



Sienna Solar and Storage Project

General Biological Resources Assessment

prepared for

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General Biological Resources Assessment for Sienna Solar and Storage Project

Project Area Location

White Horse Mountain, Grand View Mine, and Lucerne Valley USGS 7.5-minute topographic quadrangles, Township (T) T06N Range (R) 01W, Section (S) 36; T06N R01E S31; T05N R01W S1-2, 11-14, 24; T05N R01E S06-09, 16-21, 28-30; T05N R01E S10, 15, 22, 27; T05N R01E S28-33.

Assessor's Parcel Number(s)

045207110, 045207111, 045207119, 045207120 and 045207125; 045206221, 045206222, 045206223 and 045206224; 045211217, 045211218, 045211219, 045211220, 045211224, and 045211225; 045211317; 045212112, 045212138, 045212139, 045212142, 045212148, and 045212152; 045236146 and 045236147; 045237101, and; 045239108 and 045239109. **Conditional use permit to construct and operate a 525-megawatt (mw) photovoltaic solar energy facility on 1,854 acres in Lucerne Valley; Lucerne Valley/ 3rd Supervisorial District; Project No. P201600569/CUP.**

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Executive Summary

This document provides the findings of a General Biological Resources Assessment (GBRA) prepared by Rincon Consultants, Inc. (Rincon) for the proposed Sienna Solar and Storage Project. The report documents existing conditions on all parcels proposed for development of solar energy generation facilities and along potential gen-tie corridors (referred to as the Study Area) and assesses potential impacts to sensitive biological resources based upon proposed project plans, consistent with the county's guidelines for GBRA's.

The proposed Sienna Solar and Storage Project (Project) is a 525-megawatt (MW) utility-scale solar farm with 525-MW battery storage located in unincorporated San Bernardino County. The site is located east of Barstow Road/State Route (SR) 247 roughly between Northside Road and Wilshire Road, northeast of the community of Lucerne Valley. There is a northern portion of the site located roughly between Haynes Road and No End Road, east of SR 247.

The Project consists of the installation of a photovoltaic (PV) solar facility, Battery Energy Storage System (BESS), project substation, Operations and Maintenance building(s), underground collection system, and a 230 kV generation-interconnect (gen-tie) line. The Sienna Project will interconnect at the SCE Calcite Substation (currently pending environmental clearance and construction) via a proposed overhead and/or underground 230-kV gen-tie line in addition to other ancillary facilities utilizing private and potentially public ROWs. The Project area encompasses 1,854 acres with an additional 77-acre substation site. Approximately 39 miles of collector lines and gen-tie alternatives will be analyzed in this Assessment, although not all routes will be developed.

The Project area is characterized by a mixture of residential properties, undeveloped playa and desert scrub communities, and agricultural land that includes alfalfa and jojoba farms and large-scale hemp growing operations. Small-scale abandoned and operational hemp and/or marijuana growing operations were present throughout the playa region of the Project area.

Project Setting

The 1,854-acre Project area is located in the southwestern portion of Mojave Desert in and near Lucerne Dry Lake, in unincorporated San Bernardino County, California. The Project is predominately located east of State Route 247 (Barstow Road), north of the unincorporated community of Lucerne Valley, with portions of the gen-tie alternative corridors that include possible connections along Haynes Road, Huff Road, and Northside Road to the east of Barstow Road. It is generally located approximately 35 miles south of the City of Barstow, 45 miles northwest of the town of Yucca Valley, 15 miles southeast of the town of Apple Valley, and 20 miles north of the City of Big Bear Lake. Barstow Road would provide primary access to the Project area. Land uses in the area are primarily rural residential, recreation, farmland, open space, and transportation corridors.

Project Area Special-Status Plants and Wildlife

Rincon identified 18 special status plants and 9 special status species as having some level of potential for occurrence within a portion of the Project area. However, the potential for most special status species to occur is limited to a small portion the project area that occurs within natural scrub communities in the eastern-most parts of the project area.

Rincon determined 17 special-status plant species have a low to moderate potential to occur on the Project area. These species include CRPR rankings ranging from 1B.1 to 2B.2; 1 of the 17 species is federally listed. Focused botanical surveys for listed plants are recommended in areas of suitable habitat during the appropriate survey periods to determine if listed or other special status plant species are present.

Rincon evaluated the nine special-status wildlife species as follows: Three special status wildlife species were determined to be present on the Project area: burrowing owl, (*Athene cunicularia*), a species of special concern (SSC), prairie falcon (*Falco mexicanus*), a CDFW Watch List species, and loggerhead shrike (*Lanius ludovicianus*), a SSC. Rincon biologists observed these species within the Project area during the reconnaissance surveys.

Four special-status wildlife species have been assessed as having moderate to high potential to occur in the scrub communities on the Project area based on their known distribution, documented presence in the vicinity of the Project area, and presence of suitable habitat within the Project area: golden eagle (foraging) (*Aquila chrysaetos*, Fully Protected (FP)), desert tortoise (*Gopherus agassizii*, Federally Threatened, State Threatened), Le Conte's thrasher (*Toxostoma lecontei*, SSC), and Bendire's thrasher (*Toxostoma bendirei*, SSC).

Two special-status wildlife species have been assessed as having low potential to occur in the scrub communities on the Project area: western mastiff bat (*Eumops perotis californicus*, SSC) and California condor (*Gymnogyps californianus*, Federally and State Endangered, fully protected).

A variety of common bird species protected by the California Fish and Game Code (CFGC) and the Federal Migratory Bird Treaty Act (MBTA), including most bird species that are not otherwise considered to have any special-status designation, may nest on-site. Nesting opportunities in the Project area include buildings, trees, transmission towers, natural and disturbed scrub habitat and riparian areas.

Special-status species and common nesting birds that may occur on site could be affected directly (loss of individuals) or indirectly (construction noise, dust, and other human disturbances) as a result of construction activity for the proposed Project. These impacts would be potentially significant but are anticipated to be reduced to a less than significant level through implementation of proposed mitigation measures.

Jurisdictional Waters

Rincon evaluated the Project area for potentially jurisdictional waters and wetlands that may be subject to regulation by the CDFW and/or Lahontan Regional Water Quality Control Board (LRWQCB). Since the Project area drains to inland areas of California, specifically, Lucerne Lake, for which the U.S. Army Corps of Engineers (USACE) previously issued an approved jurisdictional determination that the dry lake feature and tributaries are not jurisdictional, it is unlikely that the U.S. Army Corps of Engineers (USACE) would assert jurisdiction over these features. Jurisdictional features are described in summary within this GBRA. A full jurisdictional delineation will be presented under a separate cover.

1 Project and Property Description

1.1 Project Description

The proposed Sienna Solar and Storage Project (Project) is a 525-megawatt (MW) utility-scale solar farm with 525-MW battery storage located in unincorporated San Bernardino County. The site is located east of Barstow Road/State Route (SR) 247 roughly between Northside Road and Wilshire Road, northeast of the community of Lucerne Valley.

The Project area is characterized by a mixture of residential properties, undeveloped playa and desert scrub communities, and agricultural land that includes alfalfa and jojoba farms and large-scale hemp growing operations. Small-scale abandoned and operational hemp and/or marijuana growing operations exist throughout the playa region of the Project area.

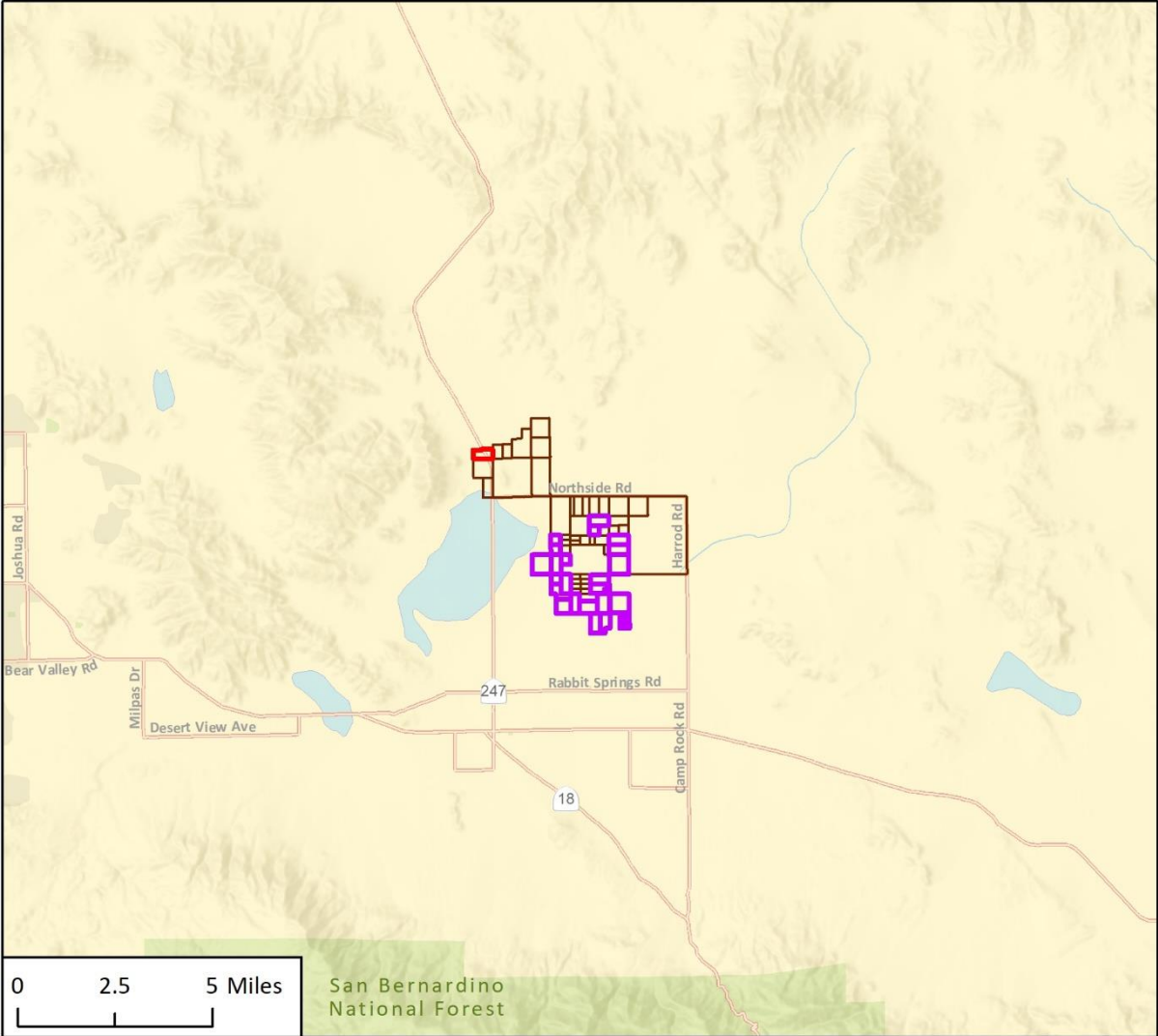
The proposed Project consists of the installation of a photovoltaic (PV) solar facility, Battery Energy Storage System (BESS), Project substation, Operations and Maintenance building(s), underground collection system, a 230 kV generation-interconnect (gen-tie) line, new Southern California Edison 230 kV substation, and other ancillary facilities. The Project area encompasses 1,854 acres with an additional 77-acre substation site. Approximately 39 miles of collector lines and gen-tie alternatives will be analyzed in this Assessment, although not all routes will be developed.

1.2 Project Location and Environmental Setting

The 1,854-acre Project area is located in the southwestern portion of Mojave Desert in and near Lucerne Dry Lake, in unincorporated San Bernardino County, California. The Project is predominately located east of State Route 247 (Barstow Road), north of the unincorporated community of Lucerne Valley, with portions of the gen-tie alternative corridors that include possible connections along Haynes Road, Huff Road, and Northside Road to the east of Barstow Road. It is generally located approximately 35 miles south of the City of Barstow, 45 miles northwest of the town of Yucca Valley, 15 miles southeast of the town of Apple Valley, and 20 miles north of the City of Big Bear Lake. Barstow Road would provide primary access to the Project area. Land uses in the area are primarily rural residential, recreation, farmland, open space, and transportation corridors.

Figure 1 shows the regional location of the Project area. Figure 2 shows the 35 parcels that comprise the site, and Table 1 lists the parcels and the acreage of each. The site is depicted on the *White Horse Mountain, Grand View Mine, and Lucerne Valley, California* United States Geological Survey (USGS) 7.5-minute topographic quadrangle maps (Figure 3).

Figure 1 Regional Location Map



Basemap provided by Esri and its licensors © 2023.

-  Project Site
-  Proposed SCE Calcite Substation
-  Gen-Tie Line and/or Collector Line Alternatives

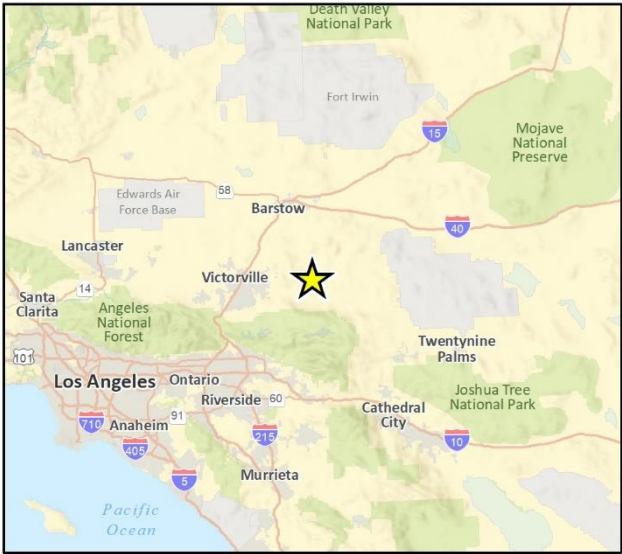
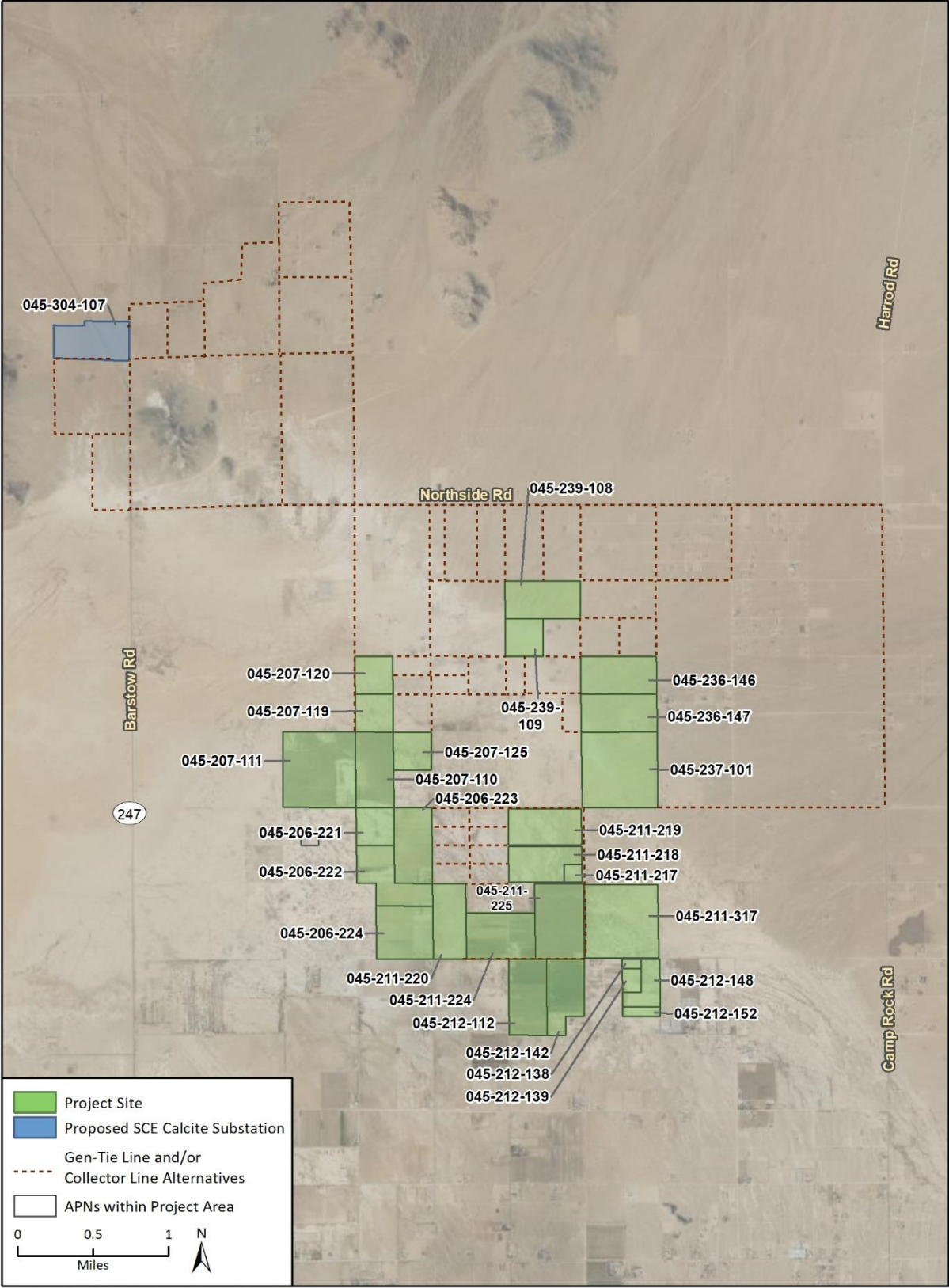


Fig 1 Regional Location Map

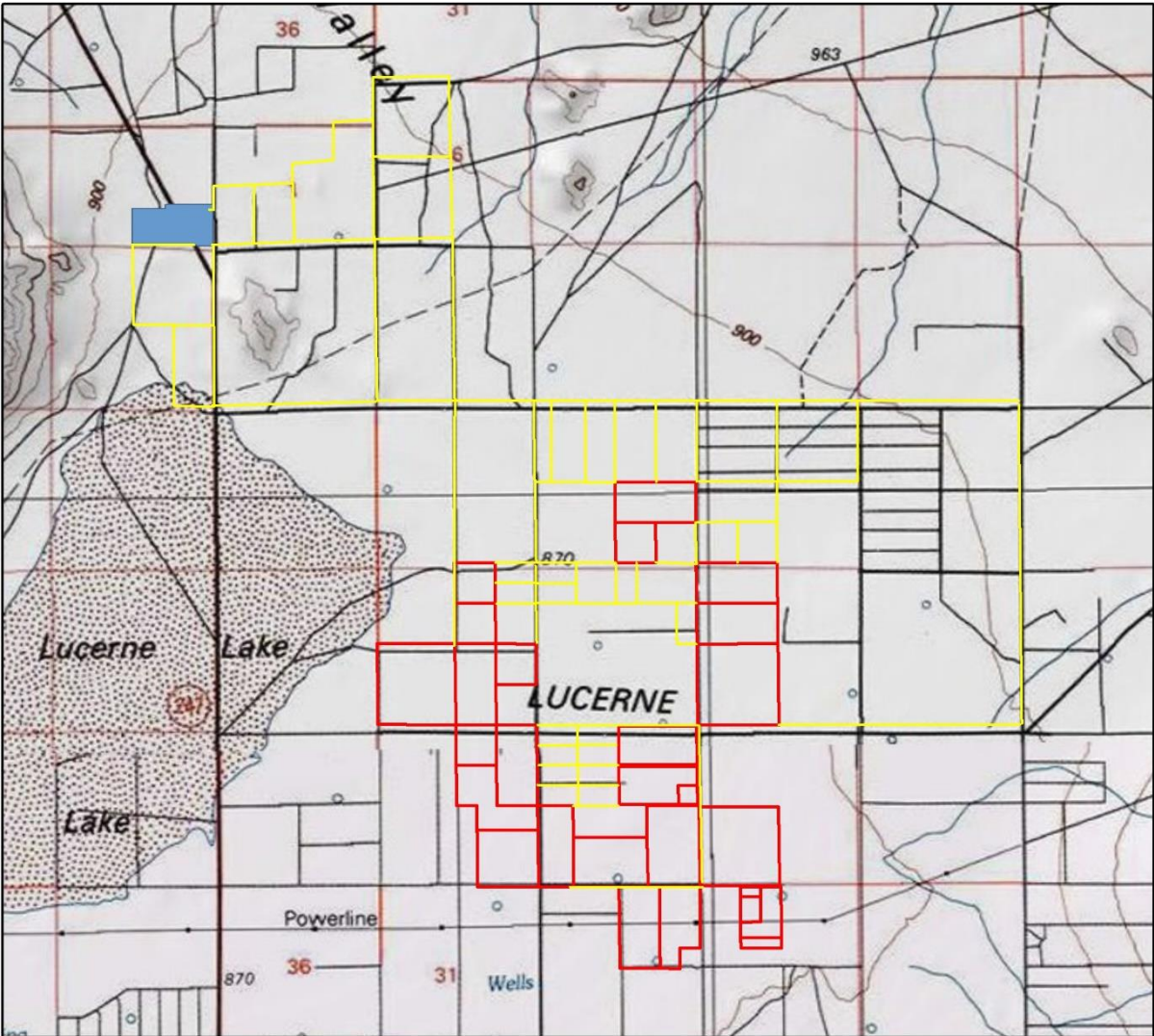
Figure 2 Project Location with APNs



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Fig 2 Project Location With APNs 20230303

Figure 3 Project Location (Topographic Map)



Basemap provided by National Geographic Society, Esri, and their licensors
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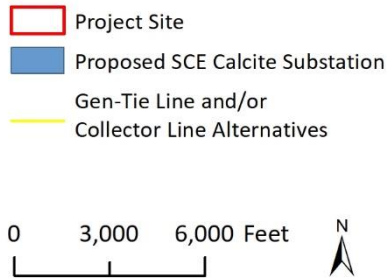


Fig 3 Regional Location Topo

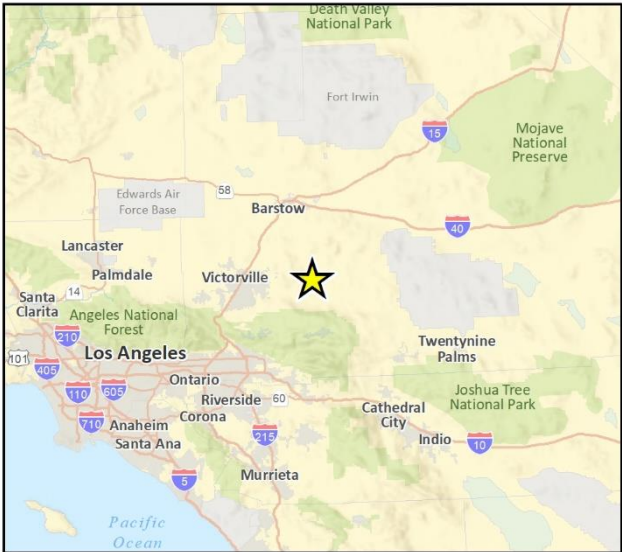


Table 1 Parcels within the Project Area

APN	Acreage (per Assessor's Map)	APN	Acreage (per Assessor's Map)
45207120	40.201988	45211217	8.8374063
45207119	40.21116	45211317	151.40044
45207111	154.92994	45212112	80.724638
45207125	40.206093	45212142	70.847518
45207110	80.411658	45212138	5.0164927
45206223	80.447237	45212139	12.554045
45206221	40.207435	45212148	33.286326
45206222	76.437885	45212152	10.188996
45206224	84.470432	45237101	161.27385
45211220	70.208881	45236147	80.707295
45211224	89.9045	45236146	80.667639
45211225	103.44547	45239109	39.915267
45211219	73.471912	45239108	80.023993
45211218	64.725183		

1.2.1 Topography

The Project area is located in the southwestern portion of Mojave Desert in and near Lucerne Dry Lake. The area is in a rain shadow formed by the adjacent mountains and features alkaline soils. This high desert ecological subregion is characterized by arid scrub, creosote bush scrub, playas, and desert washes. The site is primarily located on the floor of the Lucerne Dry Lake, and along its eastern and northern margins. Topography is mostly flat to gently sloped along the dry lake margins. The Granite Mountains and White Horse Mountain are west of the site, and Peterman Hill is within the gen-tie matrix, east of Barstow Road. Elevation at the site ranges between 2,850 and 2,910 feet above mean sea level.

