figure 1, *Regional Vicinity*). The Project is not located within a designated Desert Wildlife Management Area or a designated Area of Critical Environmental Concern (ACEC), but is approximately 1.2 miles northwest of the Harper Dry Lake ACEC, which was designated to protect the marsh habitat along the western shoreline of the lake as well as the raptor habitat.

Environmental Setting

The 2021 Survey Area is mostly dominated by native vegetation, with small portions of disturbed native habitat and/or bare ground (i.e., the maintenance road along the exterior of the fence line). The southern portion of the 66-acre 2021 Survey Area was previously completely graded and at one time used for agriculture but has since regrown with mostly saltbush (*Atriplex* spp.) vegetation. Relatively undisturbed, undeveloped land is located to the north, west, and east, with the Harper Dry Lake located within 1 mile to the east. A chain link fence with associated tortoise exclusion fencing was previously installed during initial construction of the SEGS X project in 1990 but was damaged in several areas along the fence. Following the negative results of the desert tortoise focused surveys in 2020, the fence was promptly repaired and reinforced, as needed, to prevent tortoises from entering the fenced site in the future. The 110-acre Shared Facilities Area is located to the south of the southern portion of the 2021 Survey Area and was previously surveyed (Michael Baker International 2018) as part of the permitting effort for the Lockhart Solar I Facility. The Shared Facilities Area is completely barren other than some existing buildings; it does not contain any suitable habitat for DETO and was not resurveyed as part of this effort.

Topography and Soils

The Project Site is situated in the southwestern region of the Mojave Desert. The region is known as the "High Desert" due to its approximate elevation of 2,800 feet above mean sea level (amsl). Much of the 2021 Survey Area is relatively flat, with surface elevations varying between approximately 2,070 feet amsl in the southwest corner to approximately 2,030 feet amsl in the northeast corner. In addition, a small and shallow topographic depression best characterized as a non-jurisdictional, unlined, constructed basin is located at the southwestern end of the northern portion of the 2021 Survey Area.

Soils within the 2021 Survey Area and within adjoining areas were reviewed prior to the field survey using the Web Soil Survey (U.S. Department of Agriculture, Natural Resources Conservation Service 2021). Mapped soils within the 2021 Survey Area include the following:

- Cajon sand, 0 to 2 percent slopes (Map Unit Symbol: 112)
- Cajon loamy sand, loamy substratum, 0 to 2 percent slopes (117)
- Kimberlina loamy fine sand, cool, 0 to 2 percent slopes (137)
- Norob-Halloran complex, 0 to 5 percent slopes (152)

Vegetation Communities

The only vegetation communities identified within the 2021 Survey Area during the field survey were allscale scrub (*Atriplex polycarpa* Shrubland Alliance) and spinescale scrub (*Atriplex spinifera* Shrubland Alliance). Although not located on the Bureau of Land Management (BLM) lands and therefore not subject to any BLM-related regulations or requirements, the dominance of saltbush vegetation in the 2021 Survey Area is due to the fact that it sits within a regional area recognized as an "unusual plant assemblage" due to a high concentration of similar plants within a limited distribution; in this case, the 2021 Survey Area is within the Western Mojave Desert/Desert Saltbush Assemblage (BLM 2019). In addition, a non-vegetative land cover type identified as bare ground was observed within the 2021 Survey Area.

Allscale Scrub (*Atriplex polycarpa* Shrubland Alliance)

Allscale scrub (*Atriplex polycarpa* Shrubland Alliance) was located throughout the 2021 Survey Area, consistent with the contiguous 607-acre 2020 Survey Area. The 2021 Survey Area is almost entirely comprised of allscale scrub with little change in plant species throughout. The majority of this vegetation community is dominated by allscale saltbush (*Atriplex polycarpa*), with red stemmed filaree, winged comb seed (*Pectocarya penicillata*), western tansy mustard (*Descurainia pinnata*), and California goldfields (*Lasthenia californica*) interspersed between saltbush shrubs.