The dry lakebed is heavily used for recreational activities, including off highway vehicle (OHV) travel (including racing) and assorted day use and camping activities. The Rocketry Organization of California (ROC) uses the dry lake as one of its designated launch sites, with scheduled launches occurring monthly throughout the year. Additionally, areas outside the dry lake within the Project area are also subject to various ongoing disturbances related to road maintenance, utility activities (electrical transmission towers and lines; underground gas pipeline), recreation, OHV travel, and illegal dumping.

1.2.2 Watershed and Drainages

Hydrology of the site and vicinity was evaluated through review of topographic maps, aerial photos, the National Hydrography Dataset (USGS 2021), and the National Wetland Inventory (USFWS 2021c), in conjunction with field survey data.

The site is located within the central portion of the Lucerne Lake watershed, Hydrologic Unit Code [HUC] 181001000404. It is located within the Este hydrologic groundwater sub-basin, a hydrologic subarea of the Mojave Groundwater Basin which contains two primary groundwater basins separated by a fault (Mojave Water Agency [MWA] 2005). The groundwater below the site is stored

in an aquifer within the Lucerne Valley Groundwater Basin (LVGB). The northern portion of the site extends slightly outside of the LVGB. Water is provided to the residents of Lucerne Valley from groundwater pumping (MWA 2005).

The majority of the site is mostly level and slope gradients across the site are extremely low. Thirty-nine small, shallow, ephemeral streams drain generally to the west and southwest in the direction of the dry lakebed. The streams convey water flows only during and immediately after high precipitation events. Hydromodification, primarily from roads, has fragmented stream flow in areas north and west of the dry lakebed. Road maintenance activities include clearing and blading which create large soil berms on each side of the roads, which blocks flow in most of the drainages at the road edge. Additionally, OHV tracks interrupt the flow of small shallow channels.

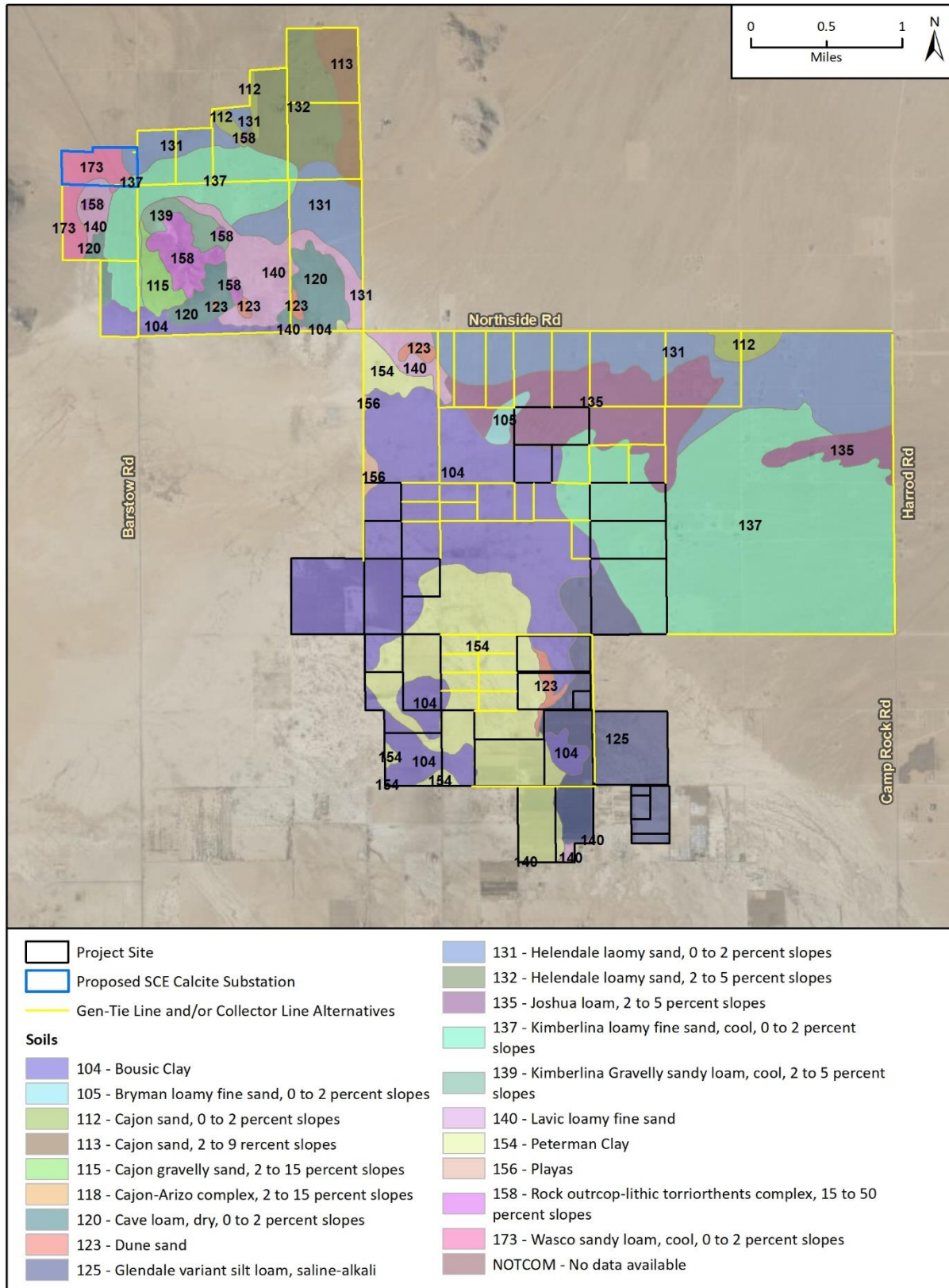
1.2.3 Soils

The U.S. Department of Agriculture (USDA) National Resource Conservation Service (NRCS) has mapped and inventoried soils at both landscape (coarse) scales and detailed (fine) scales. This data are catalogued in previously published soil surveys, the Soil Survey Geographic Database, and the U.S. General Soil Map. These can be accessed through the Web Soil Survey Application (USDA NRCS 2021a). This subsection summarizes soil resources as mapped by the NRCS that overlap the site at the landscape level.

The site is covered by the *Soil Survey of San Bernardino County, California, Mojave River Area*. The soil survey indicates that soils in the Lucerne Valley floor are primarily derived from alluvium parent materials from granitic sources and other mixed sources. Within the Project area, soils are associated with alluvial fans, toe slopes, playas, and other gently sloped landforms. Based on Web Soil Survey data, the site contains 19 soil map units, which are briefly described below. Soil map units across the site are shown on Figure 4.

Hydric soils are defined by the National Technical Committee for Hydric Soils as soils that in their undrained condition, are saturated, flooded, or ponded long enough during a growing season to develop anaerobic conditions that support the growth and regeneration of hydrophytic vegetation (59 Federal Register 16835). Soils that are sufficiently wet to support the growth and regeneration of hydrophytic vegetation due to artificial measures are included in the concept of hydric soils on the list "Hydric Soils of the United States" (National List) (USDA NRCS 2021b). Soils are identified for inclusion on the list based on specific criteria established by law (67 Federal Register 58756). The National List is "a compilation of all map units with either a major or minor component that is at least in part hydric. ...Because the list includes both major and minor (small) percentages for map units, in some cases most of the map unit may not be hydric... Some components may be phases of soil series that have a range of characteristics... therefore, only a portion of that component's concept (or range in characteristics) may in fact be hydric. The list is useful in identifying map units that may contain hydric soils."

Figure 4 Soils Map



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Soil data provided by SSURGO, NRCS, USDA, 2021.

Fig X Soils 20230303

At least one minor component of the following soil map units have been identified as hydric when they occur in depressions or playas that are during the growing season:

- Bousic Clay; Cajon Sand
- Cave Loam, Dry, 0 to 2 Percent Slopes
- Lavic Loamy Fine Sand
- Peterman clay
- Playas

The majority of the dry lakebed is mapped as “Playas”, which may have hydric components. However, the dry lakebed is not frequently ponded for long or very long durations. During and immediately after infrequent heavy rainfall, low volumes of water appear to collect in the lowest elevations for brief durations. The dry lakebed contains a dense, hardpan layer of clay soil. The soils contain a high alkaline pH, and high levels of salts. Therefore, these soils often do not form hydric soil indicators even when saturated for extended periods.

Bousic Clay

This soil map unit typically occurs on toeslopes of lake plains and talfs (geomorphic components of an essentially flat and broad area dominated by closed depressions) in low areas with very little slope. The dominant soil series, Bousic clay, is formed in alluvium from mixed sources. A typical soil profile consists of clay horizons to at least 60 inches of depth. This soil is well drained, alkaline, and strongly saline. Minor components within this map unit are Peterman soils.

Bryman Loamy Fine Sand, 2 to 5 Percent Slopes

This granitic soil map unit usually occurs on terraces and older alluvial fans, at elevations from 2,800 to 3,800 feet. A typical soil profile consists of a pale topsoil layer that is loamy or sandy. The second horizon is usually pink to reddish brown and is generally sandy clay loam, loam or gravelly sandy loam. The third horizon is pale yellowish brown to strong brown, is usually alkaline, and may be loamy coarse sand to sand.

Cajon Sand, 0 to 2 Percent Slopes

This soil map unit typically occurs on alluvial fans on gentle slopes. The dominant soil series, Cajon sand, is formed in alluvium from granitic sources. A typical soil profile consists of sandy topsoil, underlain by a second sand horizon to approximately 25 inches, with layers of gravelly sand, stratified sand and loamy fine sand below to at least 60 inches of depth. This soil is somewhat excessively drained. Minor components within this map unit are Manet, Kimberlina, and Helendale soils.

Cajon Sand, 2 to 9 Percent Slopes

This soil map unit is similar to the Cajon map unit except it occurs on slightly greater slopes (2 to 9 percent) and may have more layers of stratified gravelly sand in the subsoil.

Cajon Gravelly Sand, 2 to 15 Percent Slopes

This soil map unit is similar to the previous two Cajon map units except it occurs on slightly greater slopes (2 to 15 percent) and the topsoil and subsoil horizons have increased gravel content.

Cajon-Arizo Complex, 2 to 15 Percent Slopes

This soil map unit occurs on alluvial fans in high desert settings. The soil unit is 55 percent Cajon gravelly sand and 30 percent Arizo gravelly loamy sand with Cajon soils in wide margins of alluvial fans and Arizo soils in upper positions of alluvial fans near the mountains or foothills. The surface layer is typically pale brown gravelly loamy sand sitting on top of very gravelly pale brown loamy sand. Minor components within this map unit are Helendale, Bryman, and Joshua soils.

Cave Loam, Dry, 0 to 2 Percent Slopes

This soil map unit typically occurs on alluvial fan remnants on gentle slopes. The dominant soil series, Cave loam, is formed in alluvium from granitic sources. A typical soil profile consists of loam topsoil, underlain by stratified sandy loam to loam subsoil between 21 and at least 66 inches of depth. This soil is well drained, and very slightly to slightly saline. Minor components within this map unit are a Cave soil with clayey subsoil, Kimberlina, and Lavic soils.

Dune Sand

This soil map unit consists of unstable hills and ridges of loose, wind-deposited sand that is excessively drained and barren. Dunes are typically less than 15 feet high, and slopes are between 5 to 15 percent. Minor components within this map unit are Cajon sand, Riverwash and Villa loamy sand along the Mojave River, and Halloran soils.

Glendale Variant Silt Loam, Saline-Alkali

This soil map unit occurs on basin rims and lower margins of narrow alluvial fans with slopes ranging from 0 to 2 percent with vegetation consisting of salt-tolerant shrubs, grasses, and forbs. Soil profiles are very pale brown silt loam down to 11 inches with underlying material consisting of light yellowish brown and pale brown silty clay loam. Surface layer and underlying layers are moderately or strongly alkaline. Minor components within this map unit are small areas of Lavic soils. This soil is suited for irrigated crops in areas where they are reclaimed.

Helendale Loamy Sand, 0 to 2 Percent Slopes

This soil map unit typically occurs on alluvial fan remnants on gentle slopes. The dominant soil series, Helendale loamy sand, is formed in alluvium from granitic sources. A typical soil profile consists of loamy sand topsoil, underlain by sandy loam subsoil between 4 and at least 66 inches of depth. This soil is well drained, and non-saline to very slightly saline. Minor components within this map unit are Bryman, Kimberlina, and Cajon soils.

Helendale Loamy Sand, 2 to 5 Percent Slopes

This soil map unit occurs on alluvial fans and terraces and is derived primarily from granitic material. Slopes are broad and nearly level with many areas dissected by shallow intermittent drainageways. Vegetation is primarily yucca, desert shrubs, grasses, and forbs. The surface layer is very pale brown loamy sand about 4 inches thick with subsoil and the upper part of the substratum are brown, yellowish brown, and light yellowish brown sandy loam about 62 inches thick. Clay content decreases below a depth of 30 inches. Minor components include Bryman, Kimberlina, and Cajon soils.

Joshua Loam, 2 to 5 Percent Slopes

This soil map unit occurs on old stable terraces that have desert pavement. It formed in alluvium derived from mixed sources with broad, slightly convex slopes. Most areas are dissected by moderately deep intermittent drainageways. Typically, 70-90 percent of the surface layer is covered by desert pavement with a light yellowish-brown loam about 3 inches thick. Subsoils are brown and reddish brown gravelly sandy clay loam around 17 inches thick. These soils are often strongly alkali. Minor components within this map unit are Cajon soils.

Kimberlina Loamy Fine Sand, Cool, 0 to 2 Percent Slopes

This soil map unit typically occurs on skirts and aprons of alluvial fans on gentle slopes. The dominant soil series, Kimberlina loamy fine sand, is formed in alluvium from mixed sources. A typical soil profile consists of loamy fine sand topsoil, underlain by sandy loam, fine sandy loam, and loam subsoil between 7 and at least 60 inches of depth. This soil is well drained, and non-saline to very slightly saline. Minor components within this map unit are Helendale and Cajon soils.

Kimberlina Loamy Fine Sand, Cool, 2 to 5 Percent Slopes

This soil map unit is similar to the Kimberlina map unit except it occurs on slightly greater slopes (2 to 5 percent) and may have more layers of stratified gravelly sand in the subsoil.

Lavic Loamy Fine Sand

This soil map unit typically occurs on skirts and aprons of alluvial fans on gentle slopes. The dominant soil series, Lavic loamy fine sand, is formed in alluvium from granitic sources. A typical soil profile consists of loamy fine sand topsoil, underlain by multiple layers of sandy loam, loamy fine sand, loamy sand and loam subsoil between 10 and at least 49 inches of depth. This soil is well drained, and slightly to moderately saline. Minor components within this map unit are unnamed soils.

Peterman Clay

This soil map unit typically occurs on skirts of alluvial fans on gentle slopes. The dominant soil series, Peterman clay, is formed in fine-textured alluvium from mixed sources. A typical soil profile consists of clay topsoil, underlain by clay and gravelly clay subsoil to at least 60 inches of depth. This soil is moderately well drained, alkaline, and strongly saline. Minor components within this map unit are unnamed soils.

Playas

This soil map unit consists of playa areas consisting of lacustrine deposits derived from mixed sources. Minor components within this map unit are Bousic, Norob, and Halloran soils.

Rock Outcrop – Lithic Torriorthents Complex, 15 to 50 Percent Slopes

This soil map unit typically occurs on summits, backslopes and flanks of mountains on moderate to steep slopes. This map unit does not contain named soils. Rock outcrops, typically granitic, are interspersed with minimally developed soil underlain by bedrock within 8 to 20 inches of the soil surface. Minor components within this map unit are Sparkhule, and Trigger soils.

Wasco Sandy Loam, Cool, 0 to 2 Percent Slopes

This soil map unit typically occurs on aprons of alluvial fans on gentle slopes. The dominant soil series, Wasco sandy loam, is formed in alluvium derived from granite. A typical soil profile consists of sandy loam topsoil, underlain by additional sandy loam horizons to at least 60 inches of depth. This soil is well drained, and non-saline to very slightly saline. Minor components within this map unit are Cajon, Lucerne, and Bryman soils.

1.2.4 Climate

The Lucerne Valley has an arid climate characteristic of the California high desert. A nearby weather station in nearby Victorville (National Weather Service Cooperative Weather Station 049325) has recorded weather conditions since at least 1939 (Western Regional Climate Center (WRCC) 2021). Average high temperatures range from 58.86 degrees Fahrenheit (°F) in January to 98.16°F in July, while average low temperatures range from 29.63 °F in December to 61.24°F in July

Climate data for the Lucerne Valley obtained from four sources, including the Western Regional Climate Center (WRCC 2021), WeatherBase (WeatherBase 2021), Climate-Data (Climate-Data 2021), and Intellicast (Intellicast 2021), indicate that average annual rainfall in the vicinity is approximately 6.04 inches and average annual snowfall is approximately 2.03 inches.

1.2.5 Surrounding Land Uses

The Project area includes areas zoned as Lucerne Valley/Resource Conservation (LV/RC), Lucerne Valley/Rural Living (LV/RL), and Lucerne Valley/Agriculture (LV/AG) (San Bernardino County 2016). Portions of the gen-tie corridor routes are also in areas zoned as Lucerne Valley/Rural Living – 5 Acre Minimum (LV/RL-5) and Lucerne Valley/Agriculture- 40 acre minimum (LV/AG-40). Primary uses in and immediately surrounding the Project area are rural residential, recreation, open space, and transportation corridors.

2 Focus Study/Species of Concern

Rincon conducted a literature review including relevant lists from U.S. Fish and Wildlife Service (USFWS) and the California Natural Diversity Database (CNDDDB) for baseline information on biological resources potentially occurring on the Project area and in the immediate surrounding area. The review included information available in peer-reviewed journals, standard reference materials, and applicable conservation plans. Details of this review and the resulting list of potentially occurring species are provided in Section 4 and Appendix D.

Rincon conducted informal consultation with the California Department of Fish and Wildlife (CDFW) and USFWS through written notification of the proposed surveys and studies to be conducted for the Project. Rincon provided each agency with a memo submitted on July 16, 2021, outlining the proposed surveys, protocol, and approach to analyses for species relevant to each agency. Neither agencies have responded to the memos as of November 5, 2021. Consultation letters are provided in Appendix E.

3 Methodology

Biological conditions were evaluated by confirming applicable regulations, policies, and standards; reviewing biological literature and querying available databases pertinent to the Project area and vicinity (within 5 miles for CDFW's California Natural Diversity Data Base [CNDDDB] and 9 topographic quadrangles for California Native Plant Society's [CNPS] Inventory of Rare and Endangered Plants); and conducting a reconnaissance-level biological survey of the Project area. This assessment provides the existing biological conditions of the Project area at the time of the literature review and reconnaissance surveys. The methods employed are described in detail below. The findings and opinions conveyed in this report are based on this methodology.

3.1 Literature Review

Prior to conducting the biological field survey for this BRA, Rincon reviewed a variety of literature to obtain baseline information about the biological resources with potential to occur at the Project area and in the surrounding areas. Rincon conducted queries of several relevant databases that provide information about occurrences of special status biological resources:

- CDFW's CNDDDB (CDFW 2021a)
- CDFW's Biogeographic Information and Observation System (BIOS) (CDFW 2021b)
- U.S. Fish and Wildlife Service's (USFWS) Critical Habitat Mapper (USFWS 2021a)
- USFWS' Information for Planning and Consultation (IpaC) query (USFWS 2021b)
- USFWS' National Wetlands Inventory (NWI) (USFWS 2021c)
- U.S. Department of Agriculture (USDA), Natural Resource Conservation Service's (NRCS) Web Soil Survey (NRCS 2021a)
- Calflora's What Grows Here (Calflora 2021)
- California Native Plant Society's (CNPS) Online Inventory of Rare and Endangered Plants of California (CNPS 2021)

The Project area is located within the boundaries of the Desert Renewable Energy Conservation Plan (DRECP), a joint collaboration between the California Energy Commission, BLM, USFWS, and CDFW. In preparation of the DRECP, habitat models were developed to assess impacts to listed species and inform project planning and project alternatives where there is a lack of adequate data on species distribution. The DRECP is currently only implemented on BLM lands; however, the habitat suitability and range models can provide valuable information on the predicted distribution of listed species within the Project area.

Rincon biologists conducted a search and review of the CNDDDB for recorded occurrences of special-status plant taxa (species, varieties, and subspecies) and wildlife species prior to conducting field surveys. The CNDDDB is based on recorded occurrences of special-status taxa and does not constitute an exhaustive inventory of biological resources for any given area. The list of potentially occurring special-status plants and animals was developed based on the 5-mile radius CNDDDB search area and included regional habitat and vegetation diversity and was supplemented by other data and expert knowledge of Rincon biologists. Other data included database search results from the CNPS online Inventory of Rare and Endangered Plants of California (CNPS 2021) for the *White Horse Mountain*,

Grand View Mine and Lucerne Valley, California USGS 7.5-minute quadrangles (quad), and the ten surrounding quads, and results of a query of the USFWS website (USFWS 2021b) for Federally listed species occurring in San Bernardino County.

Rincon compiled a list of special-status plants species that have the potential to occur on the Project area and adjacent areas using the database searches conducted during the literature review as well as Rincon biologists' knowledge of local ecology, project elevation and regional setting, and botanical conditions. For the purposes of this report, special status plant taxa are those that are: 1) listed, proposed for listing, or candidates for listing as threatened or endangered by the USFWS under the FESA; 2) listed or proposed for listing as rare, threatened, or endangered by the CDFW under the CESA; and/or 3) CNPS California Rare Plant Rank (CRPR) 1B and 2.

The list of special-status plants was cross-referenced with the CDFW Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2021d) to verify rarity status for each special status plant with potential to occur on-site. Habitat requirements and flowering periods for special status plant taxa were obtained from the CNPS online Inventory of Rare and Endangered Plants of California (CNPS 2021), The Jepson Desert Manual (Baldwin et al. 2002), The Jepson Manual, Second edition (Baldwin et al. 2012), and the Calflora Online Species Database (Calflora 2021). Based on the information contained within these databases and inventories, Rincon biologists conducted an evaluation of the potential for occurrence within the Project area based upon each species' local distribution and habitat requirements (e.g., vegetation community type, soil type, elevation above mean sea level, etc.).

3.2 Field Reconnaissance Survey

On July 20, 21, and 22, 2021, Rincon biologists conducted field reconnaissance surveys in the Project area (Table 2). Because the Project area covers a large area, surveys were conducted on three consecutive days. Due to the timeframe for the proposed Project application, surveys could not be conducted within species-specific protocol windows. Therefore, focused protocol surveys were not conducted. Habitats on-site were mapped at a general level of scale. Specifically, the surveys focused on documenting existing conditions and biological resources, evaluating the Project area for potential to support special-status plant and wildlife species, and identifying special-status vegetation communities and potentially jurisdictional resources.

Prior to conducting the reconnaissance survey, Rincon biologists reviewed aerial photographs and database search results for special-status species records in the vicinity of the Project. The reconnaissance surveys consisted of a combination of vehicular surveys and pedestrian transects. Vehicular "windshield" surveys were conducted along gen-tie routes and in areas where vegetation cover and diversity were low. Pedestrian transects were conducted in areas containing higher vegetation diversity and cover, allowing biologists to ground-truth preliminary mapped vegetation communities and identify approximate community boundaries within natural areas. Additionally, biologists evaluated the general health and level of existing disturbances of the vegetation communities and evaluated the various habitats for their ability to support special status species. Biologists documented any sign of the presence of special status species within the proposed Project boundary. Biologists visually evaluated the entire Project area and all alternative gen-tie corridors. Results of the surveys were used to identify suitable habitat for special-status species that may require focused protocol surveys or other more involved analyses, and to develop a research approach for evaluating existing biological resources in the Project area.

Representative photographs were taken to document vegetation communities, species sign, or other notable biological resources observations. Photographs as well as a figure depicting photo point, burrow point, and species point locations are included in Appendix B. Compendia of plants and wildlife observed during surveys are included in Appendix C of this report. Details of the surveys (including dates, staff, and weather conditions) are presented in Table 2 below. Survey methods are described in greater detail below in Section 3.2.1 and Section 3.2.2.

Table 2 Survey Summaries

Survey	Date	Personnel	Time and Weather Conditions	
General Reconnaissance Survey and Vegetation Mapping	7/20/21	A, Trost, J. Hargis, S. Toback, J. Saavedra-Alvarado	Time:	7:15-14:30
			Temperature:	75-100°F
			Skies:	Clear
			Wind:	0-6 mph
General Reconnaissance Survey	7/21/21	A, Trost, J. Hargis, S. Toback, J. Saavedra-Alvarado	Time:	6:45-14:15
			Temperature:	77-102°F
			Skies:	Clear
			Wind:	2-7 mph
General Reconnaissance Survey	7/22/21	A, Trost, J. Hargis, S. Toback, J. Saavedra-Alvarado	Time:	6:30-12:00
			Temperature:	75-97°F
			Skies:	Partly cloudy
			Wind:	0-7 mph

3.2.1 Vegetation

Rincon conducted preliminary vegetation mapping of the Project area during the field reconnaissance surveys. Rincon completed an initial desktop vegetation mapping of the Project area based on aerial imagery. The preliminary desktop mapping was verified and refined during reconnaissance surveys. Field-based vegetation mapping and verification consisted of a combination of windshield surveys of ruderal and developed portions of the Project area, and meandering pedestrian transects of natural habitat areas to generally characterize the distribution of natural vegetation communities, habitats, residential development, and other disturbed areas on the Project area. All mapped boundaries of vegetation communities and land-cover types, and associated acreages presented in this report are approximate. Meandering pedestrian transects were conducted in areas containing natural habitat, which allowed for a more thorough assessment to distinguish vegetation communities and identify approximate community boundaries within natural areas. Natural vegetation communities identified in this report were classified based on the classification system presented in *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009).

Initial identification of plant taxa was accomplished in the field through examination of morphological characteristics and reference of regional plant field guides and dichotomous keys. Those specimens that could not be positively identified in the field were identified off-site using regional plant field guides, dichotomous keys, and a dissecting microscope. All species were identified to the level of determining rarity status. Taxonomic nomenclature used in species identification was based on Baldwin et al. (2002), Baldwin et al. (2012), and updates from the Jepson Online Interchange (UCB 2021).

3.2.2 Wildlife

General wildlife surveys were conducted through incidental observations made during the reconnaissance surveys with particular attention on native habitat and those areas with lower levels of disturbance and a higher likelihood of supporting special-status species, particularly burrowing owl, desert tortoise, and desert kit fox. Rincon biologists conducted vehicular windshield surveys and walked a variety of meandering transects during the reconnaissance surveys. Animal species observed directly or detected from calls, tracks, scat, nests, or other signs were documented. Zoological nomenclature for birds is in accordance with American Ornithologists' Union (AOU) Checklist of North American Birds (AOU 2021); for mammals is in accordance with Mammals of California (Wilson and Reeder 2005); and for amphibians and reptiles is in accordance with Society for the Study of Amphibians and Reptiles' (SSAR) Checklist of the Standard English & Scientific Names of Amphibians & Reptiles (SSAR 2017).

3.3 Jurisdictional Waters

On July 20 through 22, 2021, Rincon regulatory specialists and wetland biologists evaluated the Project area for the presence of potential jurisdictional areas subject to regulatory agency jurisdiction, including the USACE, Lahontan Regional Water Quality Control Board (LRWQCB), and CDFW. Rincon biologists also documented the locations of potential areas and features that warranted closer examination during subsequent surveys. A range of delineation techniques were used. In general, the surveys were conducted by driving throughout the site to selected areas where representative samples of potential jurisdictional ephemeral streams were identified during the pre-field literature review, including the streambeds mapped in the NWI and NHD. Existing baseline datasets such as the NWI and NHD were mapped at coarser scales than are appropriate for accurately delineating jurisdictional features, such as top of bank, and some older datasets have not been updated to reflect current land use conditions. Nonetheless, these datasets can provide important baseline information.

Rincon imported the locations of potential jurisdictional features into a global positioning system (GPS)-enabled tablet displayed over high-resolution aerial imagery to allow for evaluation of those features in the field. These features, and any other potential jurisdictional features that were encountered during the survey, were examined for the presence of defined channels with characteristic bed and bank features and indicators of water flow. Potential jurisdictional streams were mapped on recent aerial photographs. The landforms, vegetation, hydrology, and soil conditions were noted where these characteristics were relevant to identification of the feature. A handheld GPS unit with sub-meter horizontal accuracy was also used to record locations and collect general data, and to guide digitization of features with a geographic information system (GIS) software package. A summary of status of jurisdictional features in the Project area is presented within this GBRA. A full jurisdictional delineation report is presented under separate cover.

4 General Biological Survey Results

Based on the database and literature review, in conjunction with Rincon knowledge and expertise, Rincon identified 72 special-status plant species and 10 special-status wildlife species that required evaluation for potential to occur in the Project area. Special-status plant and wildlife species recorded within the vicinity of the Project area by the CNDDb, CNPS, or otherwise known to occur in the Project area, are listed in Appendix D.

4.1 Vegetation

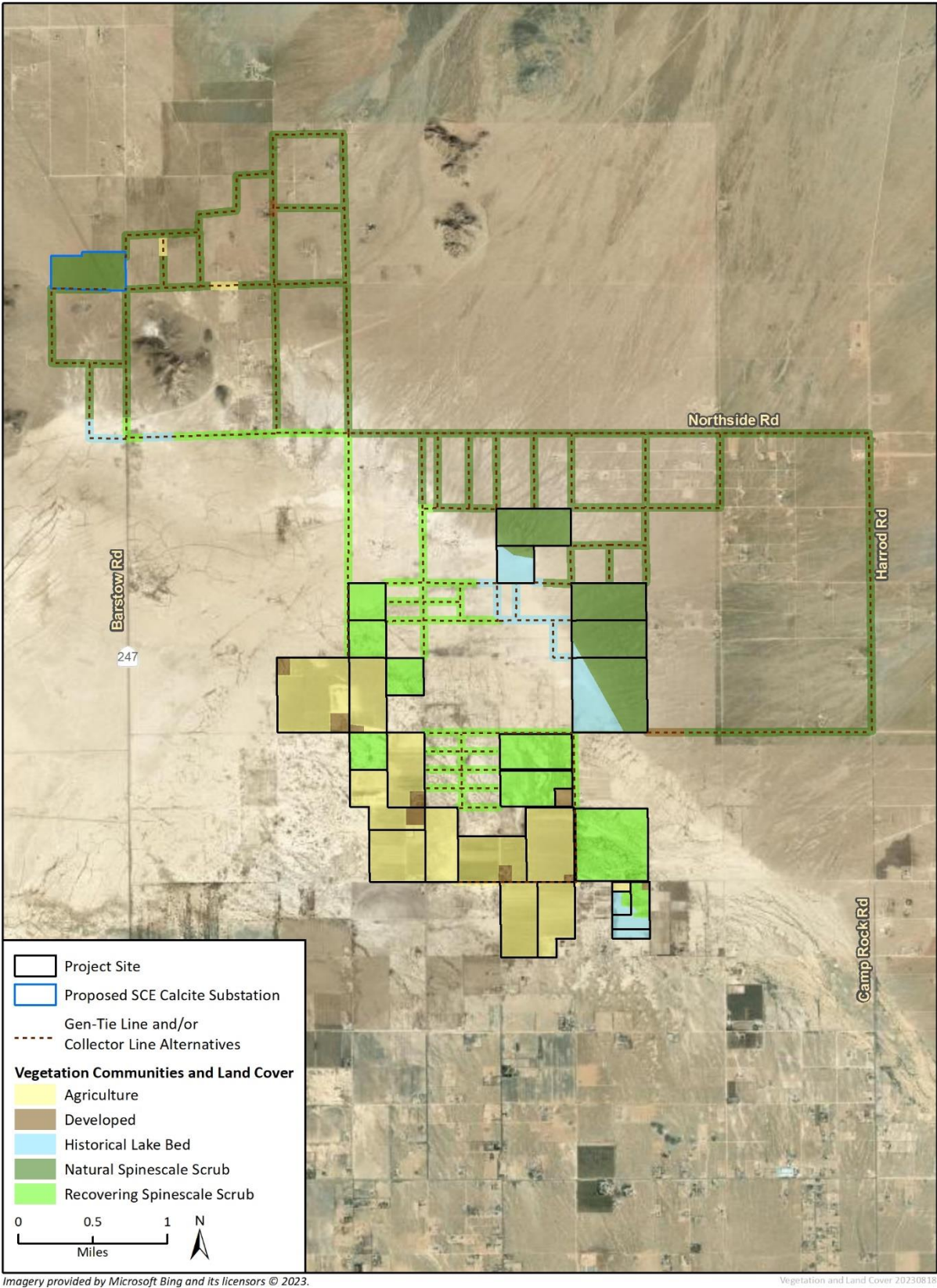
Vegetation types in the Mojave Desert are strongly influenced by arid climatic conditions and desert soils. Vegetation in the region includes a predominance of plant morphological adaptations to extreme aridity (e.g., waxy or resinous leaf cuticles, drought deciduous or succulent plants, woolly leaf pubescence, deep tap root systems, etc.) and saline-alkali soils (e.g., salt excretion, active transport systems, etc.). Vegetation structure is generally characterized by short-statured and widely spaced shrubs and arborescent shrubs resulting from a competition for soil water resources (Baldwin et al. 2012). Three vegetation types contribute to 75 percent of the land cover in the Mojave Desert region: Mojave creosote bush (*Larrea tridentata*) scrub (16,398 square miles), Mojave mixed woody scrub (Joshua tree woodland; 3,646 square miles), and desert saltbush (*Atriplex* spp.) scrub (1,510 square miles) (Davis et al. 1998). Other common vegetation types occurring in the region include desert and valley sink scrub, Mojave Desert wash scrub, and Mojave mixed steppe (Holland 1986). The primary disturbed or nonnative vegetation/land cover types within the Mojave Desert include annual grasslands, agricultural lands, and developed areas.

Desert-adapted plant species often show low resilience to disturbance, typically requiring long periods to recover. Often, full recovery to a natural community fails and the community follows successional pathways towards alternative stable states dominated by invasive species (Beisner et al. 2003; Chartier and Rostagno 2006). Portions of the Mojave Desert that were at one time cleared for agriculture or other development currently consists of moderate to highly degraded conditions, and often contain a high proportion of associated invasive, nonnative species (Thomas et al. 2004).

Rincon biologists recorded and identified a total of 16 plants during the reconnaissance survey. Appendix C provides a list of all plant species observed.

Rincon biologists mapped one natural vegetation community within the Project area: spinescale scrub (*Atriplex spinifera* Shrubland Alliance). This vegetation community consists of natural spinescale scrub outside of the historic limits of the dry lake, and areas of recovering spinescale scrub located within the historical lakebed. Three additional land cover types that did not meet the membership rules for classification as one of the recognized vegetation types in the Manual of California Vegetation, Second Edition (MCV2) (Sawyer et al. 2009) were also identified and mapped within the Project area. These land cover types include historical lakebed, developed, and agriculture (Figure 5). Brief descriptions of the natural vegetation community and the other land cover types present in the Project area are provided below. Appendix C provides a complete list of plant species observed during surveys. Mapping of vegetation communities and land cover along the gen-tie and collector line alternative routes was completed at a course scale and shows the dominant land cover within the 300-foot corridor. Acreages of land cover types along these alternative routes have not been included in the project acreage tallies listed below.

Figure 5 Vegetation Communities and Land Cover Types



Spinescale Scrub (*Atriplex spinifera* Shrubland Alliance)

Spinescale scrub is found throughout portions of the Project area (Figure 5). Associated shrub species include burrobush (*Ambrosia salsola*), allscale saltbush (*Atriplex polycarpa*), California jointfir (*Ephedra californica*), alkali heath (*Frankenia salina*), San Joaquin snakeweed (*Gutierrezia californica*), alkali goldenbush (*Isocoma acradenia*), and budsage (*Picrothamnus desertorum*). Within the Project area, this vegetation community was often interspersed with varying amounts of creosote bush (*Larrea tridentata*). This vegetation community is often found on alluvial fans and old lake beds (Sawyer et al. 2009). Within the Project area, the spinescale scrub vegetation community can be divided into two distinct types: natural spinescale scrub and recovering spinescale scrub.

Natural Spinescale Scrub

The natural spinescale scrub vegetation community is located in the northern portion of the Project area in the proposed substation development area and in the eastern parts of the Project area (Figure 5). The natural spinescale scrub vegetation community generally consists of a dense shrub canopy layer and moderate levels of vegetation diversity. Human disturbances such as vehicle tracks, trash dumps, and man-made berms related to surrounding residential and agricultural development. The least disturbed portions of natural spinescale scrub with the highest vegetation diversity currently exists within the northern portion. Soils in these areas consist mainly of loamy sand (Figure 4). This vegetation community comprises 422 acres of the Project area.

Recovering Spinescale Scrub

The remaining spinescale scrub vegetation community is located within the historical lakebed throughout the central and southern portions of the Project area and displays varying levels of disturbance (Figure 5). The spinescale scrub in these areas is characterized by a sparse shrub canopy layer, signs of human disturbance, and clay-dominated soils. Overall, this vegetation community is low quality due to high levels of disturbance and low vegetation diversity. This vegetation community comprises 471 acres of the Project area.

Historical Lakebed

This land cover type consists of the dry bed of Lucerne Lake, which is largely unvegetated. Soils are very alkaline due to repeated inundation and evaporation events. What little vegetation is present is concentrated within cracks in the soils and low points where water is present for longer durations. Common species include bush seepweed and spinescale scrub. This land cover type comprises 132 acres of the Project area.

Developed

This type of land use typically does not contain naturally occurring vegetation communities and is typically graded, and in many cases is bordered by ruderal vegetation. These areas tend to have high levels of disturbance immediately adjacent to structures. Within the Project area, developed areas consist of roadways, cleared areas, pull-outs, road shoulders, and residential development. Fifty-four (54) acres of developed land and 0.5-mile of paved roads are present in the Project area.

Agriculture

This type of land use is occupied by agricultural development. Within the Project area, agricultural areas include fallow fields and land currently being maintained for agricultural purposes. Eight hundred and fifty-three (853) acres of agriculture are present in the Project area.

4.2 General Wildlife

The desert scrub communities in the vicinity of the Project area support a wide variety of reptiles, birds, and mammals. Common reptiles observed or expected to occur include, but are not limited to, side-blotched lizard (*Uta stansburiana*), western whiptail (*Aspidoscelis tigris*), desert spiny lizard (*Sceloporus magister*), Mojave green rattlesnake (*Crotalus scutulatus*), zebra-tailed lizard (*Callisaurus draconoides rhodostictus*), coachwhip (*Coluber flagellum piceus*), and gopher snake (*Pituophis melanoleucus*). Bird species found within the Project area include, but are not limited to, red-tailed hawk (*Buteo jamaicensis*), common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), and loggerhead shrike (*Lanius ludovicianus*). Mammals occupying desert scrub habitat types are black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), white-tailed antelope ground squirrel (*Ammospermophilus leucurus*), kangaroo rats (*Dipodomys* sp.), deer mouse (*Peromyscus maniculatus*), desert kit fox (*Vulpes macrotis*), coyote (*Canis latrans*), and American badger (*Taxidea taxus*). Many of these species were observed within the Project area during the reconnaissance field surveys. Appendix C provides a complete list of wildlife species observed during surveys.

4.3 Sensitive Biological Resources

Local, State, and Federal agencies regulate special-status species and require an assessment of their presence or potential presence to be conducted on-site prior to the approval of any proposed development on a property. This section discusses sensitive biological resources observed on the Project area and evaluates the potential for the Project area to support other sensitive biological resources. Assessments for the potential occurrence of special-status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDB, species occurrence records from other sites in the vicinity of the survey area, and previous reports for the Project area. The potential for each special-status species to occur in the PV development, the substation parcels, and portions of the gen-tie alternatives with natural scrub habitat was evaluated according to the following criteria:

- **Not Expected.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Low Potential.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species

has a high probability of being found on the site.

- **Present.** Species is observed on the site or has been recorded (e.g., CNDDDB, other reports) on the site recently (within the last 5 years).

Appendix D provides the complete list of all special-status resources with records within a 5-mile CNDDDB search and 9-quad CNPS query for the Project area.

4.3.1 Special-Status Plant Species

Based on the literature review, 72 special-status plant species have been documented in the vicinity of the Project area and surrounding quadrangles. Sixty-four of these species were eliminated from the analysis due to a lack of habitat or soil requirements and/or known distribution and elevation ranges. Most of these species are known to occur in the San Bernardino Mountains and foothills to the south of the Project area, but do not occur within the Project area or within Lucerne Valley. Eight species have a low to moderate potential to occur in the natural scrub communities present on the Project area and have a CRPR ranking of 1B.1 to 2B.2. None are Federally or State-listed. This list of species consists primarily of annual herbs known to occur in Mojavean desert scrub and playa habitats.

Two species have been assessed as having a moderate potential to occur within the Project area: Beaver Dam breadroot (*Pediomelum castoreum*) and Parish's phacelia (*Phacelia parishii*).

Six species have been assessed as having a low potential to occur within the Project area: Parish's brittlescale (*Atriplex parishii*), alkali mariposa lily (*Calochortus striatus*), purple-nerve cymopterus (*Cymopterus multinervatus*), Parish's popcornflower (*Plagiobothrys parishii*), thorny milkwort (*Polygala acanthoclada*), and California alkali grass (*Puccinellia simplex*).

Of these species, four have the potential to occur within the natural and recovering spinescale scrub habitats on site: Parish's brittlescale, alkali mariposa lily, thorny milkwort, and California alkali grass. Purple-nerve cymopterus has the potential to occur within the easternmost parcels outside of the dry lakebed, particularly within areas of higher creosote concentration. Beaver Dam breadroot has the potential to occur within the northern portion, particularly within areas of higher creosote concentration. Due to alkali soil requirements, Parish's phacelia has the potential to occur within the dry lakebed and recovering spinescale habitats. Parish's popcornflower occur in very mesic sites, therefore, would only be found in very wet areas of the Project area.

No special-status plants were observed during the reconnaissance surveys.

4.3.2 Special-Status Wildlife Species

Rincon evaluated 10 special-status wildlife species for their potential to occur within the Project area. Species are considered to have special status based on a State and/or Federal listing, or because they are considered a California Species of Special Concern (SSC) or are protected by CDFW. Three special-status wildlife species were observed directly or by sign during the reconnaissance surveys. These species are:

- burrowing owl, SSC (*Athene cunicularia*)
- prairie falcon, WL (*Falco mexicanus*)
- loggerhead shrike, SSC

Four species have been assessed as having a moderate to high potential to occur within the Project area: desert tortoise (*Gopherus agassizii*), golden eagle (*Aquila chrysaetos*), Bendire's thrasher (*Toxostoma bendirei*), and Le Conte's thrasher (*Toxostoma lecontei*).

Two species have been assessed as having low potential to occur within the Project area: western mastiff bat (*Eumops perotis californicus*) and California condor (*Gymnogyps californianus*).