Spinescale Scrub (*Atriplex spinifera* Shrubland Alliance)

Spinescale scrub (*Atriplex spinifera* Shrubland Alliance) was located within the northeast corner of the 2021 Survey Area contiguous with the spinescale scrub community mapped in the 607-acre 2020 Survey Area. This vegetation community has a similar herbaceous understory to the allscale scrub on-site but is dominated by spinescale saltbush (*Atriplex spinifera*) rather than allscale saltbush. According to the CNDDB and the *California Natural Community List* dated September 9, 2020 (CDFW 2020), spinescale scrub is considered a Sensitive Natural Community by CDFW.

Bare Ground

Bare ground within the 2021 Survey Area includes areas primarily used as unpaved dirt maintenance roads.

Methods

Literature Review

Prior to conducting the 2021 focused surveys, Michael Baker performed a detailed literature review and record search of the 2021 Survey Area, vicinity, and region for DETO records. The literature search included a review of existing biological and focused DETO survey reports from the Project vicinity, including Michael Baker's survey results in the adjacent 2020 Survey Area, as well as records reported in the CNDDB and the USFWS online Critical Habitat Mapper (USFWS 2021).

Focused Survey

Michael Baker biologists contacted USFWS senior biologist Scott Hoffmann on May 5, 2020 to confirm the site-specific survey methodology for the 2020 focused surveys. Based on guidance from Mr. Hoffmann, it was determined that based on the regional population status and historic data for DETO in the Project vicinity, focused surveys would only be required within the Project Site. According to Mr. Hoffmann, the species has undergone severe declines in recent decades in the general Project vicinity, and he stated that he did not expect Michael Baker to find any tortoises or sign.

Based on the negative results of the 2020 survey, Michael Baker employed a similar survey methodology for the 2021 Survey Area and restricted the action area to the immediate footprint of the new area that was added. The "small project surveys" survey method from the 2019 DETO survey protocol was used for the 2021 focused surveys, which allows surveys to occur year-round due to the lower likelihood of finding live tortoises in small survey areas and the emphasis instead on searching for tortoise sign (USFWS 2019). The 2021 Survey Area was considered by Michael Baker to be a separate survey area from that surveyed in 2020 for two important reasons:

1. The northern portion of the 2021 Survey Area was located outside of the fence line from the 2020 Survey Area. However, the southern portion of the 2021 Survey Area is within the fence line. Immediately following the negative results of the desert tortoise focused surveys in 2020, the chain link fence and desert tortoise exclusion fence were repaired and reinforced, as needed, to prevent tortoises from entering the fenced site in the future. Therefore, although the 2020 and 2021 survey areas are contiguous, they are separated by a newly reinforced chain link fence with DETO exclusion fencing that would prevent any tortoises from entering the 2020 Survey Area.
2. Because the fence line surrounding the 2020 Survey Area was repaired and reinforced in summer 2020 after the 2020 focused surveys were completed (Michael Baker 2021), it was reasonable to assume that no new tortoises migrated into the fenced area. The portions of the fence that had been previously damaged or missing were verified during the two 2021 DETO surveys to have been repaired. Furthermore, the fence is inspected and maintained by site operation personnel on a regular basis (a minimum of once a week) to ensure it remains intact and effective. Therefore, the 2020 Survey Area was considered by Michael Baker to still be clear of any DETO, as DETO was determined to be absent following the 2020 focused surveys and no new animals were expected to have moved into the area since then. Therefore, the southern portion of the 2021 Survey Area, although located within the same fenced area as the 2020 Survey Area, was considered as a separate

area for survey purposes because of the repair and reinforcement of the fence surrounding it.

The 2021 focused surveys were conducted in accordance with the guidelines described in the USFWS protocol *Preparing for Any Action that May Occur within the Range of the Mojave Desert Tortoise (Gopherus agassizii*), last updated in 2019 (USFWS 2019). The 2021 focused surveys were conducted by Michael Baker biologists Tom Millington, Ryan Winkleman, Ashley Spencer, and Tim Tidwell on March 11, 2021 and by Ryan Winkleman and Ashley Spencer on July 14, 2021 (refer to Table 1, *Survey Dates, Times, and Weather Conditions*).