Two species have been assessed as not expected to occur within the Project area: silver-haired bat (*Lasionycteris noctivagans*) and Mohave ground squirrel (*Xerospermophilus mohavensis*). These species are not expected to occur within the Project area based on the absence of records within Lucerne Valley, lack of suitable habitat on site, and the location of the Project is outside of the known range of the species.

Special-status species with a moderate to high potential to occur within or adjacent to the Project area are described in detail below. Mohave ground squirrel and mountain lions (though not expected) are also discussed given their regional significance.

Desert Tortoise

The desert tortoise is a long-lived species that is slow growing with low reproductive rates. The species is found on flats, alluvial fans, bajadas, and rocky terrain throughout the Mojave Desert and in portions of the Sonoran Desert. This species has a suite of adaptations for survival in arid environments, and can regulate water, salt, and energy imbalances over short and long durations allowing individuals to meet annual energy requirements when water and food resource availability is unpredictable (Peterson 1996). Activity patterns of the desert tortoise is influenced by temperature, with daily activity patterns varying both among seasons and within seasons based on annual and daily variations in ambient temperature (Averill-Murray et al. 2002; Luckenbach 1982; Wilson et al. 1999). Plant species composition may be important for local distribution, but the communities of choice vary among populations of the species. In the Western Mojave Desert the species is often associated with creosote scrub habitat, Joshua tree woodland, and desert washes, as well as other communities (Baxter 1988; Germano et al. 1994).

The desert tortoise is Federally- and State-listed as threatened. Therefore, potential impacts to the species require incidental take permits from both the USFWS and CDFW.

The northern and eastern portions in the Project area (Figure 10) contains approximately 422 acres of suitable habitat for desert tortoise where relatively undisturbed natural desert scrub communities are present. The remaining spinescale scrub communities within the Project area are not suitable for desert tortoise. The areas of recovering spinescale and the historic lakebed exhibit high levels of human disturbance and low vegetation diversity, and do not provide the critical habitat components necessary to support desert tortoise occupation.

The CNDDDB contains two occurrences of desert tortoise within 5 miles of the Project area (Occurrence No. 5, 1986, and No. 20, 1986). Given the lack of any recent records of desert tortoise in this area, it is possible that the species is not currently present in the immediate vicinity of the Project area. However, based on the proximity to DRECP modeled habitat (Nussear et al. 2009) and the presence of marginally to moderately suitable native scrub habitat, the desert tortoise has a moderate potential to occur in the parts of the Project area mapped as natural spinescale scrub.

Burrowing Owl

The burrowing owl is a small owl found in dry, open areas with low vegetation in western North America. Preferred habitats include grasslands, rangelands, or agricultural areas, but may also occur in fallow fields or vacant lots in developed areas. Burrowing owls are primarily insectivores, but will also eat small mammals such as mice and voles. They rely on existing burrows of other animals, particularly California ground squirrel, which they modify for their own use. The burrowing owl is an SSC and is protected by CFGC Section 3503 et. seq. and the Federal MBTA.

Two burrowing owls were flushed from an active burrow located within a drainage pipe during the reconnaissance surveys in the southwestern portion of the Project area (Appendix B, Figure 11; Appendix B, Photo 8). The CNDDDB includes four records of burrowing owl within 5 miles of the Project area: Occurrence No. 1296 (2010), No. 1295 (2009), No. 1294 (2009), and No. 1047 (2006).

Portions of the Project area and adjacent areas with low density scrub cover include potentially suitable foraging habitat for the species and burrows suitable for occupation by burrowing owls. Based on the CNDDDB occurrences, presence of suitable habitat, and the siting of two individual burrowing owls and an active burrow, the species is considered present within the Project area and may occur for wintering or breeding throughout the Project area, wherever suitable burrows occur.

Le Conte's Thrasher

Specific breeding populations of Le Conte's thrasher are considered a California SSC, and all populations are protected during nesting season under the MBTA and CFG Code 3503. This species typically inhabits sparsely vegetated desert flats, dunes, alluvial fans, or gently rolling hills that have a high proportion of cholla cactus (*Cylindropuntia* spp.), or other desert habitats with similar structural profiles. Sparsely vegetated areas or areas lacking vegetation, and developed areas are generally avoided by the species. This species typically hunts insects on the ground and nests in saltbush shrubs. In its habitat, shrubs are well scattered with contiguous or closed cover usually less than 45 feet in any direction. Substrates are typically sandy and rarely composed of a large proportion of rock or of deep silty clays.

The CNDDDB includes four records of Le Conte's thrasher within 5 miles of the Project area: Occurrence No. 18 (1925), No. 68 (1964), No. 71 (1978), No. 70 (1978), and No. 144 (1988). Based on the presence of suitable foraging and nesting habitat, the species was determined to have a high potential to nest within suitable natural scrub habitat throughout the Project area. Suitable nesting habitat for Le Conte's thrasher is limited to the relatively undisturbed scrub habitat to the east and north of the historical dry lake margins.

Golden Eagle

The Mojave Desert region provides habitat for a number of year-round resident and migratory raptor species, including golden eagle. Raptors are generally protected by CFGC Section 3503 et. seq. and the Federal MBTA. Specific legal protections are afforded to the golden eagle pursuant to BGEPA and CFGC Section 3511. Mitigation measures for potential project impacts typically include nesting surveys and avoidance of active nests and surrounding buffers.

Golden eagles typically nest on cliffs and in tall trees able to support large platform nests that can be up to 10 feet in diameter. The species usually nests in rugged open habitats with canyons and escarpments. Golden eagles feed primarily on lagomorphs and other large rodents, but diet can be highly variable and include other mammals, birds, and reptiles, as well as carrion. The species typically requires open terrain such as grasslands, deserts, and savannahs for foraging.

No golden eagles were observed site during surveys; however, the CNDDDB contains 11 occurrences within 5 miles of the Project area, the closest is from a nest on a cliff 1.03 miles west of the site (Occurrence No. 161, 2011). Transmission line towers occur adjacent to the Project area and within the northwestern portion of the site. Research was conducted in 2012 to assess golden eagle home range size in the DRECP plan Area. A nest was located east of White Horse Mountain and an eagle was tracked using radio telemetry. The nest site was located in the core home range that extended to the northeastern edge of Lucerne Lake (Katzner et al., 2012).

Desert scrub within the Project area provides suitable foraging habitat for this species. Based on the absence of suitable nesting habitat within the Project, there is no potential for the species to nest on site; however, this species has a moderate potential to forage within undeveloped portions of the Project area.

Prairie Falcon

Prairie falcon are pale brown, medium sized raptors. They occur in dry open habitats with cliffs or rocky bluffs for nesting. Adults may forage far afield over various habitat types including wetlands; however, this species primarily forages on grassland habitats. The CNDDDB contains five occurrences of prairie falcon within 5 miles of the Project area: Occurrence No. 88 (1980), No. 103 (2017), No. 87 (1978), No. 91 (1980), and No. 92 (1979). Suitable foraging habitat occurs within the Project area, and suitable nesting habitat occurs in the mountains to the west of the Project area. In addition, an individual prairie falcon was observed flying over an active agricultural area in the southern portion of the Project area during the July 2021 reconnaissance surveys. Therefore, there is a high potential for this species to forage within the Project area, but there is a low potential for this species to nest on site.

Loggerhead Shrike

The loggerhead shrike is a USFWS Bird of Conservation Concern (BCC) and State SSC. This species can be found in lowlands and foothills throughout California. It is absent or rare in the State in the highest mountain ranges and the north coast. This species is a year-round resident in the southern deserts, parts of the south and central coasts, and the Central Valley, where numbers are augmented by migrants from November to February (Yosef 1996). Loggerhead shrikes prefer open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches, and require impaling sites, such as thorns, sharp twigs, or barbed wire, for skewering and manipulating their prey. The species nests in densely foliated trees or shrubs and feeds on, "arthropods, amphibians, small to medium-sized reptiles, small mammals and birds" (Yosef 1996).

Although there are no CNDDDB records of loggerhead shrike within 5 miles of the Project area, an individual was observed during the reconnaissance surveys. Suitable nesting habitat (predominantly in desert scrub, but anywhere with shrub heights of 1 to 2 meters or more) is present in the Project area. Based on presence of potential nesting and foraging habitat and nearby observations, the species is considered to have high potential to nest within the 924 acres of suitable scrub habitat within the Project area.

Bendire's Thrasher

Bendire's thrasher is a migratory spring/summer resident in flat areas of the southern California desert. This species is found in sparse desert habitats such as sagebrush (*Artemisia* sp.) with scattered junipers (*Juniperus* sp.) at higher elevations. In the Mojave Desert, this species is primarily

found in Joshua tree, cactus, or yucca habitats. Suitable nest species include cholla (*Cylindropuntia* sp.), yucca (*Yucca* sp.), paloverde (*Parkinsonia* sp.), thorny shrubs, or small trees.

There are two CNDDDB records within 5 miles of the Project area (Occurrence No. 143, 1986 and No. 184, 2008). The site is also within the DRECP modeled range (Davis and Soong 2013), and suitable nesting habitat is present in portions of the Project area and within a 500-foot buffer. The species may use the spinescale scrub vegetation community in the Project area for nesting and foraging; therefore, there is moderate potential for this species to occur in the Project area.

Desert Kit Fox

The desert kit fox is generally protected as a fur-bearing mammal by the CFGC Section 4000 et. seq., which requires a permit for the take of this species for commercial purposes, and limits the methods used to take the animal. It is a widespread resident of the North American southwest, found in arid climates from southern Oregon and Idaho to Baja California and central Mexico. This species is about the size of a house cat, weighing 4-7 pounds and is about 30 inches in length. Its diet consists of black-tailed jackrabbits and desert cottontails, rodents (especially kangaroo rats [*Dipodomys* sp.]) and ground squirrels, insects, reptiles, and some birds, bird eggs, and vegetation. Desert kit foxes can be found in grasslands, open desert scrub, and occasionally in farmland. The species is locally common in portions of its range and is not listed as a Special Animal by the CDFW (2021c).

Desert kit fox occurrences are not currently maintained by the CNDDDB; however, the species was recently observed in the Lucerne Valley (URS 2012), and the proposed Project area includes suitable habitat for the species. The species has a high potential to den within the natural scrub habitat areas of the Project area, and, as such, the species may also occur transiently (during dispersal and foraging) over the disturbed areas of the Project area.

Mohave Ground Squirrel

The Mohave ground squirrel is a small (approximately 8 to 9 inches long), brown, diurnal ground squirrel with no conspicuous markings, and a short tail that is broadly haired. Despite its listing as threatened under the CESA and its designation as a State-listed as threatened species since 1971, the species has not been well studied; Leitner (2008) notes that few studies had been published on the distribution, abundance, or population trends since the listing of the species. The Mohave ground squirrel occupies a wide variety of desert vegetation communities; however, the species prefers sandy/gravelly soils as a burrow substrate (Burt 1936; Wessman 1977). The species relies on a specific set of plant species as food resources including Joshua tree fruits, winterfat (*Krascheninnikovia lanata*), and spiny hopsage (*Grayia spinosa*) (Stewart 2005); however, the Mohave ground squirrel often behaves as a generalist, switching among several plant species seasonally or possibly by preferences (Burt 1936; Recht 1977; Wessman 1977; Zembal and Gall 1980; Leitner and Leitner 1989; Leitner and Leitner 1990).

The species is found in the Western Mohave Desert and its historical range totaled roughly 20,000 square kilometers (Leitner 2008). The Mohave ground squirrel's range extends from Palmdale and Victorville in the south to Owens Lake in the north and is generally bounded to the west by the escarpment of the Sierra Nevada, and to the east by the Mohave River (Gustafson 1993; Stewart 2005; Leitner 2015). The historic range of the Mohave ground squirrel extends to the southwest of Lucerne Valley but does not include Lucerne Valley. The closest CNDDDB occurrence is within 5 miles of the Project area; however, this occurrence was recorded in 1886.

According to the most recent Five-Year Status review, between 2008 and 2012, protocol trapping and camera surveys were conducted at 27 locations between Barstow and Lucerne Valley, and no Mojave ground squirrel were found (Leitner 2015). Additionally, no Mojave ground squirrel have been reported east of the Mojave River since 1977, and it may be extirpated from this region (Leitner 2015).

Based on all available information, the Mohave ground squirrel is not expected to occur in the Project area. The Project area is located outside of the known historical range of the species, and there are no recent occurrences of the species in the vicinity of the Project area.

Mountain Lion

The Fish and Game Commission received a petition on June 25, 2019 to list an evolutionarily significant unit (ESU), comprised of six populations of mountain lion in southern and central coastal California, as threatened or endangered under the CESA. The Fish and Game Commission's determination on the status of the species is due November 3, 2021. Until the determination is made, the mountain lion is granted "candidate" status, and receives protection as though it were listed. Mountain lions require large areas of relatively undisturbed habitats with adequate connectivity. They have large home ranges that include heterogeneous habitats that often consist of pine forests, riparian and oak woodlands, streams, chaparral, and grasslands, though they are also known to occur in desert habitats. Suitable habitat for this species is present within the Project area as all sites are located within open desert habitat within the species' range and may be subject to transient travel by mountain lions in the regional vicinity.

Nesting Birds

The Project area contains suitable nesting habitat for a variety of native avian species common to the desert, including black-throated sparrow (*Amphispiza bilineata*), horned lark, northern mockingbird (*Mimus polyglottos*), and cactus wren (*Campylorhynchus brunneicapillus*). Native bird nests are protected by CFGC Section 3503 and the MBTA. The nesting season generally extends from February through July in the Mojave Desert but can vary based upon annual climatic conditions.

4.3.3 Sensitive Plant Communities and Critical Habitats

No sensitive natural communities have been recorded in the Project area, and none were observed during the surveys.

No Federally designated critical habitats occur within the Project area.

4.3.4 Jurisdictional Waters and Wetlands

Within the arid and semi-arid western United States limited precipitation restricts wetland and riparian resources to 1-5% of the land surface, a relatively low proportion compared to other systems globally; the proportion of wetland resources is even lower (<1%) in extremely arid areas such as the Mojave Desert and the Great Basin (USACE 2008a).

Rincon delineated 8.34 acres of retention basins, leaked pipeline, and ephemeral streams, and 91,251 linear feet of ephemeral streams within the Project area. The only riparian habitat observed is limited to a small, isolated wetland at what is likely an irrigation pipeline leak.

Figure 6 through Figure 9 depict the location and extent of delineated stream segments and retention basins. Table 3 lists the delineated segment ID, type, hydroperiod, average top of bank width (in feet), and potential CDFW and RWQCB jurisdiction in linear feet and acreage.

Indicators of fluvial activity such sediment transport and deposition, shelving, and the presence of litter and debris were observed in the ephemeral streams. Soils in these channels include smaller particle sizes such as silt and clay. Indicators of fluvial activity were often absent or severely obscured where a stream is present on roads. Stream segments were only delineated where at least faint evidence of flow was present.

The slope gradient nears zero in areas adjacent to the dry lakebed, and any infrequent, low-volume, short-duration water flows in the very small and shallow delineated streams disperse, dissipate, and percolate into the mostly level ground before reaching the dry lake. They lack a clear surface connection, via defined channels with bed and bank, to the dry lakebed, and there is no discernible distinction with adjacent uplands.

Rincon biologists delineated and mapped 33 stream segments, 4 retention basins, and 1 isolated wetland. These streams convey flows only during and immediately after high precipitation events. Evidence of fluvial activity in the majority of the streams is faint, and primarily consists of weakly defined multiple-thread channels with very low banks, minor changes in soil character, and marginally decreased vegetative cover. The delineated streams were distinct and separated by local topography and elevations of land that confine them to a definite course when waters rise to their highest level. Vegetation species composition in the streams and stream margins does not differ from the surrounding areas, while vegetation density is generally slightly lower. Soils consist primarily of unconsolidated small particles including sand and gravel. No evidence of higher concentrations of suspended sediment or greater transport rates of bedload sediment was observed in these features. Infiltration rates are high. Overall, the movement of sediment, organic debris, and nutrients is extremely limited.

Based on a review of historical aerial photographs, it is likely that these streams conveyed higher volume flows and were more clearly defined prior to the construction of roads and increased human activity on and around the site. In their current condition, most streams have been fragmented or isolated by formal and informal roads and OHV tracks, greatly reducing fluvial activity. Many of these are indicative of partially abandoned channels, based on the isolation from their source and very low fluvial activity.

A number of ephemeral streams surrounding the dry lakebed are mapped in the NWI. They are classified as riverine, intermittently flooded streambeds (Cowardin code R4SBJ). In these areas, most of the streambeds are depicted as connecting to the dry lakebed; however, field observations indicate that the streams on-site lack a clear surface connection via defined channels with bed and bank to the dry lakebed, with any channel flow currently dissipating to sheet flow prior to entering the modern extent of the dry lake. The NHD mapping data is similar to the NWI in that streambed features are depicted in approximately the same locations, only fewer features are depicted. Similarly, some features are depicted connecting to the dry lakebed, and others are not.

The four retention basins on the Project area are man-made and associated with agricultural uses from surrounding farmlands. Of the four basins, one was determined to consist of wetland waters based on a sampling point examined in the bed (see Soils section). Two basins could not be accessed and were therefore assumed to consist of wetland waters. The other basin did not contain hydric soils and was therefore not a wetland. According to the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2019), artificially constructed

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lakes and ponds created in dry land such as settling basins are excluded from the definition of Waters of the State. Therefore, the four detention basins are not under jurisdiction of the RWQCB.

One isolated wetland was observed in the western portion of the Project area in a small puddle dominated by cattails. Ponding and a hydrogen sulfide odor were observed at the time of the survey.

Figure 6 Jurisdictional Delineation Results

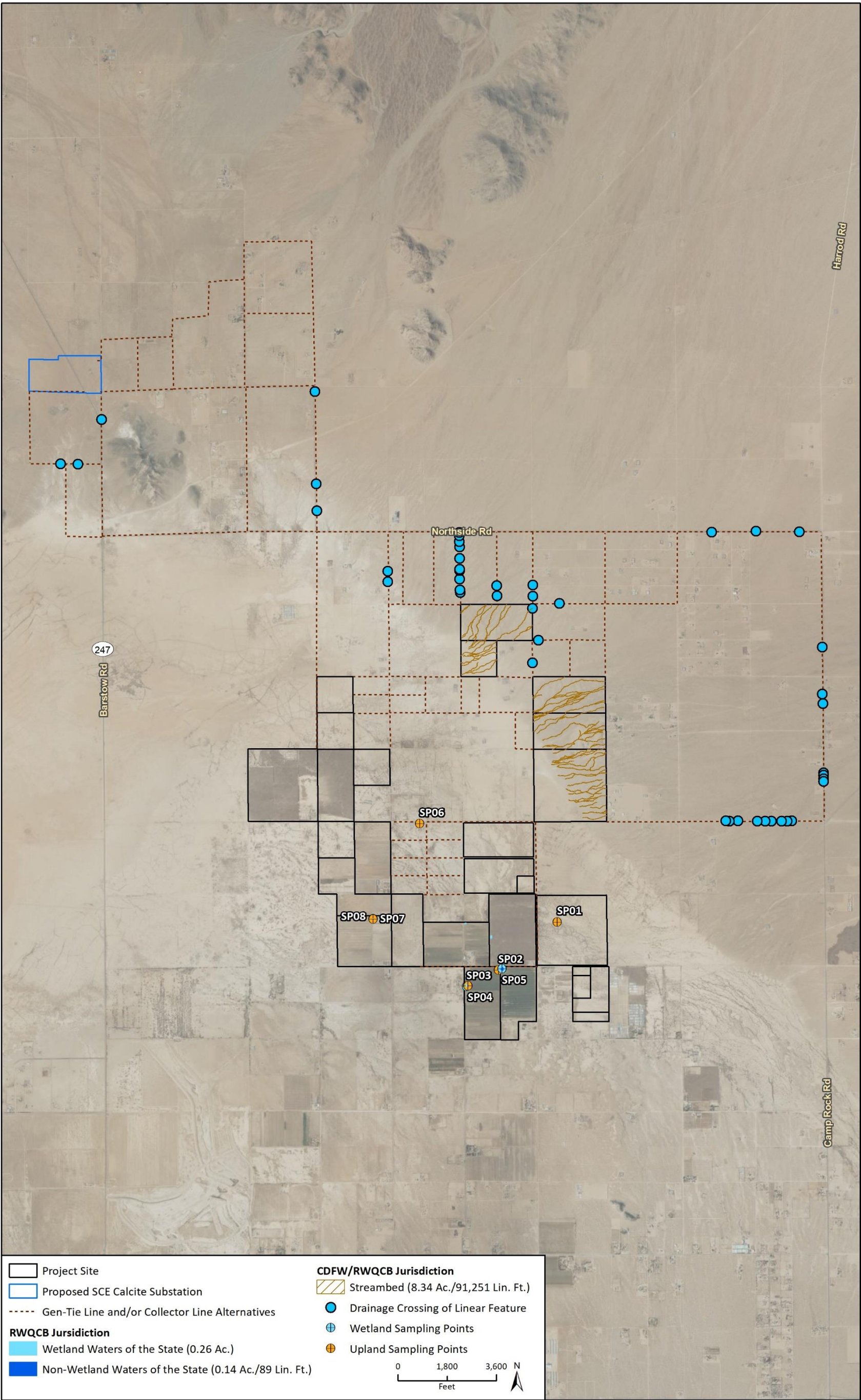


Figure 7 Jurisdictional Delineation Results- Page 1



Figure 8 Jurisdictional Delineation Results – Page 2

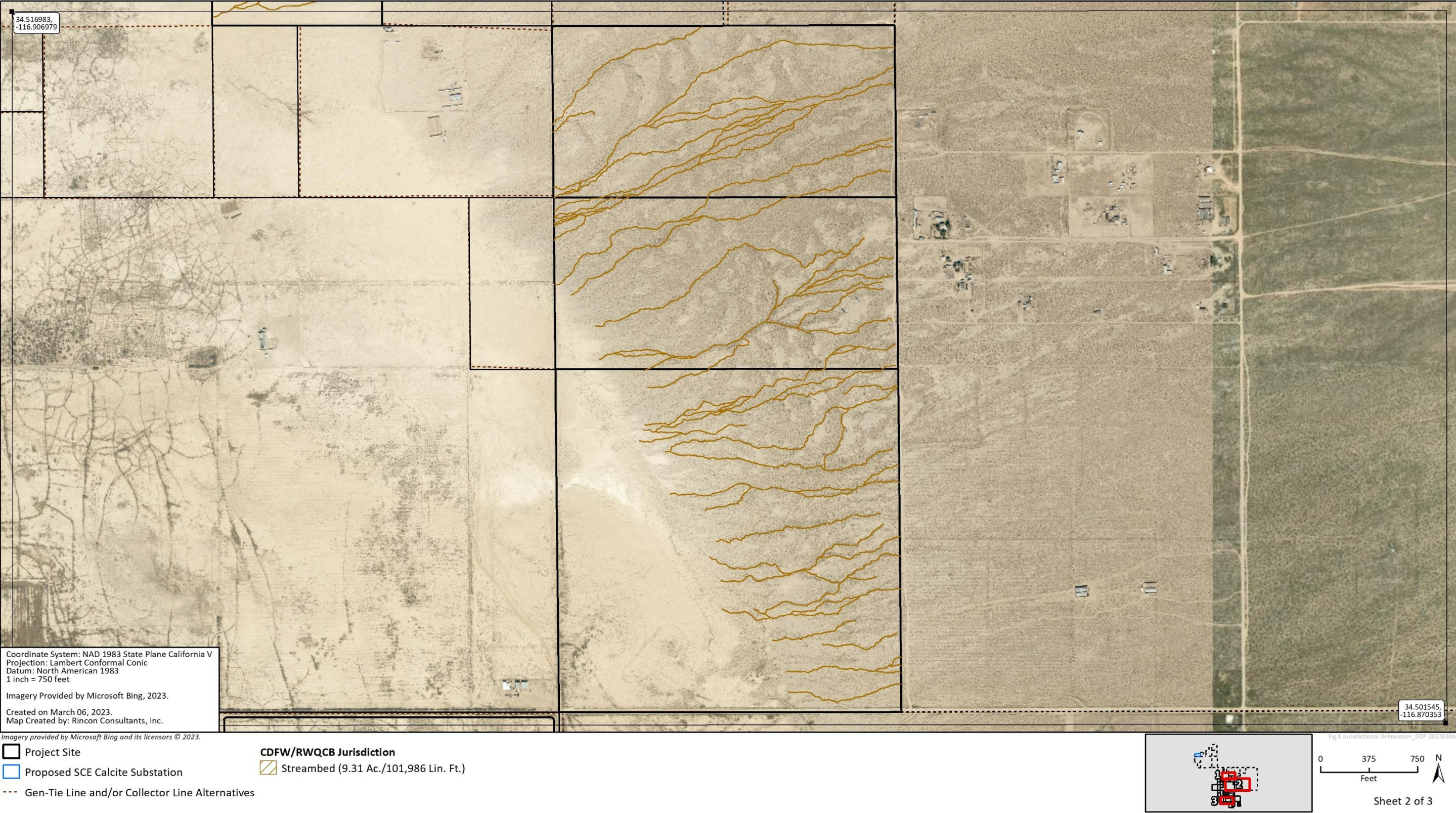


Figure 9 Jurisdictional Delineation Results- Page 3



Table 3 Summary of Delineated Features On-site

Segment ID	Feature Type	Hydroperiod	Average Top of Bank Width (feet)	RWQCB / CDFW Jurisdiction			
				Non-wetland Waters of the State / Streambed (linear feet)	Non-wetland Waters of the State / Streambed (acres)	Wetland Waters of the State / Streambed (linear feet)	Wetland Waters of the State / Streambed (acres)
1	Stream	Ephemeral	4	967.353891	0.085814	--	--
2	Stream	Ephemeral	4	1360.567557	0.116149	--	--
3	Stream	Ephemeral	4	647.256921	0.059694	--	--
4	Stream	Ephemeral	4	726.078323	0.06688	--	--
5	Stream	Ephemeral	4	2354.15673	0.214291	--	--
6	Stream	Ephemeral	4	1940.806549	0.177999	--	--
7	Stream	Ephemeral	4	2962.534702	0.271922	--	--
8	Stream	Ephemeral	4	1418.101864	0.130374	--	--
9	Stream	Ephemeral	4	3211.508584	0.293353	--	--
10	Stream	Ephemeral	4	1967.575367	0.180915	--	--
11	Stream	Ephemeral	4	3206.660969	0.294281	--	--
12	Stream	Ephemeral	4	1226.670083	0.112977	--	--
13	Stream	Ephemeral	4	6039.176888	0.552948	--	--
14	Stream	Ephemeral	4	6956.778157	0.637677	--	--
15	Stream	Ephemeral	4	1931.452749	0.177812	--	--
16	Stream	Ephemeral	4	2432.641993	0.223512	--	--
17	Stream	Ephemeral	4	3130.295395	0.28758	--	--
18	Stream	Ephemeral	4	3591.798215	0.329689	--	--
19	Stream	Ephemeral	4	8533.160415	0.777839	--	--
20	Stream	Ephemeral	4	6689.497974	0.611747	--	--
21	Stream	Ephemeral	4	2225.193131	0.204429	--	--
22	Stream	Ephemeral	4	411.540518	0.037304	--	--
23	Stream	Ephemeral	4	1506.96875	0.138513	--	--
24	Stream	Ephemeral	4	3434.120656	0.312483	--	--
25	Stream	Ephemeral	4	2251.0278	0.20584	--	--
26	Stream	Ephemeral	4	6254.476332	0.569626	--	--
27	Stream	Ephemeral	4	1287.965251	0.116998	--	--
28	Stream	Ephemeral	4	3128.28807	0.28699	--	--
29	Stream	Ephemeral	4	2878.73219	0.264365	--	--
30	Stream	Ephemeral	4	2217.845314	0.203613	--	--
31	Stream	Ephemeral	4	3438.343709	0.314869	--	--
32	Stream	Ephemeral	4	921.599924	0.08394	--	--
33	Stream	Ephemeral	4	0.906222	0.000222	--	--
34	Retention Basin	N/A	N/A	N/A	--	N/A	0.10

Segment ID	Feature Type	Hydroperiod	Average Top of Bank Width (feet)	RWQCB / CDFW Jurisdiction			
				Non-wetland Waters of the State / Streambed (linear feet)	Non-wetland Waters of the State / Streambed (acres)	Wetland Waters of the State / Streambed (linear feet)	Wetland Waters of the State / Streambed (acres)
35	Retention Basin	N/A	N/A	N/A	--	N/A	0.14
36	Retention Basin	N/A	N/A	N/A	--	N/A	0.12
37	Retention Basin	N/A	N/A	N/A	--	N/A	0.04
38	Isolated Wetland	N/A	N/A	N/A	--	N/A	0.001
Total				101,985	9.29	0	0.401

4.4 Wildlife Movement

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

Habitats within a linkage are not necessarily the same as those being linked. Rather, the linkage needs only contain sufficient cover and forage to allow temporary inhabitation by ground-dwelling species during periods of movement among areas of suitable habitat. Typically, habitat linkages are contiguous strips of natural areas, though dense plantings of landscape vegetation can be used by certain disturbance-tolerant species. Depending on the species, a linkage may require specific minimum physical characteristics (such as rock outcroppings, vernal pools, specific vegetation cover, etc.) to function as an effective wildlife corridor, and allow those species to traverse the linkage. For highly mobile or aerial species, habitat linkages may be discontinuous patches of suitable resources spaced sufficiently close together to permit travel along a route in a relatively short period of time.

The CDFW BIOS website (CDFW 2021b) and the California Essential Habitat Connectivity Project: A Strategy for Conserving Connected California (Spencer et al. 2010) were reviewed for wildlife movement information. The Project area is not located within an identified wildlife movement corridor or linkage (CDFW 2021b; Spencer et al. 2010).

The Project area and surrounding area contain expanses of open habitat with little development, and the site lacks any significant barriers to local wildlife movement. High temperatures and lack of cover within disturbed areas of the Project area may deter wildlife from crossing directly. Little development is present within the Project area and wildlife would be expected to traverse the site during foraging and dispersal. Various species may travel between and among surrounding areas of low disturbance (predominantly present immediately to the north and west of the Project area). The most likely areas for wildlife movement in this portion of the Mojave Desert would be within larger drainages, uninterrupted spans of native vegetation (creosote scrub, Joshua tree woodland, etc.), or

along the foothills of the Granite Mountains to the north and west. While the Project area does contain areas of relatively undisturbed native vegetation communities, habitats are largely fragmented on the site and would limit the value of the Project area as a significant wildlife movement corridor.

4.5 Resources Protected by Local Policies and Ordinances

In accordance with Chapter 88.01 of the San Bernardino County Development Code (plant protection and management), a permit is required where protected trees or plants are proposed for removal or relocation. Within the Desert Region, protected trees or plants requiring a Tree or Plant Removal permit include the following:

1. *Dalea spinosa* (smoketree), with stems two inches or greater in diameter or six feet or greater in height
2. All species of the genus *Prosopis* (mesquites), with stems two inches or greater in diameter or six feet or greater in height
3. All species of the family Agavaceae (century plants, nolinias, yuccas)
4. Creosote Rings, 10 feet or greater in diameter
5. All Joshua trees
6. Any part of any of the following species, whether living or dead:
 - a. *Olneya tesota* (desert ironwood)
 - b. All species of the genus *Prosopis* (mesquites)
 - c. All species of the genus *Cercidium* (palos verdes)

At this time, it is unknown whether trees will be removed for the implementation of this project; however, based on observations made during the reconnaissance survey, few trees are present within the solar development areas of the Project. Prior to finalizing plans a focused survey should be performed to identify protected tree or other desert plants in the Project area.

4.6 Consistency with Habitat Conservation Plans

The Project area is located within the broader boundaries of the DRECP, a joint collaboration between the California Energy Commission, BLM, USFWS, and CDFW. This conservation plan is currently being developed. A phased approach to implementation is currently underway. Phase I addresses conservation and development goals on public lands. BLM is responsible for the implementation of this phase through preparation of the Land Use Planning Amendment (LUPA), which was approved in September 2016. During Phase II Counties in the DRECP plan area, through the use of Renewable Energy Conservation Planning Grants, will develop or update rules and policies related to renewable energy resources on private lands. This phase will require agency coordination to develop the best options to protect and conserve desert ecosystems while promoting renewable energy. San Bernardino County has completed Phase II and has revised the Countywide General Plan to include a Renewable Energy and Conservation Element as of August 8, 2017. However, the Project area occurs on private land only, and is not located within any other local, regional, or State conservation planning areas.

5 Impacts and Recommendations

Implementation of the proposed Project in the natural scrub habitats of the Project area has the potential to affect various special-status species. Jurisdictional waters could be impacted from project development in portions of the overall Project area. The following sections provide an analysis of potential project effects to these resources and recommendations for additional analysis that may be pertinent. The final determination of effects of significance and required mitigation measures for the Project will be made by San Bernardino County.

5.1 Special Status Species

The proposed Project would have a significant effect on biological resources if it would:

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

During the reconnaissance surveys burrowing owl, loggerhead shrike, and prairie falcon were observed in the Project area. The site contains suitable habitat for these and other special-status wildlife species. Direct and indirect impacts to these species from project activities would be considered *potentially significant but mitigable* through implementation of appropriate mitigation measures described in Section 6 and additional recommended surveys as outlined below.

5.1.1 Special Status Plant Species

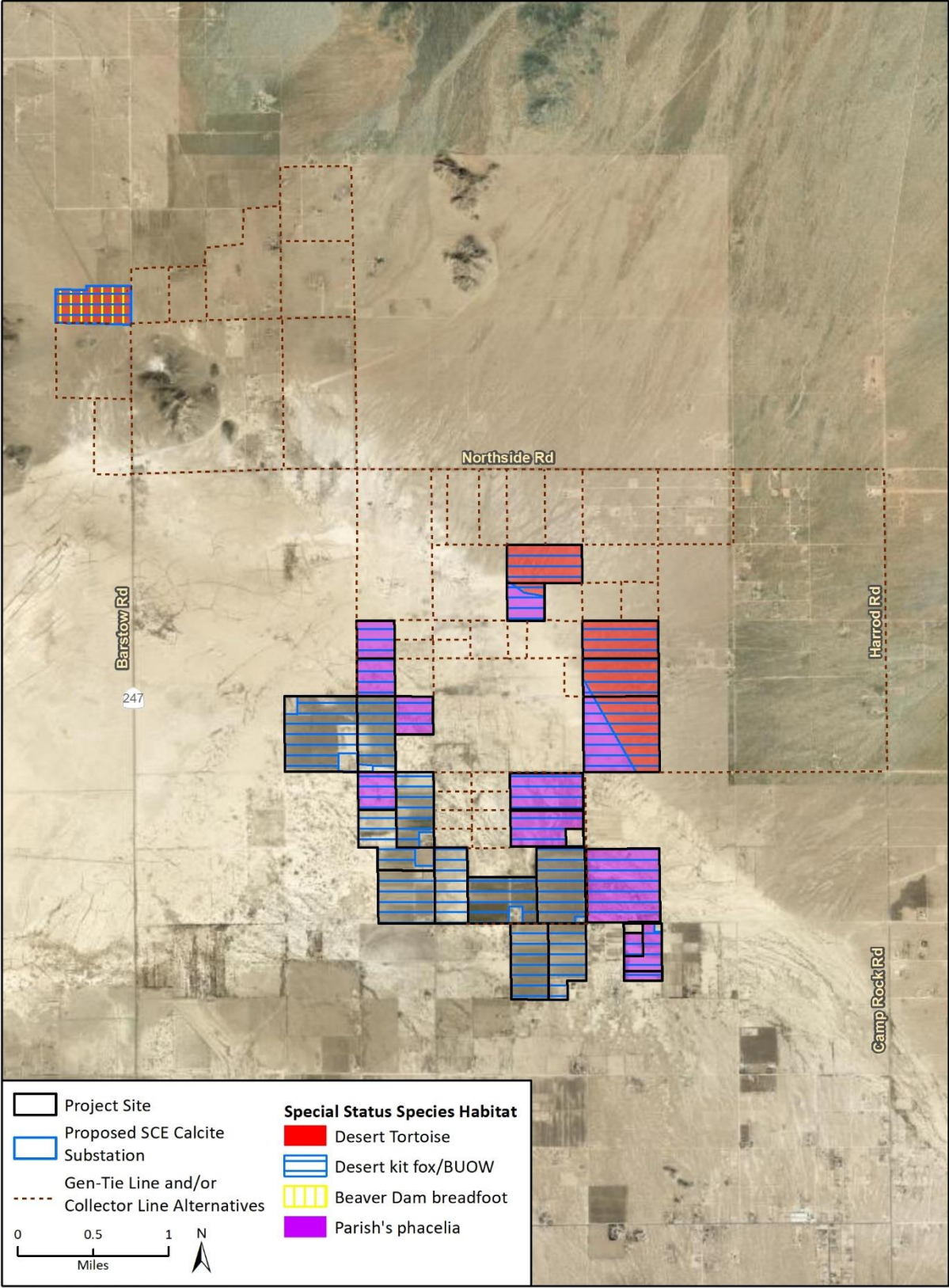
Overall, the Project area contains marginal habitat for most of the special-status plants with potential to occur on-site. The determination of marginality is based on prior use, existing disturbances, limited suitable habitat characteristics (e.g., preferred soils), and prevalence of nonnative species.

Although habitat is marginal, there is potential for eight special-status plant species to occur in the Project area. Project development could result in direct impacts to special status plant species, particularly, if present on site. Depending on the species and numbers of individuals identified, impacts to special-status plants could be considered *potentially significant but mitigable* at the species level through implementation of buffers and creation of a translocation plan as described in MM BIO 1.1A (see Section 6). Focused surveys for special-status plants with a moderate potential to occur should be conducted during the appropriate blooming periods and within the appropriate habitats and locations in the Project area.

Focused surveys for Beaver Dam breadroot should be conducted in the northern portion, with particular attention paid to areas of higher creosote concentration. Focused surveys for Parish's phacelia should be conducted in alkali soils within the dry lakebed and recovering spinescale habitats (Figure 10).

All species observed on-site should be identified to the level of determining rarity status.

Figure 10 Special Status Species Habitat



Special Status Animal Species

Burrowing owl, loggerhead shrike, and prairie falcon were observed within the Project area. No other special-status wildlife species were observed on-site during the field surveys. Portions of the Project area contain suitable habitat for desert kit fox, desert tortoise, burrowing owl, and other special-status wildlife species.

Species-specific surveys for desert kit fox, burrowing owl and desert tortoise should be conducted in accordance with applicable protocols [i.e., the 2010 USFWS Pre-project Field Survey Protocol for Potential Desert Tortoise Habitats and the CDFW 2012 Staff Report on Burrowing Owl Survey Protocol and Mitigation Guidelines (CDFG 2012)]. Desert kit fox and burrowing owl surveys should be conducted in agricultural areas, within the historical lakebed and within natural and recovering spinescale scrub, while desert tortoise surveys should be conducted in the natural spinescale scrub vegetation community in the northern and eastern portions (Figure 10). Non-protocol level surveys may be performed with prior agency approval. Direct and indirect impacts to these species from project activities would be considered *potentially significant but mitigable* through implementation of protective measures and mitigation as described in MM BIO 1.1B, BIO 1.1C, and BIO 1.1D (see Section 6).

No USFWS-designated critical habitat for Federally listed wildlife species is mapped in the Project area, and thus no critical habitat would be affected by the proposed Project; however, some of the special-status species outlined above, if present on-site during construction, could be affected directly (loss of individuals) or indirectly (construction noise, dust, and other human disturbances) by project activities. These impacts would be *potentially significant but mitigable* through implementation of general protective measures.

Desert Tortoise Impacts

The northern and eastern portions of the Project contain the least disturbed natural saltbush scrub communities and therefore, the greatest potential to support desert tortoise. Protocol surveys are recommended for desert tortoise in accordance with the USFWS protocol within the northern portion of the Project area that contain suitable habitat for the species. Results of these surveys would determine the potential for impacts, inform the applicability of the proposed mitigation measures to reduce impacts, and clarify the necessity for federal and state incidental take authorization. The desert tortoise is a Federally and State threatened species and consequently, potential impacts to the species would require the issuance of Incidental Take Permits from both the USFWS and CDFW to comply with FESA and CESA.

Direct and indirect impacts to desert tortoise from Project activities would be considered *potentially significant but mitigable* through implementation of protective measures and mitigation as described in MM BIO 1.1C (see Section 6).

5.1.2 Avian Impacts

Many common MBTA bird species were observed throughout the Project area and vicinity. Native birds protected by the CFGC and the MBTA (potentially including prairie falcon and loggerhead shrike) may nest on-site. Construction activity has the potential to directly (by destroying a nest) or indirectly (by causing an active nest to fail) impact nesting birds protected under the CFGC and MBTA, and this would be *potentially significant but mitigable* through implementation of preconstruction nesting bird surveys and protective nest buffers, as described in MM BIO 1.1E (see Section 6).

The Project area contains suitable foraging habitat for special-status birds of prey (e.g., golden eagle and prairie falcon). Loss of foraging raptor habitat could be considered significant if it had substantial adverse effects to local populations of special-status raptors protected under the CFGC, Bald and Golden Eagle Protection Act (BGEPA) or the MBTA. The Project area is located in the Lucerne Valley, a region continuous with the larger Mojave Desert habitat. The DRECP modeled 506,622 acres of suitable golden eagle breeding habitat, and 21,373,122 acres of suitable foraging habitat in the DRECP plan area, however the Project area is not within this modeled habitat (Dudek and ICF 2012).

Five pairs of golden eagles were tracked for a radio telemetry study in the Granite Mountains to the north of the Project area (Katzner et al. 2012). The authors evaluated breeding home ranges using kernel density estimators (KDE) and defined home ranges as general areas used by eagles (90% KDE) and core home ranges (50% KDE). Of the five eagles in the Granite Mountains only one had a general range that overlapped slightly with the northwestern portions of the Project area. No core home range areas occur within the Project area. The authors note that core areas, which can occur at long distances from nest sites, may function as important resource areas for the eagles. Approximately 72% (1,807 acres) of the PV development area is low to high quality foraging habitat (spinescale scrub), and no core home range areas are present within the Project area. As such, loss of foraging habitat from Project development would not constitute a significant impact under CEQA. Direct significant impacts to foraging raptors under CEQA are not expected from project development, and no mitigation is recommended.

5.1.3 Mountain Lion Impacts

Direct impacts to mountain lions are not anticipated as the species is large and highly visible and therefore, can be easily avoided by equipment and personnel during project activities. Potential indirect impacts could include increased sound and vibration levels and exposure to dust. The Project area is surrounded by undeveloped land and open space providing a multitude of regional movement options within and adjacent to the Project area. Therefore, project activities would not significantly impact the amount of regional habitat available for mountain lions in the vicinity.

5.2 Sensitive Plant Communities

The proposed Project would have a significant effect on biological resources if it would:

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

No special-status plant communities were recorded in the Project area; therefore, no mitigation is recommended.

5.3 Jurisdictional Waters and Wetlands

The proposed Project would have a significant effect on biological resources if it would:

- c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.*

Multiple ephemeral streams and drainages were observed within the Project area. These drainages are potentially subject to LRWQCB and CDFW jurisdiction. The USACE is not expected to assert jurisdiction over the features based on previous approved jurisdictional determinations for features in the Lucerne Lake watershed. Construction activities from the proposed Project could impact these potentially jurisdictional features. If avoidance of jurisdictional waters is not feasible, impacts to jurisdictional areas would be considered *significant but mitigable* through implementation of protective measures as described in MM BIO 1.2A (see Section 6).

5.4 Wildlife Movement

The proposed Project would have a significant effect on biological resources if it would:

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

No regional wildlife linkages or corridors are mapped within the Project area. The Project area is bordered to the north by mountains, to the west by mountains and dry lakebed, and to the east and south by minor development. Local wildlife likely use the natural habitats at the base of the hills to the west and drainage features including those within the Project area for movement; however, development of the Project area would not create a significant barrier for wildlife movement. The Project area does not occur within a corridor that links between or among larger habitat areas on a local or regional basis. The Project area is not within any areas mapped as Essential Connectivity Areas by the California Essential Habitat Connectivity Project. Therefore, potential impacts of the proposed Project on wildlife movement would be *less than significant* and no mitigation is recommended.

5.5 Local Policies and Ordinances

The proposed Project would have a significant effect on biological resources if it would:

- e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance*

The proposed Project would require a development permit from the San Bernardino County Planning Department, and therefore would be designed in compliance with applicable San Bernardino County policies and ordinances. To comply with the County's Development Code, the following species should be included for evaluation during recommended botanical surveys: smoketree, all mesquite species, all members of the Agave family, creosote bush rings, Joshua trees, desert ironwood, and palo verdes. Direct and indirect impacts to these species from project activities would be mitigated through the County permitting process; which includes the preparation of a native tree and plant removal plan, indicating exactly which protected trees or plants are proposed to be removed or relocated. Therefore, the proposed Project would not conflict with any local policies or ordinances.