Table 1: Survey Dates, Times, and Weather Conditions

Date	Time (start/finish)	Weather Conditions	
		Temperature (°F) (start/finish)	Wind Speed (average miles per hour)
March 11, 2021	0900 / 1143	55 / 66	5
July 14, 2021	0741 / 1004	86 / 100	0

Based on the guidelines set forth in the 2019 DETO survey protocol (USFWS 2019), Michael Baker biologists walked transects spaced at 10-meter (approximately 33 feet) intervals, with each biologist walking a roughly straight path on the centerline of the transect (refer to Figure 3, *2021 Survey Area and Results*, in Attachment A, *Figures*). Biologists walked at a pace that allowed for careful/detailed observation of the surrounding area to ensure 100-percent visual coverage of all areas that were determined to provide suitable habitat for DETO. Hand-held mirrors and cell phone screens were used to reflect sunlight into burrows that were found to search for any DETO or sign inside the burrows. All evidence of DETO presence or possible presence including live or dead DETO, burrows, or sign, that was observed during the 2021 survey was recorded on the datasheet provided in the 2019 DETO survey protocol (USFWS 2019) and recorded using a Garmin handheld GPS (refer to Attachment B, *Datasheets*). Burrows, if present, were categorized according to descriptions provided in the *Desert Tortoise (Mojave Population) Field Manual* (USFWS 2009) and listed below:

Burrow Condition Class:

1. Currently active, with DETO or recent DETO sign
2. Good condition, definitely DETO; no evidence of recent use
3. Deteriorated condition which includes collapsed burrows; definitely DETO (please describe)
4. Good condition; possibly DETO (please describe)
5. Deteriorated condition which includes collapsed burrows; possibly DETO (please describe)

Air temperature was measured with a Kestrel at the beginning and end of each transect to monitor temperature changes. Per the survey protocol, temperature readings were taken approximately 5 centimeters above the ground surface in an area of full sun but in the shade of the observer. Although previous guidance has stated that the maximum air temperature during surveys is 104 degrees Fahrenheit (°F), the current 2019 survey protocol states that DETO are most active when air temperature is below 95°F. At no point during the 2021 survey did the temperature reach above 104°F. Photographs were periodically taken to document existing habitat and any burrows observed (refer to Figure 3, *2021 Survey Area and Results*, in Attachment A, *Figures*, as well as to Attachment C, *2021 Survey Area Photographs*).

Results

No DETO or carapaces were found during the 2021 focused surveys (refer to Figure 3, *2021 Survey Area and Results*, in Attachment A, *Figures*). A total of four (4) Class 5 burrows were found dispersed throughout the 2021 Survey Area, none of which showed any sign of DETO in their vicinity or showed any indication that they were currently or historically occupied by DETO. Refer to the datasheets provided in Attachment B, *Datasheets*, for additional information related to these burrows, and to Photographs 5-8 in Attachment C, *2021 Survey Area Photographs*.

A total of eighteen (18) wildlife species were observed during the 2021 focused surveys including two (2) reptile, fourteen (14) birds, and two (2) mammals (refer to Attachment D, *Wildlife Species Observed List*).

Conclusions and Recommendations

Based on the results of the 2021 focused surveys and because the fence was repaired and reinforced, DETO was determined to be absent within the 2021 Survey Area. The only potential DETO burrows that were found in the 2021 Survey Area were all determined by Michael Baker's biologists to be Class 5 burrows, "deteriorated condition which includes collapsed burrows; possibly DETO." No DETO sign or carapaces were found at or near any of the burrows, or anywhere in the entire 2021 Survey Area.

The 2021 focused surveys were conducted and this report was prepared in compliance with the current (2019) version of the USFWS DETO survey protocol (USFWS 2019). Surveys followed survey protocol requirements including transect methodology, documentation requirements, and ambient weather conditions. It is recommended that this report be submitted to the USFWS and CDFW for their review and concurrence of the 2021 focused survey results.

Please do not hesitate to contact me at (949) 533-0918 or ryan.winkleman@mbakerintl.com or Tom Millington at (949) 246-7004 or tommillington@mbakerintl.com should you have any questions or require further information regarding the information presented in this report.