5.6 Adopted or Approved Plans

The proposed Project would have a significant effect on biological resources if it would:

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

The Project area is located within the boundaries of the DRECP, a joint collaboration between the California Energy Commission, BLM, USFWS, and CDFW. The Project area is also within the boundaries of the West Mojave Plan. Both of these plans are applicable to Projects on public lands (e.g., BLM). The Project area occurs on private land and is not located within any other local, regional, or State conservation planning area. Therefore, the proposed Project would not conflict with any adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or State habitat conservation plans.

6 Proposed Mitigation Measures

6.1 Special-Status Species

As described in Section 5.1, implementation of the proposed Project could result in direct and indirect impacts to special-status plant and wildlife species. If focused rare plant surveys document the occurrence of rare plant species for which the loss of those plants would result in a substantial risk to the viability of a local or regional population of said species, the following mitigation measures are recommended and may be implemented to reduce potential impacts to less than significant levels.

BIO 1.1A Mitigation Measures for Special-Status Plant Species

BIO 1.1A-1 Special-status Plant Buffer

If special status plant species (i.e., endangered, threatened, or California Native Plant Society CRPR 1 and 2 species) are observed during the focused botanical surveys within the development area of the Project area, the proposed Project should be designed to reduce impacts to these species through the establishment of buffers, to the extent feasible. Buffer distances should be determined by the Qualified Biologist, typically 50 feet or greater from an identified special status plant species, unless the Qualified Biologist determines a reduced buffer would suffice to avoid impacts to the species.

BIO 1.1A-2 Special-status Plant Relocation Plan

If avoidance of special-status plant species is not feasible, a Special-Status Plant Relocation Plan should be developed and implemented. The Special-Status Plant Relocation Plan shall address mitigation for special-status plants, including topsoil salvage to preserve seed bank and management of salvaged topsoil; seed collection, storage, possible nursery propagation, and planting; salvage and planting of bulbs as feasible; location of on-site receptor sites; land protection instruments for receptor areas; and funding mechanisms. The Rare Plant Relocation Plan shall include methods, monitoring, reporting, success criteria, adaptive management, and contingencies for achieving success.

All special-status plant species identified on site shall be mapped onto a site-specific aerial photograph and topographic map and included on the construction, grading, fuel modification, and landscape plans.

BIO 1.1B General Measures for Special-Status Wildlife Species

BIO 1.1B-1 Biological Monitoring

Prior to the issuance of grading or building permits, the project proponent should retain a Qualified Biologist, with experience and expertise in desert species to oversee compliance with protection measures for all listed and other special-status species. If State or Federally listed species or other special status biological resources are identified on the Project area during protocol and/or preconstruction surveys, then the Qualified Biologist may need to be approved by USFWS and/or CDFW as an authorized biologist for handling listed species. The Qualified Biologist or other

Qualified Biological Monitors should be on the Project area during initial grading, ground disturbance and vegetation removal activities in natural scrub vegetation communities to monitor construction activity where that activity could directly or indirectly impact special status biological resources. The Qualified Biologist should have the authority to halt all activities that are in violation of the special-status species protection measures. Work should proceed only after potential hazards to special-status species are removed and the species is no longer at risk. The Qualified Biologist should have in her/his possession a copy of all the compliance measures while work is being conducted on the Project area.

BIO 1.1B-2 Construction Worker Environmental Awareness Training and Education Program

Prior to any activity on site and for the duration of construction activities, all personnel at the Project area (including laydown areas and/or transmission routes) should attend a Worker Environmental Awareness Program (WEAP) developed and presented by the Qualified Biologist. New personnel should receive WEAP training on the first day of work and prior to commencing work on the site. Any employee responsible for the operation and maintenance (O&M) or decommissioning of the Project facilities should also attend WEAP training.

1. The program should include information on the life history of the desert tortoise, burrowing owl, golden eagle, and other raptors; nesting birds, desert kit fox; as well as other wildlife and plant species that may be encountered during construction activities.
2. The program should also discuss the legal protection status of each species, the definition of "take" under the Federal Endangered Species Act and California Endangered Species Act, measures the project proponent is implementing to protect the species, reporting requirements, specific measures that each worker should employ to avoid take of wildlife species, and penalties for violation of the Federal Endangered Species Act or California Endangered Species Act.
3. The program should provide information on how and where to bring injured animals for treatment in the case any animals are injured on the Project area.
4. An acknowledgement form signed by each worker indicating that WEAP training has been completed should be kept on record.
5. A sticker should be placed on hard hats indicating that the worker has completed the WEAP training. Construction workers should not be permitted to operate equipment within the construction areas unless they have attended the WEAP training and are wearing hard hats with the required sticker.
6. A copy of the training transcript and/or training video, as well as a list of the names of all personnel who attended the WEAP training and copies of the signed acknowledgement forms should be submitted to the San Bernardino County Planning and Community Development Department upon the County's request.

BIO 1.1C Recommended Measures for Desert Tortoise

BIO 1.1C-1 Pre-construction Surveys

Desert Tortoise presence/absence surveys should be conducted by a Qualified Biologist during their appropriate season. The surveys should be conducted in areas of suitable habitat (natural spinescale scrub) and conform to USFWS guidelines. If desert tortoise are not documented during seasonally

timed protocol desert tortoise surveys, no additional measures related to desert tortoise avoidance and minimization are recommended. If tortoise are documented inhabiting any portion of the project area during presence/absence surveys, the following measures should be implemented:

BIO 1.1C-2 Additional Measures for Desert Tortoise

If protocol desert tortoise surveys document that the species is inhabiting portions of the Project area, the following measure are recommended, and limited to those portions of the Project for which DT occupancy has been determined, to reduce impacts to less than significant. Note, implementation of any measures that would result in the “take” of desert tortoise cannot be undertaken without formal authorization from CDFW and USFWS.

- Develop a plan for desert tortoise translocation and monitoring prior to Project construction. The plan should provide the framework for implementing the following measures, or similar measures deemed sufficient and approved during agency consultation (Note: any desert tortoise translocation plan must be reviewed and approved by CDFW and USFWS):
 - If a permanent tortoise-proof exclusion fence is practicable, a fence should be installed around all construction areas prior to the initiation of ground disturbing activities, in coordination with a Qualified Biologist. The fence should be constructed of 0.5-inch mesh hardware cloth and extend 18 inches above ground and 12 inches below ground. Where burial of the fence is not possible, the lower 12 inches should be folded outward against the ground and fastened to the ground so as to prevent desert tortoise entry. The fence should be supported sufficiently to maintain its integrity, be checked at least monthly during construction and operations, and maintained when necessary by the project proponent to ensure its integrity. Provisions should be made for closing off the fence at the point of vehicle entry. Raven perching deterrents should be installed as part of the fence construction.
 - After fence installation, an authorized biologist should conduct a pre- construction survey for desert tortoise within the construction site. The authorized biologist should have the appropriate education and experience to accomplish biological monitoring and mitigation tasks and is approved by the CDFW and the USFWS. Two surveys without finding any tortoises or new tortoise sign should occur prior to declaring the site clear of tortoises.
 - All burrows that could provide shelter for a desert tortoise should be hand-excavated prior to ground-disturbing activities.
 - An authorized biologist should remain on-site until all vegetation is cleared and, at a minimum, conduct site and fence inspections on a regular basis throughout construction in order to ensure Project compliance with mitigation measures.
 - A biologist should remain on-call throughout fencing and grading activities in the event a desert tortoise wanders onto the Project area.
 - Compensatory mitigation in the form of a conservation easement or purchase of mitigation bank credits to compensate for the loss of occupied desert tortoise habitat at a minimum ratio of 1:1, with habitat of equal or greater value.

BIO 1.1D Recommended Measures for Desert Kit Fox and Burrowing Owl

Preconstruction surveys should be conducted by a Qualified Biologist for the presence of desert kit fox and burrowing owl prior to commencement of construction activities in all areas with potential to support these species. This survey should be conducted no fewer than 30 days prior to ground disturbing activities without prior agency approval. The surveys should be conducted in areas of suitable habitat for each species which includes natural and recovering spinescale scrub for desert kit fox and burrowing owl, as well as ruderal habitat for burrowing owl. Surveys should conform to CDFW guidelines for burrowing owl and to industry standards for desert kit fox.

BIO 1.1D-1 Measures for Desert Kit Fox

- If potential desert kit fox dens are observed and avoidance is feasible, buffer distances should be established by the Qualified Biologist prior to construction activities. Typical buffer distances for desert kit fox are:
 - Desert kit fox potential den: 50 feet
 - Desert kit fox active den: 100 feet
 - Desert kit fox natal den: 500 feet
- If avoidance of the potential desert kit fox dens is not feasible, the following measures are recommended to minimize potential adverse effects to the desert kit fox:
 - If a Qualified Biologist determines that potential dens are inactive, the biologist should excavate these dens by hand with a shovel and collapse them to prevent desert kit foxes from re-using them during construction.
 - If the Qualified Biologist determines that potential dens may be active, an on-site passive relocation program should be implemented. This program should only be implemented during the non-breeding season (September 1 through February 1) and consist of passive eviction of desert kit foxes from occupied burrows by installation of one-way doors at burrow entrances and monitoring of the burrow for seven days to confirm usage has been discontinued, and excavation and collapse of the burrow to prevent reoccupation. After the Qualified Biologist determines that desert kit foxes have stopped using active dens within the Project boundary, the dens should be hand-excavated with a shovel and collapsed to prevent re-use during construction. Only non-natal dens should be passively excluded, disturbance to natal dens should be avoided.

BIO 1.1D-2 Measures for Burrowing Owl

- If burrowing owls are detected on-site, a no-work buffer should be established, restricting all ground-disturbing activities, such as vegetation clearance or grading, from occurring within the buffer. Typical avoidance buffer distances for burrowing owl range from 100 meters (330 feet) to 250 meters (825 feet) depending on project activity, line of sight and local topography, during the breeding season (February 1 to August 31). During the non-breeding (winter) season (September 1 to January 31), typical avoidance buffers range from 50 meters (165 feet) to 100 meters (330 feet) from the burrow. Depending on the level of disturbance, a smaller buffer may be established in consultation with CDFW.
- If burrowing owl burrow avoidance is infeasible during the non-breeding season or during the breeding season (February 1 through August 31), where resident owls have not yet begun egg laying or incubation, or where the juveniles are foraging independently and capable of independent survival, a Qualified Biologist should implement a passive relocation program consistent with Appendix E1 (i.e., Example Components for Burrowing Owl

Artificial Burrow and Exclusion Plans) of the 2012 CDFW Staff Report on Burrowing Owl Mitigation.

BIO 1.1E Mitigation Measures for Nesting Birds and Raptors

BIO 1.1E-1 Pre-construction Surveys

If construction is scheduled to commence during the non-breeding season (September 1 to January 31), no pre-construction surveys or additional measures with regard to nesting birds and other raptors are required. To avoid impacts to nesting birds in the project area, a qualified wildlife biologist should conduct pre-construction surveys of all potential nesting habitats within the Project area for project activities that are initiated during the breeding season (February 1 to August 31). The raptor survey should focus on potential nest sites (e.g., cliffs, large trees, windrows, Joshua trees, and shrubs) within a 0.5-mile buffer around the Project area. These surveys should be conducted no fewer than 14 days prior to ground-disturbing activities without prior agency approval. Surveys need not be conducted for the entire Project area at one time; they may be conducted in phases so that surveys occur shortly before a portion of the site is disturbed. The surveying biologist must be qualified to determine the status and stage of nesting by migratory birds and all locally breeding raptor species without causing intrusive disturbance.

BIO 1.1E-2 Nest Buffers

If active nests are found, a suitable buffer as determined by the Qualified Biologist (e.g., 200-300 feet for common raptors; 30-50 feet for passerines, 0.5 mile for golden eagle) should be established around active nests, and no construction within the buffer should be allowed until a Qualified Biologist has determined that the nest is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest). Encroachment into the buffer may occur at the discretion of a Qualified Biologist; however, for State-listed species, consultation with the CDFW should occur prior to encroachment into the aforementioned buffers.

6.2 Sensitive Plant Communities

No sensitive plant communities were observed in the Project area. Therefore, impacts to sensitive plant communities are not expected and no mitigation is recommended.

6.3 Jurisdictional Waters and Wetlands

Implementation of the proposed project could result in direct and indirect impacts to protected wetlands. Therefore, the following mitigation measures are recommended and may be implemented to reduce potential impacts to less than significant levels.

BIO 1.2 Mitigation Measures for Jurisdictional Waters

BIO 1.2-A Avoidance and Minimization

Jurisdictional features (ephemeral drainages) identified in the delineation should be avoided where possible. If all waters of the U.S and waters of the State can be avoided, no further mitigation is recommended. If the project will directly impact waters of US por waters of the State, the following measures should be implemented to reduce impacts to less than significant (Note: any activities

that would result in impacts to waters of the US and/or waters of the State would be required to receive issuance of regulatory permits from USACE, CDFW and/or RWQCB.):

- Any material/spoils generated from project activities should be located away from jurisdictional areas or special-status habitat and protected from storm water run-off using temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, and straw bale barriers, as appropriate.
- Materials should be stored on impervious surfaces or plastic ground covers to prevent any spills or leakage from contaminating the ground and generally at least 50 feet from the top of bank.
- Any spillage of material will be stopped if it can be done safely. The contaminated area will be cleaned, and any contaminated materials properly disposed. For all spills, the project foreman or designated environmental representative will be notified.
- Compensatory mitigation to offset permanent impacts to waters of the State. Mitigation should occur at a minimum ratio of 1:1 through the establishment of a conservation easement, restoration of existing habitat and/or payment of in-leu fees. A Compensatory Mitigation and Restoration Plan is recommended for inclusion with agency permit applications that are proposing on-site restoration and should include the following components:
 - A description of the purpose and goals of the mitigation project including the improvement of specific physical, chemical, and/or biological functions at the mitigation site.
 - A description of the plant community type(s) and amount(s) that will be provided by the mitigation and how the mitigation method will achieve the mitigation project goals.
 - A description of the mitigation site, including a site plan of the location and rationale for site selection.
 - A plant palette and methods of salvaging, propagating, and planting the site to be restored.
 - Methods of soil preparation.
 - Best Management Practices (BMPs) that will be utilized to avoid erosion and excessive runoff before plant establishment.
 - Maintenance and monitoring necessary to ensure that the restored plant communities meet the success criteria.
 - Schedule for restoration activities including weed abatement, propagating and planting, soil preparation, irrigation, erosion control, qualitative and quantitative monitoring, and reporting to the County. Identification of measurable performance standards for each objective to evaluate the success of the compensatory mitigation.
 - Identification of contingency and adaptive management measures to address unforeseen changes in site conditions or other components of the mitigation project. Or,
 - As an alternative to on-site mitigation, identification of an appropriate mitigation bank and the purchase of credits commensurate with the type of impacts associated with the project.

6.4 Wildlife Movement

Potential impacts of the proposed project on wildlife movement would be less than significant; therefore, no mitigation is recommended.

6.5 Local Policies and Ordinances

There would be no conflicts with local policies and ordinances, therefore no mitigation is recommended.

6.6 Adopted or Approved Plans

The proposed project would not conflict with any existing conservation plans; therefore, no mitigation is recommended.

7 Limitations, Assumptions, and Use Reliance

This General Biological Resources Assessment has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed. Reconnaissance biological surveys for certain taxa may have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, review of CNDDDB RareFind5, and specified historical and literature sources. Standard data sources relied upon during the completion of this report, such as the CNDDDB, may vary with regard to accuracy and completeness. In particular, the CNDDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary research and analysis.

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9 Certification

The report must include the certification statement within the body of the report as shown below:

CERTIFICATION: "I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a nondisclosure or consultant confidentiality agreement with the project applicant or applicant's representative and that I have no financial interest in the project."

Date: October 12, 2021

Signature: *Sarah Toback*
Report Author: Sarah Toback

Include names and signatures for those performing fieldwork.

1) Fieldwork Performed By:

Amy Leigh Trost

Amy Leigh Trost, Biologist

2) Fieldwork Performed By:

Jacob Hargis

Jacob Hargis, Associate Biologist

3) Fieldwork Performed By:

Sarah Toback

Sarah Toback, Associate Biologist

4) Fieldwork Performed By:

Jorge Saavedra-Alvarado

Jorge Saavedra-Alvarado, Intern Biologist

Check here X if adding any additional names/signatures, below or on other side of page.

Christina Shushnar

Christina Shushnar
Senior Biologist (Report and Analysis QA/QC)

David Daitch

David Daitch, Ph.D.
Report and Analysis QA/QC

Appendix A

Regulatory Setting

Regulatory Setting

Special-status habitats are vegetation types, associations, or sub-associations that support concentrations of special-status plant or animal species, are of relatively limited distribution, or are of particular value to wildlife.

Listed species are those taxa that are formally listed as endangered or threatened by the federal government (e.g., U.S. Fish and Wildlife Service [USFWS]), pursuant to the Federal Endangered Species Act (FESA) or as endangered, threatened, or rare (for plants only) by the State of California (i.e., California Fish and Game Commission), pursuant to the California Endangered Species Act or the California Native Plant Protection Act. Some species are considered rare (but not formally listed) by resource agencies, organizations with biological interests/expertise (e.g., Audubon Society, CNPS, The Wildlife Society), and the scientific community.

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. A number of federal and state statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the Project area include:

- U.S. Army Corps of Engineers (wetlands and other waters of the United States);
- Lahontan Regional Water Quality Control Board (waters of the State);
- U.S. Fish and Wildlife Service (federally listed species and migratory birds);
- California Department Fish and Wildlife (riparian areas, streambeds, and lakes; state-listed species; Species of Special Concern; nesting birds);
- San Bernardino County Development Code (Chapter 88.01)

U.S. Army Corps of Engineers

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (USACE) has authority to regulate activities that could discharge fill of material into wetlands or other “waters of the United States.” Perennial and intermittent creeks are considered waters of the United States if they are hydrologically connected to other jurisdictional waters (typically a navigable water). The USACE also implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetland value or acres. In achieving the goals of the Clean Water Act, the USACE seeks to avoid adverse impacts and offset unavoidable adverse impacts on existing aquatic resources. Any fill of wetlands that are hydrologically connected to jurisdictional waters would require a permit from the USACE prior to the start of work. Typically, when a project involves impacts to waters of the United States, the goal of no net loss of wetland acres or values is met through avoidance and minimization to the extent practicable, followed by compensatory mitigation involving creation or enhancement of similar habitats.

Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and the local Regional Water Quality Control Board (RWQCB) have jurisdiction over “waters of the State,” pursuant to the Porter-Cologne Water Quality Control Act, which are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. The SWRCB has issued general Waste Discharge Requirements (WDRs) regarding discharges to “isolated” waters of the State (Water Quality Order No. 2004-0004-

DWQ, Statewide General Waste Discharge Requirements for Dredged or Fill Discharges to Waters Deemed by the U.S. Army Corps of Engineers to be Outside of Federal Jurisdiction). The RWQCB administers actions under this general order for isolated waters not subject to federal jurisdiction, and is also responsible for the issuance of water quality certifications pursuant to Section 401 of the Clean Water Act for waters subject to federal jurisdiction.

United States Fish and Wildlife Service

The USFWS implements the Migratory Bird Treaty Act (16 United States Code [USC] Section 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668). The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the Federal Endangered Species Act (FESA) (16 USC § 153 et seq.). Generally, the USFWS implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in “take” of any federally threatened or endangered species are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of the FESA, depending on the involvement by the federal government in permitting and/or funding of the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. “Take” under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of the FESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) derives its authority from the Fish and Game Code of California. The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et. seq.) prohibits take of state listed threatened or endangered. Take under CESA is restricted to direct mortality of a listed species and the law does not prohibit indirect harm by way of habitat modification. Where incidental take would occur during construction or other lawful activities, CESA allows the CDFW to issue an Incidental Take Permit upon finding, among other requirements, that impacts to the species have been minimized and fully mitigated.

The CDFW also enforces Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code, which prohibits take of species designated as Fully Protected. The CDFW is not allowed to issue an Incidental Take Permit for Fully Protected species; therefore, impacts to these species must be avoided.

California Fish and Game Code sections 3503, 3503.5, and 3513 describe unlawful take, possession, or destruction of native birds, nests, and eggs. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Section 3513 makes it a state-level offense to take any bird in violation of the federal Migratory Bird Treaty Act. CDFW administers these requirements.

Species of Special Concern (SSC) is a category used by the CDFW for those species which are considered to be indicators of regional habitat changes or are considered to be potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species in special consideration when decisions are made concerning the development of natural lands. The CDFW also has authority to

administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Effective in 2015, CDFW promulgated regulations (14 CCR 786.9) under the authority of the NPPA, establishing that the CESA's permitting procedures would be applied to plants listed under the NPPA as "Rare." With this change, there is little practical difference for the regulated public between plants listed under CESA and those listed under the NPPA.

Perennial, intermittent, and ephemeral streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 *et seq.* of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over activities that divert, obstruct, or alter the channel, bed, or bank of any river, stream or lake.

San Bernardino Countywide General Plan

The San Bernardino Countywide General Plan (General Plan) identifies the Federal, State, and local statutes, ordinances, or policies that govern the conservation of biological resources that must be considered by San Bernardino County (County) during the decision-making process for any project that could impact biological resources. The General Plan is currently under revision to include a Renewable Energy and Conservation Element, which aims to maintain the natural and scenic values of the landscape while providing safe and reliable renewable energy sources for California. The draft of this element was released in April 2017. The element was adopted in August 2017 and amended in February 2019. An interim Urgency Ordinance for renewable energy projects was put in effect in 2014. This amended County Development Codes to restrict land use zoning districts for renewable energy projects and requires avoidance or minimization of impacts to special status species and their habitats.

Amendment Section 84.29.035 – Required Findings

- "(9) The proposed commercial solar energy generation facility will be sited so as to avoid or minimize impacts to the habitat of special status species, including threatened, endangered, or rare species, Critical Habitat Areas as designated by the U.S. Fish and Wildlife Service, important habitat/wildlife linkages or areas of connectivity designated by County, state or Federal agencies, and areas of Habitat Conservation Plans or Natural Community Conservation Plans that discourage or preclude development."
- "(10) Adequate provision has been made to maintain and promote native vegetation and avoid the proliferation of invasive weeds during and following construction."

The Draft Renewable Energy and Conservation Element of the General Plan provides goals, policies, and implementation measures to encourage sustainable energy production and consumption while protecting the environmental resources of San Bernardino County.

Section IV – Environmental Compatibility

- **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.
- **Policy 4.4:** Encourage siting, construction and screening of RE generation facilities to avoid, minimize or mitigate significant changes to the visual environment including minimizing light and glare.

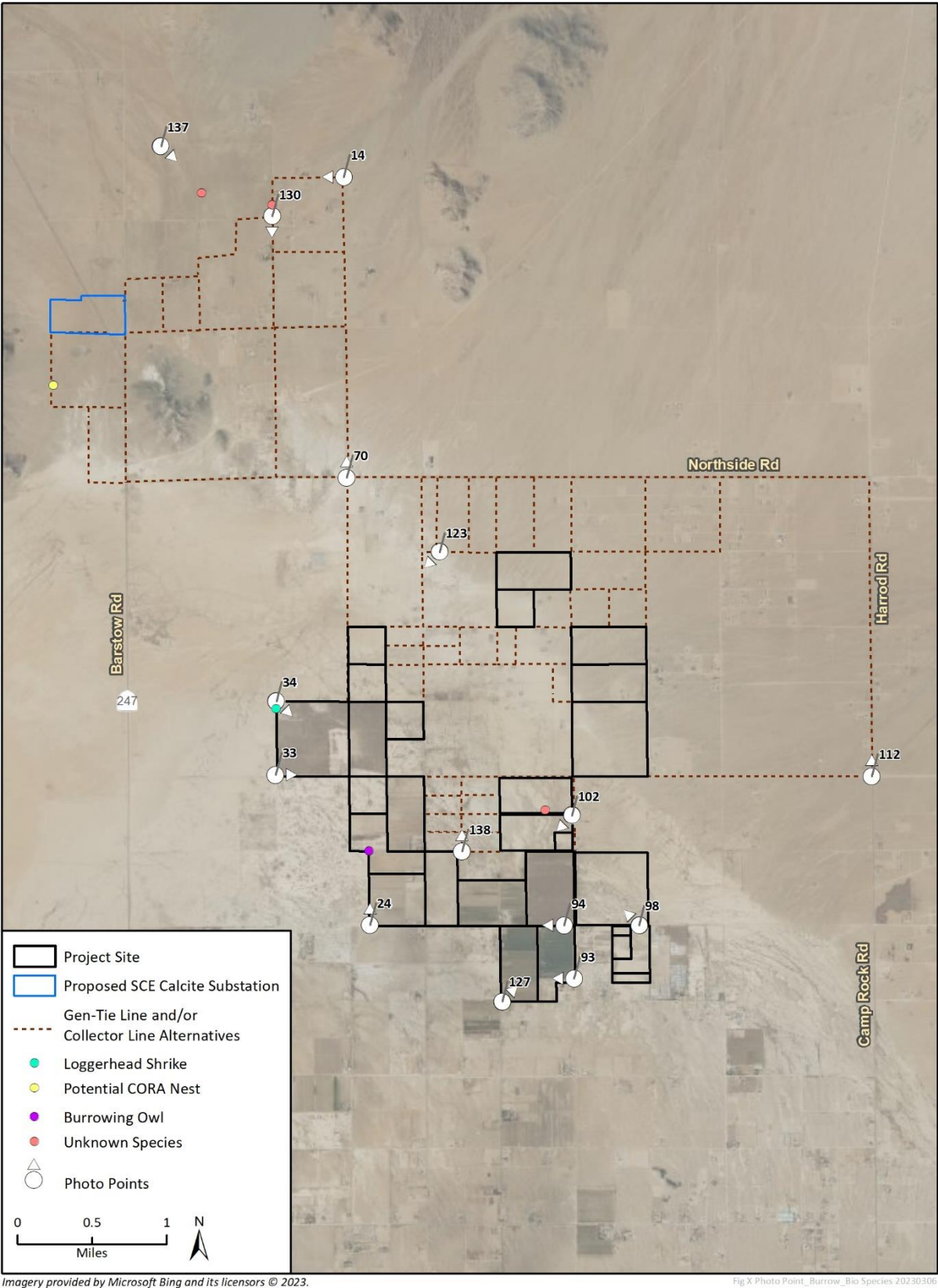
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- **4.4.1:** Reduce visual impacts through a combination of minimized reflective surfaces, context-sensitive color treatments, nature-oriented geometry, minimized vegetation clearing under and around arrays, conservation of pre-existing native plants, replanting of native plants as appropriate, maintenance of natural landscapes around the edges of facility complexes, and lighting design to minimize night-sky impacts, including attraction of and impact to nocturnal migratory birds.
- **Policy 4.7:** RE Project area selection and site design shall be guided by the following priorities relative to habitat conservation and mitigation:
 - Avoid sensitive habitat, including wildlife corridors, when feasible, during through site selection and project design.
 - Where necessary and feasible, conduct mitigation on-site.
 - When on-site habitat mitigation is not possible or adequate, conduct establish mitigation off-site in an area designated for habitat conservation.
- **Policy 4.8:** Encourage mitigation for RE generation facility projects to locate habitat conservation offsets on public lands where suitable habitat is available.
 - **4.8.1:** Collaborate with appropriate state and Federal agencies to facilitate mitigation/habitat conservation activities on public lands.
- **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.

Appendix B

Site Photographs

Figure 11 Photo Point, Burrow Point, and Species Point Locations





Photograph 1. View facing west from the southeast corner of parcel 045212142 showing cultivated agriculture (FID 93)



Photograph 2. View facing northeast from the southwest corner of parcel 045212112 showing cultivated agriculture (FID 127)



Photograph 3. View facing north west from the southeast corner of parcel 045211317 showing spine scale shrub (FID 98)



Photograph 4 View facing north from the southwest corner of parcel 045206224 showing fallow agriculture (FID 24)



Photograph 5. View facing north west from the southeast corner of parcel 045211225 showing mulched agriculture with Russian thistle (FID 94)



Photograph 6. View facing southwest from the northeast corner of parcel 045211218 showing spine scale shrub (FID 102)



Photograph 7. View facing north from the southwest corner of parcel 045211215 showing sparse spine scale shrub (FID 138)



Photograph 8. Burrowing Owl burrow littered with fecal pellets near entrance located at western edge of parcel 045206222 (Burrow 001)



Photograph 9. View facing east at from the southwest corner of parcel 045207111 showing disturbed spine scale shrub (FID 33)



Photograph 10. View facing north at possible gen-tie route along Harrod Rd (FID 112)



Photograph 11. View facing north at possible gen-tie route along Huff Rd (FID 70)



Photograph 12. Burrow appears to be caved in with fecal pellets surrounding entrance, located at the center of parcel 045309129 (Burrow 003)



Photograph 13. View facing south at the intersection of parcels 045309148 and 045309152 showing creosote and spine scale shrub alliance (FID 130)



Photograph 14. View facing southwest from center of parcel 045304107 showing transmission lines (FID 123)



Photograph 15. View facing west at possible gen-tie route along Waalew Rd (FID 14)



Photograph 16. View facing southeast from the north west corner of parcel 045309124 showing sparse creosote (FID 137)



Photograph 17. Burrow located at the eastern edge of parcel 045309129 (Burrow 002)



Photograph 18. Burrow located at the southern edge of parcel 045211219 (Burrow 004) with no sign of recent activity.



Photograph 19. View facing southeast from the northwest corner of parcel 045207111 showing tamarisk, logger head shrike located in adjacent tamarisk (FID 34)



Photograph 20. Burrowing owl pellet located at center of parcel 045309129, no burrow nearby (Bio point 2)



Photograph 21. Large mound with small burrows and white-wash located at the northeast corner of parcel 045212139 (Bio point 1)

Appendix C

Floral and Faunal Compendium

Plant Species Observed Within the Project Area on July 20-22, 2021

Scientific Name	Common Name	Status	Native or Introduced
Plants			
Trees/Shrubs/Grasses			
<i>Atriplex spinifera</i>	salt bush	–	Native
<i>Ambrosia dumosa</i>	white bursage	–	Native
<i>Ambrosia salsola</i>	cheesebush	–	Native
<i>Cylindropuntia echinocarpa</i>	golden cholla	–	Native
<i>Cuscuta sp.</i>	desert dodder	–	Native
<i>Ephedra nevadensis</i>	Nevada Jointfir	–	Native
<i>Larrea tridentata</i>	creosote bush	–	Native
<i>Lotus scoparius</i>	deer weed	–	Native
<i>Lycium fremontii</i>	Fremont boxthorn	–	Native
<i>Psoralea fremontii</i>	indigo bush	–	Native
<i>Salsola tragus</i>	Russian thistle	–	Non-native
<i>Schismus arabicus</i>	Mediterranean grass	–	Non-native
<i>Solanum parishii</i>	nightshade	–	Native
<i>Stanleya pinnata</i>	Prince's plume	–	Native
<i>Suaeda nigra</i>	bush seep weed	–	Native
<i>Tamarix sp.</i>	salt cedar	–	Non-native
Animals			
Birds			
<i>Accipiter cooperii</i>	Cooper's hawk	–	Native
<i>Athene cunicularia</i>	burrowing owl	SSC	Native
<i>Auriparus flaviceps</i>	verdin	–	Native
<i>Buteo jamaicensis</i>	red-tailed hawk	–	Native
<i>Callipepla gambelii</i>	Gambel's quail	–	Native
<i>Cathartes aura</i>	turkey vulture	–	Native
<i>Corvus corax</i>	common raven	–	Native
<i>Eremophila alpestris</i>	horned lark	–	Native
<i>Falco mexicanus</i>	prairie falcon	WL	Native
<i>Falco sparverius</i>	American kestrel	–	Native
<i>Geococcyx californianus</i>	roadrunner	–	Native
<i>Haemorhous mexicanus</i>	house finch	–	Native
<i>Lanius ludovicianus</i>	loggerhead shrike	SSC	Native
<i>Melospiza melodia</i>	song sparrow	–	Native
<i>Mimus polyglottos</i>	northern mockingbird	–	Native
<i>Myiarchus cinerascens</i>	ash-throated flycatcher	–	Native
<i>Plegadis chihi</i>	white faced ibis	–	Native
<i>Sayornis saya</i>	say's phoebe	–	Native
<i>Streptopelia decaocto</i>	Eurasian collared dove	–	Native

Scientific Name	Common Name	Status	Native or Introduced
<i>Toxostoma lecontei</i>	Leconte's thrasher	—	Native
<i>Tyrannus verticalis</i>	western kingbird	—	Native
<i>Zenaida macroura</i>	mourning dove	—	Native
Reptile			
<i>Aspidoscelis tigris</i>	western whiptail lizard	—	Native
<i>Dipsosaurus dorsalis</i>	desert iguana	--	Native
<i>Lampropeltis getula</i>	kingsnake	—	Native
<i>Masticophis flagellum</i>	coachwhip	--	Native
<i>Uta stansburiana</i>	side blotched lizard	—	Native
Mammals			
<i>Ammospermophilus</i>	antelope ground squirrel	—	Native
<i>Canis latrans</i>	coyote	—	Native
<i>Dipodomys deserti</i>	desert kangaroo rat	—	Native
<i>Lepus californicus</i>	black tailed jack rabbit	—	Native
<i>Otospermophilus beecheyi</i>	California ground squirrel	—	Native
<i>Peromyscus maniculatus</i>	deer mouse	—	Native

Appendix D

Special-Status Species Evaluation Tables

Special-Status Plant and Animal Species in the Regional Vicinity of the Project Area

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Plants and Lichens				
<i>Acanthoscyphus parishii</i> var. <i>cienegensis</i> Cienega Seca oxytheca	None/None G4?T2/S2 1B.3	Annual herb. Blooms Jun-Sep. Occurs in upper montane coniferous forest. Dry gravelly banks and granitic sand. 2090-2450m (6857-8038ft).	Not Expected	The Project area is out of the known elevation range of this species.
<i>Acanthoscyphus parishii</i> var. <i>goodmaniana</i> Cushenbury oxytheca	FE/None G4?T1/S1 1B.1	Annual herb. Blooms May-Oct. Occurs in pinyon and juniper woodland. On limestone talus and rocky slopes. 1220-2380 m (4002-7808ft).	Not Expected	The Project area is out of the known elevation range of this species.
<i>Ambrosia pumila</i> San Diego ambrosia	FE/None G1/S1 1B.1	Chaparral, coastal scrub, valley and foothill grassland, vernal pools. Sandy loam or clay soil, sometimes alkaline. In valleys; persists where disturbance has been superficial. Sometimes on margins or near vernal pools. 3-580 m.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Arenaria ursina</i> Bear Valley sandwort	FT/None G1/S1 1B.2	Meadows and seeps, pebble (pavement) plain, pinyon and juniper woodland. Mesic, rocky sites. 1795-2895 m. Blooms May-Aug.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Astragalus albens</i> Cushenbury milk-vetch	FE/None G1/S1 1B.1	Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland. Sandy or stony flats, rocky hillsides, canyon washes, & fans, on carbonate or mixed granitic-calcareous debris. 1095-2000m. Blooms Mar-Jun.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Astragalus bernardinus</i> San Bernardino milk-vetch	None/None G3/S3 1B.2	Joshua tree woodland, Pinyon and juniper woodland. Granitic or carbonate substrates. 900-2000m. Blooms Apr-Jun.	Not Expected	Suitable habitat (Joshua tree woodland, pinyon and juniper woodland) does not occur within the Project area.
<i>Astragalus brauntonii</i> Braunton's milk-vetch	FE/None G2/S2 1B.1	Chaparral, coastal scrub, valley and foothill grassland. Recent burns or disturbed areas; usually on sandstone with carbonate layers. Soil specialist, requires shallow soils to defeat pocket gophers and open areas, preferably on hilltops, saddles, or bowls between hills. 3-640 m. Blooms Jan-Aug.	Not Expected	The Project area is out of the known elevation range of this species.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Astragalus jaegerianus</i> Lane Mountain milk-vetch	FE/None G2/S2 1B.1	Joshua tree woodland, Mojavean desert scrub. Dry, stony hillsides and desert mesas, in granite sand and gravel. Commonly with Joshua trees, usually under shrubs. 975-1250 m. Blooms Apr-Jun.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Astragalus lentiginosus</i> var. <i>coachellae</i> = Coachella Valley milk-vetch	FE/None G5T1/S1 1B.2	Desert dunes, Sonoran desert scrub. Sandy flats, washes, outwash fans, sometimes on dunes. 35-695 m.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Astragalus lentiginosus</i> var. <i>sierrae</i> Big Bear Valley milk-vetch	None/None G5T2/S2 1B.2	Meadows and seeps, Mojavean desert scrub, Pinyon and juniper woodland, Upper montane coniferous forest. Stony meadows and open pinewoods; sandy and gravelly soils in a variety of habitats. 1800-2600m. Blooms Apr-Aug.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Astragalus leucolobus</i> Big Bear Valley woollypod	None/None G2/S2 1B.2	Lower montane coniferous forest, Pebble (Pavement) plain, Pinyon and juniper woodland, Upper montane coniferous forest. Dry pine woods, gravelly knolls among sagebrush, or stony lake shores in the pine belt. 1100-2885m. Blooms May-Jul.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Astragalus tidestromii</i> Tidestrom's milk-vetch	None/None G4/S2 2B.2	Mojavean desert scrub. Washes, in sandy or gravelly soil. On limestone. 600-1785m. Blooms (Jan)Apr-Jul.	Not Expected	Marginally suitable desert scrub habitat occurs in the Project area; however, there are no known occurrences within 5 miles of the Project area.
<i>Astragalus tricarinatus</i> triple-ribbed milk-vetch	FE/None G2/S2 1B.2	Joshua tree woodland, Sonoran desert scrub. Hot, rocky slopes in canyons and along edge of boulder-strewn desert washes, with Larrea and Encelia. 455-1585 m.	Not Expected	Suitable Joshua tree woodland and Sonoran desert scrub habitat does not occur within the Project area. There are no known occurrences within 5 miles of the Project area.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Atriplex parishii</i> Parish's brittle scale	None/None G1G2/S1 1B.1	Chenopod scrub, Playas, Vernal pools. Usually on drying alkali flats with fine soils. 25-1900m. Blooms Jun-Oct.	Low Potential	Marginally suitable desert scrub habitat occurs within the Project area. There are no known occurrences within 5 miles of the Project area.
<i>Berberis fremontii</i> Fremont barberry	None/None G5/S3 2B.3	Joshua tree "woodland", Pinyon and juniper woodland. Rocky, sometimes granitic. 1145-1720m. Blooms Mar-May.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Berberis nevadensis</i> Nevin's barberry	FE/SE G1/S1 1B.1	Chaparral, cismontane woodland, coastal scrub, riparian scrub. On steep, north-facing slopes or in low grade sandy washes. 90-1590m. Blooms (Feb)Mar-Jun.	Not Expected	Suitable chaparral, cismontane woodland, coastal scrub, and riparian scrub habitats do not occur within the Project area. There are no known occurrences within 5 miles of the Project area.
<i>Boechera dispar</i> pinyon rockcress	None/None G3/S3 2B.3	Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland. Granitic, gravelly slopes & mesas. Often under desert shrubs which support it as it grows. 1200-2540m. Blooms Mar-Jun.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Boechera lincolnensis</i> Lincoln rockcress	None/None G4G5/S3 2B.3	Chenopod scrub, Mojavean desert scrub. On limestone. 1100-2705m. Blooms Mar-May.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Boechera parishii</i> Parish's rockcress	None/None G2/S2 1B.2	Pebble (Pavement) plain, Pinyon and juniper woodland, Upper montane coniferous forest. Generally found on pebble plains on clay soil with quartzite cobbles; sometimes on limestone. 1770-2990m. Blooms Apr-May.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Boechera shockleyi</i> Shockley's rockcress	None/None G3/S2 2B.2	Pinyon and juniper woodland. On ridges, rocky outcrops and openings on limestone or quartzite. 875-2310m. Blooms May-Jun.	Not Expected	Suitable woodland habitat and rocky outcrops do not occur within the Project area. There are no known occurrences within 5 miles of the Project area.

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Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Brodiaea filifolia</i> thread-leaved brodiaea	FT/SE G2/S2 1B.1	Chaparral, cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools. Usually associated with annual grassland and vernal pools; often surrounded by shrubland habitats. Occurs in openings on clay soils. 15-1030 m. Blooms Mar-Jun.	Not Expected	Suitable chaparral, cismontane woodland, coastal scrub, playas, valley and foothills grassland, and vernal pool habitats do not occur within the Project area. There are no known occurrences within 5 miles of the Project area.
<i>Calochortus palmeri</i> var. <i>palmeri</i> Palmer's mariposa-lily	None/None G3T2/S2 1B.2	Chaparral, Lower montane coniferous forest, Meadows and seeps. Vernal moist places in yellow-pine forest, chaparral. 710-2390m. Blooms Apr-Jul.	Not Expected	Suitable habitat (chaparral, coniferous forest, meadows and seeps) does not occur within the Project area. There are no recorded occurrences within 5 miles of the Project area.
<i>Calochortus striatus</i> alkali mariposa lily	None/None G3?/S2S3 1B.2	Chaparral, Chenopod scrub, Meadows and seeps, Mojavean desert scrub. Alkaline meadows and ephemeral washes. 70-1600m. 70-1595m. Blooms Apr-Jun.	Low Potential	Marginally suitable chenopod scrub habitat occurs within the Project area. The nearest recorded occurrence (Occ. No. 27 from 2016) is approximately 3.4 miles southwest of the Project area.
<i>Calyptridium pygmaeum</i> pygmy pussypaws	None/None G1G2/S1S2 1B.2	Subalpine coniferous forest, Upper montane coniferous forest. Sandy or gravelly sites. 1980-3110m. Blooms Jun-Aug.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Carex scirpoidea</i> ssp. <i>pseudoscirpoidea</i> western single-spiked sedge	None/None G5T4/S2 2B.2	Alpine boulder and rock field, Meadows and seeps, Subalpine coniferous forest. Often on limestone; mesic sites. 2990-3700m. Blooms Jul-Sep.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Castilleja cinerea</i> ash-gray paintbrush	FT/None G1G2/S1S2 1B.2	Meadows and seeps, Mojavean desert scrub, Pebble (Pavement) plain, Pinyon and juniper woodland, Upper montane coniferous forest. Endemic to the San Bernardino Mountains, in clay openings; often in meadow edges. 1800-2960m. Blooms Jun-Aug.	Not Expected	The Project area is out of the known elevation range of this species.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Castilleja lasiorhyncha</i> San Bernardino Mountains owl's-clover	None/None G2?/S2? 1B.2	Chaparral, Meadows and seeps, Pebble (Pavement) plain, Riparian woodland, Upper montane coniferous forest. Mesic to drying soils in open areas of stream and meadow margins or in vernal wet areas. 1300-2390m. Blooms May-Aug.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Chorizanthe xanti</i> var. <i>leucotheca</i> white-bracted spineflower	None/None G4T3/S3 1B.2	Coastal scrub, Mojavean desert scrub, Pinyon and juniper woodland. Sandy or gravelly places. 300-1200m. Blooms Apr-Jun.	Not Expected	Suitable coastal scrub, Mojavean desert scrub, and pinyon and juniper woodland habitats do not occur within the Project area. Additionally, there are no recorded occurrences within 5 miles of the Project area.
<i>Claytonia peirsonii</i> ssp. <i>bernardinus</i> San Bernardino spring beauty	None/None G2G3T1/S1 1B.1	Pinyon and juniper woodland, Upper montane coniferous forest. Carbonate, Openings (usually), Rocky, Talus 2360-2465m. Blooms Mar-Apr.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Claytonia peirsonii</i> ssp. <i>californacis</i> Furnace spring beauty	None/None G2G3T1/S1 1B.1	Pinyon and juniper woodland, Upper montane coniferous forest. Carbonate, Openings (usually), Rocky, Talus 2300-2300m. Blooms Mar-May.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Cryptantha clokeyi</i> Clokey's cryptantha	None/None G3/S3 1B.2	Mojavean desert scrub. Sandy or gravelly soils. 725-1365m. Blooms Apr.	Not Expected	Marginally suitable desert scrub habitat occurs within the Project area; however, no rocky slopes occur within the Project area. The nearest recorded occurrence (Occ. No. 16 from 2010) is approximately 0.75-mile east of the Project area.
<i>Cymopterus multinervatus</i> purple-nerve cymopterus	None/None G4G5/S2 2B.2	Mojavean desert scrub, Pinyon and juniper woodland. Sandy or gravelly places. 790-1800m. Blooms Mar-Apr.	Low Potential	Marginally suitable desert scrub habitat occurs within the Project area. There are five recorded occurrences within 5 miles of the Project area.