Sincerely,

Ryan Winkleman
Senior Biologist
Natural Resources & Regulatory Permitting

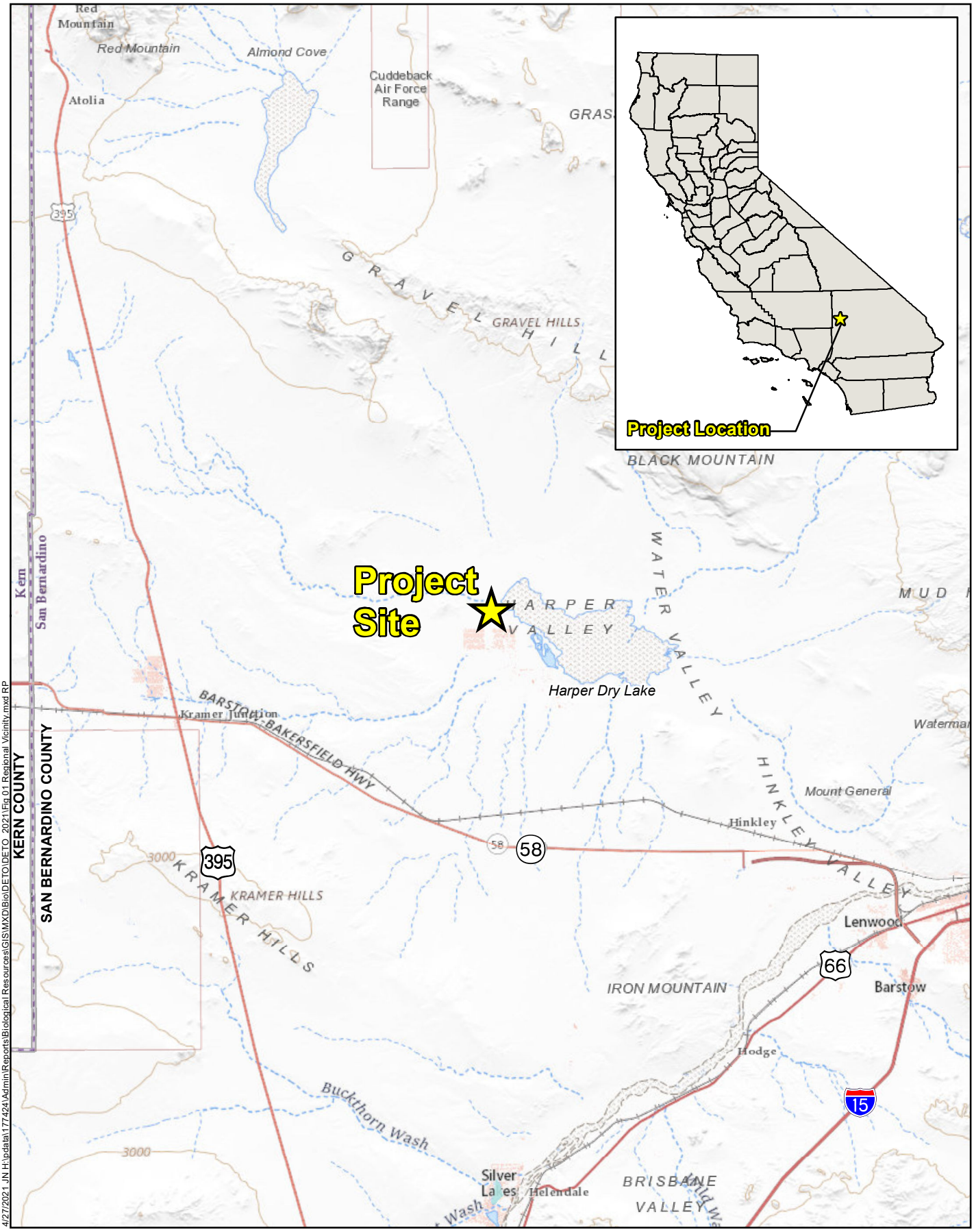
Tom Millington
Senior Biologist
Natural Resources & Regulatory Permitting

Attachments:

A. *Figures*
B. *Datasheets*
C. *2021 Survey Area Photographs*
D. *Wildlife Species Observed List*
E. *References*

Attachment A

Figures



LOCKHART SOLAR PV II PROJECT
DESERT TORTOISE FOCUSED SURVEY RESULTS

Regional Vicinity

Figure 1

Michael Baker INTERNATIONAL

0 2.5 5 Miles

Source: ArcGIS Online, 2018

35.054361
-117.319209

LOCKHART RANCH

HARPER LAKE

HOFFMAN

35.025819
-117.371916

Legend

- Project Site
- Shared Facilities Area
- 2020 Survey Area
- Repaired Fence
- 2021 Survey Area
- Desert Tortoise (*Gopherus agassizii*) Critical Habitat
- Reference Point

0 600 1,200
Feet

10/13/2021 J:\N-H\data\177424\Admin\Reports\Biological Resources\GIS\MXD\Bio\DETO\DETO_2021\Fig 02 Project Site.mxd RP

Source: Esri, 2020, USFWS, 2020

Michael Baker INTERNATIONAL

LOCKHART SOLAR PV II PROJECT
DESERT TORTOISE FOCUSED SURVEY RESULTS

Project Site

Figure 2

35.054039
-117.330634

P1
P2
P3
P4
P5
P6
P7
P8
1
2
3
4

LOCKHART

HARPER LAKE

35.037572
-117.360978

Legend

- Project Site
- 2021 Survey Area
- Survey Transects
- Class 5 Burrows
- Desert Tortoise (*Gopherus agassizii*) Critical Habitat
- Photograph Point and Direction
- Reference Point

0 350 700
Feet

10/13/2021 JN:H:\Jobdata\177424\Admin\Reports\Biological Resources\GIS\MXD\Bio\DETO\DETO_2021Fig 03 2021 Survey Area and Results.mxd RP

Michael Baker INTERNATIONAL

Source: Esri, 2020, USFWS, 2020

LOCKHART SOLAR PV II PROJECT
DESERT TORTOISE FOCUSED SURVEY RESULTS

2021 Survey Area and Results

Figure 3

Attachment B

Datasheets

Version: October 8, 2019

Date of Survey: 11-March-21 (day, month, year) Survey Biologist(s): Ashley Spencer, ashley.spencer@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project (additional Action Area), 66 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.048187, -117.350934 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 66 ac Transect #: 4 Transect Length: 2,073 m

GPS Start-Point: 35.046424, -117.359088, 627 m (easting, northing, elevation in meters) Start Time 9:00 am ☒ pm ☐

GPS End-Point: 35.050586, -117.339393, 618 m (easting, northing, elevation in meters) End Time: 9:58 am ☒ pm ☐

Start Temp: 13.0 °C End Temp: 17.7 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	35.050603	-117.350479	Burrow	Class 5, west-facing burrow at the base of saltbush. Burrow is approximately 20.5 cm across with cobwebs at entrance. Not half moon shape. No tortoise sign in or around burrow.
2				
3				
4				
5				
6				
7				
8				

Date of Survey: 11-March-21 (day, month, year) Survey Biologist(s): Tim Tidwell, timothy.tidwell@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project (additional Action Area), 66 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.048187, -117.350934 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 66 ac Transect #: 7 Transect Length: 2,112 m

GPS Start-Point: 35.050856, -117.339391, 618 m (easting, northing, elevation in meters) Start Time 10:07 am ☒ pm ☐

GPS End-Point: 35.046527, -117.359412, 627 m (easting, northing, elevation in meters) End Time: 11:44 am ☒ pm ☐

Start Temp: 17.7 °C End Temp: 19.1 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	35.050851	-117.35017	Burrow and mound.	Class 5. Burrow located at base of saltbush and facing NNE. Cobwebs at entrance of burrow observed. Not half moon shape. No tortoise sign in or around burrow.
2				
3				
4				
5				
6				
7				
8				

Date of Survey: 11-March-21 (day, month, year) Survey Biologist(s): Tom Millington, tommillington@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project (additional Action Area), 66 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.048187, -117.350934 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 66 ac Transect #: 6 Transect Length: 2,100 m

GPS Start-Point: 35.050766, -117.339393, 618 m (easting, northing, elevation in meters) Start Time 10:07 am ☒ pm ☐

GPS End-Point: 35.046497, -117.359307, 626 m (easting, northing, elevation in meters) End Time: 11:44 am ☒ pm ☐

Start Temp: 17.7 °C End Temp: 19.1 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	35.050743	-117.341460	Burrow	Class 5, north-facing burrow approximately 15.2 cm across. Circular entrance/tunnel. Not half moon shape. No tortoise sign in or around burrow.
2				
3				
4				
5				
6				
7				
8				

Date of Survey: 14-July-21 (day, month, year) Survey Biologist(s): Ryan Winkleman, ryan.winkleman@mbakerintl.com (name, email, and phone number)

Site Description: Lockhart Solar PV II Project (additional Action Area), 66 acres, west of Harper Dry Lake (project name and size; general location)

County: San Bernardino Quad: Lockhart Location: 35.048187, -117.350934 (UTM coordinates, lat-long, and/or TRS; map datum)

Circle One: 100% Coverage Area size to be surveyed: 66 ac Transect #: 4 Transect Length: 2,310 m

GPS Start-Point: 35.037806, -117.330561, 620 m (easting, northing, elevation in meters) Start Time 9:03 am ☒ pm ☐

GPS End-Point: 35.037747, -117.355960, 631 m (easting, northing, elevation in meters) End Time: 10:04 am ☒ pm ☐

Start Temp: 34.0 °C End Temp: 38.0 °C

Live Tortoises

Detection Number	GPS Location		Time	Tortoise Location (*in burrow:* all of tortoise beneath plane of burrow opening, or *not in burrow*)	Approx MCL ≥180 mm? (*Yes, No, or Unknown*)	Existing tag # and color, if present
	Easting	Northing				
1						
2						
3						
4						
5						
6						
7						
8						

Tortoise Sign (burrows, scats, carcasses, etc.)

Detection Number	GPS Location		Type of Sign (*burrows, scats, carcass, etc*)	Description and Comments
	Easting	Northing		
1	35.037667	-117.342650	Burrow	Class 5, north-facing burrow located at the base of dead saltbush. Shallow, not half moon shape. No tortoise sign in or around burrow.
2				
3				
4				
5				
6				
7				
8				

Attachment C

2021 Survey Area Photographs

Photograph 1 – Facing southwest from the northern portion of the 2021 Survey Area.

Photograph 2 – Facing northeast from the northern portion of the 2021 Survey Area.

Photograph 3 – Facing west from the northern portion of the 2021 Survey Area.

Photograph 4 – Facing west from the southern portion of the 2021 Survey Area.

Photograph 5 – Burrow 1, a west-facing Class 5 burrow.

Photograph 6 – Burrow 2, a north/northeast-facing Class 5 burrow.

Photograph 7 – Burrow 3, a north-facing Class 5 burrow.

Photograph 8 – Burrow 4, a north-facing Class 5 burrow.

Attachment D

Wildlife Species Observed List

Table D-1: Wildlife Species Observed List

*Scientific Name**	Common Name	Special-Status Rank**
Reptiles		
Sceloporus uniformis	yellow-backed spiny lizard	
Uta stansburiana elegans	western side-blotched lizard	
Birds		
Artemisiospiza belli canescens	saltbush (=Bell's) sparrow	
Buteo jamaicensis	red-tailed hawk	
Cathartes aura	turkey vulture	
Chordeiles acutipennis	lesser nighthawk	
Circus hudsonius	northern harrier	SSC
Corvus corax	common raven	
Eremophila alpestris actia	California horned lark	WL
Haemorhous mexicanus	house finch	
Lanius ludovicianus	loggerhead shrike	SSC
*Passer domesticus**	house sparrow	
Sayornis nigricans	black phoebe	
Toxostoma lecontei	LeConte's thrasher	
Tyrannus verticalis	western kingbird	
Zenaida macroura	mourning dove	
Mammals		
Lepus californicus	black-tailed jackrabbit	
Family Vespertilionidae	vesper bat (unidentified)	

* Non-native species

** **Special-Status Rank**

SSC Species of Special Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria:

- is extirpated from California or, in the case of birds, in its primary seasonal or breeding role;
- is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed.
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

WL Watch List - taxa that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

Attachment E

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