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Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Diplacus mohavensis</i> Mojave monkeyflower	None/None G2/S2 1B.2	Joshua tree "woodland", Mojavean desert scrub. Dry sandy or rocky washes along the Mojave River. 600-1200m. Blooms Apr-Jun.	Not Expected	Suitable Joshua tree woodland and Mojavean desert scrub habitats do not occur within the Project area. Additionally, there are no recorded occurrences within 5 miles of the Project area.
<i>Dodecahema leptoceras</i> slender-horned spineflower	FE/SE G1/S1 1B.1	Chaparral, cismontane woodland, coastal scrub. Flood deposited terraces and washes; associates include <i>Encelia</i> , <i>Dalea</i> , and <i>Lepidospartum</i> . Sandy soils. 20-765 m Blooms Apr-Jun.	Not Expected	Suitable chaparral, cismontane woodland, and coastal scrub habitat does not occur within the Project area. There are no known occurrences within 5 miles of the Project area.
<i>Drymocallis cuneifolia</i> var. <i>cuneifolia</i> wedgieleaf woodbeauty	None/None G2T1/S1 1B.1	Riparian scrub, Upper montane coniferous forest. Sometimes on carbonate. 1800-2415m. Blooms Jun-Aug.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Dryopteris filix-mas</i> male fern	None/None G5/S2 2B.3	Upper montane coniferous forest. In granite crevices. 2400-3100m. Blooms Jul-Sep.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Dudleya abramsii</i> ssp. <i>affinis</i> San Bernardino Mountains dudleya	None/None G4T2/S2 1B.2	Pebble (Pavement) plain, Pinyon and juniper woodland, Upper montane coniferous forest. Outcrops, granite or quartzite, rarely limestone. 1250-2600m. Blooms Apr-Jul.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Dudleya cymosa</i> ssp. <i>ovatifolia</i> Santa Monica Mountains dudleya	FT/None G5T1/S1 1B.1	Chaparral, coastal scrub. In canyons on volcanic or sedimentary substrates; primarily on north-facing slopes. 150-335 m. Blooms Mar-Jun.	Not Expected	Suitable chaparral and coastal scrub habitat does not occur within the Project area. There are no known occurrences within 5 miles of the Project area.
<i>Elymus salina</i> Salina Pass wild-rye	None/None G4G5/S2S3 2B.3	Pinyon and juniper woodland. Rocky sites. 1350- 2135m. Blooms May-Jun.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Eremogone ursina</i> Big Bear Valley sandwort	FT/None G1/S1 1B.2	Meadows and seeps, Pebble (Pavement) plain, Pinyon and juniper woodland. Mesic, rocky sites. 1800-2900m. Blooms May-Aug.	Not Expected	The Project area is out of the known elevation range of this species.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Eriastrum densifolium</i> ssp. <i>Sanctorum</i> Santa Ana River wooly-star	FE/SE G4T1/S1 1B.1	Chaparral, coastal scrub. In sandy soils on river floodplains or terraced fluvial deposits. 180-705 m. Blooms Apr-Sep.	Not Expected	Suitable chaparral and coastal scrub habitats do not occur within the Project area. There are no known occurrences within 5 miles of the Project area.
<i>Erigeron parishii</i> Parish's daisy	FT/None G2/S2 1B.1	Mojavean desert scrub, Pinyon and juniper woodland. Often on carbonate; limestone mountain slopes; often associated with drainages. Sometimes on granite. 800-2000m. Blooms May-Aug.	Not Expected	Suitable Mojavean desert scrub and pinyon and juniper woodland habitats do not occur within the Project area. Additionally, there are no recorded occurrences within 5 miles of the Project area.
<i>Eriogonum evanidum</i> vanishing wild buckwheat	None/None G2/S1 1B.1	Chaparral, Cismontane woodland, Lower montane coniferous forest, Pinyon and juniper woodland. Sandy sites. 1100-2225m. Blooms Jul-Oct.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Eriogonum kennedyi</i> var. <i>austromontanum</i> southern mountain buckwheat	FT/None G4T2/S2 1B.2	Lower montane coniferous forest, Pebble (Pavement) plain. Usually found in pebble plain habitats. 1770-2890m. Blooms Jun-Sep.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Eriogonum microthecum</i> var. <i>johnstonii</i> Johnston's buckwheat	None/None G5T2/S2 1B.3	Subalpine coniferous forest, Upper montane coniferous forest. Slopes and ridges on granite or limestone. 1795-2865 m 1829-2926m. Blooms Jul-Sep.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Eriogonum ovalifolium</i> var. <i>vineum</i> Cushenbury buckwheat	FE/None G5T1/S1 1B.1	Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland. Limestone mountain slopes. Dry, usually rocky places. 1400-2440m. Blooms May-Aug.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Erythranthe exigua</i> San Bernardino Mountains monkeyflower	None/None G2/S2 1B.2	Meadows and seeps, Pebble (Pavement) plain, Upper montane coniferous forest. Seeps and sandy sometimes disturbed soil in moist drainages of annual streams; clay soils. 1800-2315m. Blooms May-Jul.	Not Expected	The Project area is out of the known elevation range of this species.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Erythranthe purpurea</i> little purple monkeyflower	None/None G2/S2 1B.2	Meadows and seeps, Pebble (Pavement) plain, Upper montane coniferous forest. Dry clay or gravelly soils under Jeffrey pines, along annual streams or vernal springs & seeps. 1900-2300m. Blooms May-Jun.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Euphorbia platysperma</i> flat-seeded spurge	None/None G3/S1 1B.2	Desert dunes, Sonoran desert scrub. Sandy places or shifting dunes. Possibly a waif in California; more common in Arizona and Mexico. 65-100m. Blooms Feb-Sep.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Heuchera parishii</i> Parish's alumroot	None/None G3/S3 1B.3	Alpine boulder and rock field, Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest. Rocky places. Sometimes on carbonate. 1500-3800m. Blooms Jun-Aug.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Ivesia argyrocoma</i> var. <i>argyrocoma</i> silver-haired ivesia	None/None G2T2/S2 1B.2	Meadows and seeps, Pebble (Pavement) plain, Upper montane coniferous forest. In pebble plains and meadows with other rare plants. 1463-2960m. Blooms Jun-Aug.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Lesquerella kingii</i> ssp. <i>Bernardina</i> San Bernardino Mountains bladderpod	FE/None G5T1/S1 1B.1	Lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest. Dry sandy to rocky carbonate soils. 1980-2590 m. Blooms May-Jun.	Not Expected	Suitable lower montane coniferous forest, pinyon and juniper woodland, and subalpine coniferous forest habitats do not occur within the Project area. There are no known occurrences within 5 miles of the Project area.
<i>Lewisia brachycalyx</i> short-sepaed lewisia	None/None G4/S2 2B.2	Lower montane coniferous forest, Meadows and seeps. Dry to moist meadows in rich loam. 1370-2300m. Blooms (Feb)Apr-Jun(Jul).	Not Expected	The Project area is out of the known elevation range of this species.
<i>Lilium parryi</i> lemon lily	None/None G3/S3 1B.2	Lower montane coniferous forest, Meadows and seeps, riparian forest, Upper montane coniferous forest. Wet, mountainous terrain; generally in forested areas; on shady edges of streams, in open boggy meadows & seeps. 1220-2745m. Blooms Jul-Aug.	Not Expected	The Project area is out of the known elevation range of this species.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Linanthus killipii</i> Baldwin Lake linanthus	None/None G1/S1 1B.2	Joshua tree "woodland", Meadows and seeps, Pebble (Pavement) plain, Pinyon and juniper woodland. Usually on pebble plains with other rare species. 1700-2400m. Blooms May-Jul.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Linanthus maculatus</i> ssp. <i>maculatus</i> Little San Bernardino Mtns. linanthus	None/None G2T2/S2 1B.2	Desert dunes, Joshua tree "woodland", Mojavean desert scrub, Sonoran desert scrub. Sandy places. Usually in light-colored quartz sand; often in wash or bajada. 140-1220m. Blooms Mar-May.	Not Expected	Suitable desert dunes, Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub habitats do not occur within the Project area. Additionally, there are no recorded occurrences within 5 miles of the Project area.
<i>Menodora spinescens</i> var. <i>mohavensis</i> Mojave menodora	None/None G4T2/S2 1B.2	Mojavean desert scrub. Rocky hillsides, canyons. Andesite gravel. 690-2000m. Blooms Apr-May.	Not Expected	Suitable Mojavean desert scrub, rocky hillsides, and canyon habitats do not occur within the Project area. The nearest recorded occurrence (Occ. No. 6 from 1906) is located approximately 3.1 miles northeast of the Project area. However, this occurrence is over 100 years old.
<i>Mentzelia tridentata</i> creamy blazing star	None/None G3/S3 1B.3	Mojavean desert scrub. 700-1175m. Blooms Mar-May.	Not Expected	Marginally suitable desert scrub habitat occurs within the Project area. The nearest recorded occurrence (Occ. No. 14 from 1978) is located approximately 3.7 miles north of the Project area.
<i>Navarretia peninsularis</i> Baja navarretia	None/None G3/S2 1B.2	Chaparral, Lower montane coniferous forest, Meadows and seeps, Pinyon and juniper woodland. Wet areas in open forest. 1500-2300m. Blooms (May)Jun-Aug.	Not Expected	The Project area is out of the known elevation range of this species.

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Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Oxytheca parishii</i> var. <i>goodmaniana</i> Cushenbury oxytheca	FE/None G4?T1/S1 1B.1	Annual herb. Blooms May-Oct. Occurs in pinyon and juniper woodland. On limestone talus and rocky slopes. 1220-2380 m (4002-7808 ft).	Not Expected	Suitable pinyon and juniper woodland habitats do not occur within the Project area. There are no known occurrences within 5 miles of the Project area.
<i>Packera bernardina</i> San Bernardino ragwort	None/None G2/S2 1B.2	Meadows and seeps, Pebble (Pavement) plain, Upper montane coniferous forest. Mesic, sometimes alkaline meadows, and dry rocky slopes. 1800-2300m. Blooms May-Jul.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Pediomelum castoreum</i> Beaver Dam breadroot	None/None G3/S2 1B.2	Joshua tree woodland, Mojavean desert scrub. Sandy soils; washes and roadcuts. 610-1525m. Blooms Apr-May.	Moderate Potential	Marginally suitable desert scrub habitat occurs within the Project area. The nearest recorded occurrence (Occ. No. 24 from 2017) is located approximately 0.1-mile from the Project area.
<i>Perideridia parishii</i> ssp. <i>parishii</i> Parish's yampah	None/None G4T3T4/S2 2B.2	Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest. Damp meadows or along streambeds-prefers an open pine canopy. 1465-3000m. Blooms Jun-Aug.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Phacelia parishii</i> Parish's phacelia	None/None G2G3/S1 1B.1	Mojavean desert scrub, Playas. Alkaline flats and slopes or on clay soils. 540-1200m. Blooms Apr-May(Jun-Jul).	Moderate Potential	Suitable spinescale scrub occurs on the Project area. Additionally, there are three recorded occurrences within 5 miles of the Project area.
<i>Phlox dolichantha</i> Big Bear Valley phlox	None/None G2/S2 1B.2	Pebble (Pavement) plain, Upper montane coniferous forest. Sloping hillsides, in shade under pines and <i>Quercus kelloggii</i> , with heavy pine litter; also in openings. 1830-2970m. Blooms May-Jul.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Physaria kingii</i> ssp. <i>bernardina</i> San Bernardino Mountains bladderpod	FE/None G5T1/S1 1B.1	Lower montane coniferous forest, Pinyon and juniper woodland, Subalpine coniferous forest. Dry sandy to rocky carbonate soils. 1850-2700m. Blooms May-Jun.	Not Expected	The Project area is out of the known elevation range of this species.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Plagiobothrys parishii</i> Parish's popcornflower	None/None G1/S1 1B.1	Great Basin scrub, Joshua tree "woodland". Alkaline soils; mesic sites. 750-1400m. Blooms Mar-Jun(Nov).	Low Potential	Suitable Great Basin scrub and Joshua tree woodland habitats do not occur within the Project area. The nearest recorded occurrence (Occ. No. 1 from 2005) is located approximately 3.3 miles southwest of the Project area.
<i>Poa atropurpurea</i> San Bernardino blue grass	FE/None G2/S2 1B.2	Meadows and seeps. Mesic meadows of open pine forests and grassy slopes, loamy alluvial to sandy loam soil. 1360-2455m. Blooms (Apr)May- Jul(Aug).	Not Expected	The Project area is out of the known elevation range of this species.
<i>Poliomintha incana</i> frosted mint	None/None G5/SH 2A	Lower montane coniferous forest. In boggy soil. 1600-1700m. Blooms Jun-Jul.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Polygala acanthoclada</i> thorny milkwort	None/None G4/S2S3 2B.3	Chenopod scrub, Joshua tree "woodland", Pinyon and juniper woodland. 760-2285m. Blooms May- Aug.	Low Potential	Marginally suitable chenopod scrub habitat occurs within the Project area. There are no recorded occurrences within 5 miles of the Project area.
<i>Polygala intermontana</i> intermountain milkwort	None/None G4/S2 2B.1	Pinyon and juniper woodland. 2010-3080m. Blooms Jun-Jul(Oct).	Not Expected	The Project area is out of the known elevation range of this species.
<i>Puccinellia parishii</i> Parish's alkali grass	None/None G3/S1 1B.1	Meadows and seeps. Alkali springs and seeps in deserts. 700-1000m. Blooms Apr-May.	Not Expected	Suitable meadows and seeps do not occur within the Project area. The nearest recorded occurrence (Occ. No. 1 from 2015) is located approximately 3.3 miles southwest of the Project area.

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<i>Puccinellia simplex</i> California alkali grass	None/None G3/S2 1B.2	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools. Alkaline, vernal mesic. Sinks, flats, and lake margins. 2-930m. Blooms Mar-May.	Low Potential	Marginally suitable chenopod scrub habitat occurs within the Project area. The nearest recorded occurrence (Occ. No. 1 from 2017) is located approximately 3.3 miles southwest of the Project area.
<i>Pyrrocoma uniflora</i> var. <i>gossypina</i> Bear Valley pyrrocoma	None/None G5T1/S1 1B.2	Meadows and seeps, Pebble (Pavement) plain. Meadows, meadow edges, and along streams in or near pebble plain habitat. 1600-2300m. Blooms Jul-Sep.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Rorippa gambellii</i> Gambel's watercress	FE/ST G1/S1 1B.1	Marshes and swamps. Freshwater and brackish marshes at the margins of lakes and along streams, in or just above the water level. 5-305 m. Blooms Apr-Oct.	Not Expected	Suitable marshes and swamps habitats do not occur within the Project area. There are no known occurrences within 5 miles of the Project area.
<i>Rosa woodsii</i> var. <i>glabrata</i> Cushenbury rose	None/None G5T1/S1 1B.1	Mojavean desert scrub. Springs. 910-1435m. Blooms (Apr)May-Aug.	Not Expected	Suitable spring habitat does not occur within the Project area. Additionally, there are no recorded occurrences within 5 miles of the Project area.
<i>Saltugilia latimeri</i> Latimer's woodland-gilia	None/None G3/S3 1B.2	Chaparral, Mojavean desert scrub, Pinyon and juniper woodland. Rocky or sandy substrate; sometimes in washes, sometimes limestone. 400-1900m. Blooms Mar-Jun.	Not Expected	Suitable chaparral, Mojavean desert scrub, and pinyon and juniper woodland habitats do not occur within the Project area. Additionally, there are no recorded occurrences within 5 miles of the Project area.
<i>Sidalcea hickmanii</i> ssp. <i>parishii</i> Parish's checkerbloom	None/SR G3T1/S1 1B.2	Chaparral, Cismontane woodland, Lower montane coniferous forest. Disturbed burned or cleared areas on dry, rocky slopes, in fuel breaks & fire roads along the mountain summits. 1000-2499m. Blooms (May)Jun-Aug.	Not Expected	The Project area is out of the known elevation range of this species.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Sidalcea malviflora</i> ssp. <i>dolosa</i> Bear Valley checkerbloom	None/None G5T2/S2 1B.2	Lower montane coniferous forest, Meadows and seeps, Riparian woodland, Upper montane coniferous forest. Known from wet areas within forested habitats. Affected by hydrological changes. 1495-2685m. Blooms May-Aug.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Sidalcea neomexicana</i> salt spring checkerbloom	None/None G4/S2 2B.2	Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas. Alkali springs and marshes. 15-1530m. Blooms Mar-Jun.	Not Expected	Alkali springs and marshes are not present within the Project area. Marginally suitable desert scrub habitat occurs within the Project area. The nearest recorded occurrence (Occ. No. 5 from 2005) is located approximately 3.3 miles southwest of the Project area.
<i>Sidalcea pedata</i> bird-foot checkerbloom	FE/SE G1/S1 1B.1	Meadows and seeps, Pebble (Pavement) plain. Vernal mesic sites in meadows or pebble plains. 1600-2500m. Blooms May-Aug.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Sphenopholis obtusata</i> prairie wedge grass	None/None G5/S2 2B.2	Cismontane woodland, Meadows and seeps. Open moist sites, along rivers and springs, alkaline desert seeps. 300-2000m. Blooms Apr-Jul.	Not Expected	Suitable habitat (cismontane woodland, meadows, and seeps) does not occur within the Project area. There are no recorded occurrences within 5 miles of the Project area.
<i>Symphotrichum defoliatum</i> San Bernardino aster	None/None G2/S2 1B.2	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps, Valley and foothill grassland. Vernal mesic grassland or near ditches, streams and springs; disturbed areas. 2-2040m. Blooms Jul-Nov.	Not Expected	Suitable habitat (cismontane woodland, coastal scrub, marshes, swamps, meadows, seeps, grasslands) do not occur within the Project area. There are no recorded occurrences within 5 miles of the Project area.
<i>Taraxacum californicum</i> California dandelion	FE/None G1G2/S1S2 1B.1	Meadows and seeps. Mesic meadows, usually free of taller vegetation. 1620-2800m. Blooms May-Aug.	Not Expected	The Project area is out of the known elevation range of this species.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Thelypodium stenopetalum</i> slender-petaled thelypodium	FE/SE G1/S1 1B.1	Meadows and seeps. Seasonally moist alkaline clay soils; associated with seeps and springs in the pebble plains. 1600-2500m. Blooms May-Sep.	Not Expected	The Project area is out of the known elevation range of this species.
<i>Viola pinetorum</i> ssp. <i>grisea</i> grey-leaved violet	None/None G4G5T3/S3 1B.2	Meadows and seeps, Subalpine coniferous forest, Upper montane coniferous forest. Dry mountain peaks and slopes. 1500-3400m. Blooms Apr-Jul.	Not Expected	The Project area is out of the known elevation range of this species.
Animals				
Reptiles				
<i>Gopherus agassizii</i> desert tortoise	FT/ST G3/S2S3	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.	Moderate Potential (in natural scrub habitat)	The Project area is within the DRECP modeled range and historic tortoise burrows were observed in this area. Additionally, there are recorded occurrences within 5 miles of the Project area.
Amphibians				
<i>Anaxyrus californicus</i> arroyo toad	FE/None G2G3/S2S3 SSC	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	Not Expected	Suitable wash and intermittent stream habitats do not occur within the Project area. There are no recorded occurrences within 5 miles of the Project area.
<i>Rana draytonii</i> California red-legged frog	FT/None G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	Not Expected	Required permanent sources of deep water do not occur within the Project area. There are no recorded occurrences within 5 miles of the Project area.
<i>Rana muscosa</i> mountain yellow-legged frog	FT/SE G1/S1 WL	Federal listing refers to populations in the San Gabriel, San Jacinto and San Bernardino mountains (southern DPS). Northern DPS was determined to warrant listing as endangered, Apr 2014, effective June 30, 2014. Always encountered within a few feet of water. Tadpoles may require 2-4 years to complete their aquatic development,	Not Expected	Suitable aquatic habitat does not occur within the Project area. There are no recorded occurrences within 5 miles of the Project area.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
Fish				
<i>Catostomus santaanae</i> Santa Ana sucker	FT/None G1/S1	Endemic to Los Angeles Basin south coastal streams. Habitat generalists, but prefer sand-rubble-boulder bottoms, cool, clear water, and algae.	Not Expected	Suitable aquatic habitat does not occur within the Project area. There are no recorded occurrences within 5 miles of the Project area.
<i>Gasterosteus aculeatus williamsoni</i> unarmored threespine stickleback	FE/SE G5T1/S1 FP	Weedy pools, backwaters, and among emergent vegetation at the stream edge in Southern California streams. Cool (<24 C) clear water with abundant vegetation.	Not Expected	Suitable aquatic habitat does not occur within the Project area. There are no recorded occurrences within 5 miles of the Project area.
<i>Gila bicolor</i> ssp. <i>Mohavensis</i> Mohave tui chub	FE/SE G4T1/S1 FP	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	Suitable aquatic habitat does not occur within the Project area. There are no recorded occurrences within 5 miles of the Project area.
<i>Gila elegans</i> bonytail	FE/SE G1/SH	Found in the Colorado River bordering California. Adapted for swimming in swift water, but both adults and young need backwaters and eddies. Needs gravel riffles for spawning.	Not Expected	Suitable aquatic habitat does not occur within the Project area. There are no recorded occurrences within 5 miles of the Project area.
<i>Xyrauchen texanus</i> razorback sucker	FE/SE G1/S1S2 FP	Found in the Colorado River bordering California. Adapted for swimming in swift currents but also need quiet waters. Spawn in areas of sand/gravel/rocks in shallow water.	Not Expected	Suitable aquatic habitat does not occur within the Project area. There are no recorded occurrences within 5 miles of the Project area.
Invertebrates				
<i>Branchinecta sandiegonensis</i> San Diego fairy shrimp	FE/None G2/S2	Endemic to San Diego and Orange County mesas within vernal pools.	Not Expected	The Project area is outside the known range of the species. There are no recorded occurrences within 5 miles of the Project area.
<i>Danaus plexippus</i> monarch butterfly	FC/None G4T2T3/ S2S3	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves with nectar and water sources nearby.	Not Expected	The Project area is outside the known range of the species. There are no recorded occurrences within 5 miles of the Project area.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Euphydryas editha quino</i> quino checkerspot butterfly	FE/None G5T1T2/ S1S2	Sunny openings within chaparral and coastal sage shrublands in parts of Riverside and San Diego counties. Hills and mesas near the coast.	Not Expected	The Project area is outside the known range of the species. There are no recorded occurrences within 5 miles of the Project area.
<i>Rhaphiomidas terminatus abdominalis</i> Delhi sands flower-loving fly	FE/None G1T1/S1	Found only in areas of the Delhi Sands formation in southwestern San Bernardino and northwestern Riverside counties. Requires fine, sandy soils, often with wholly or partly consolidated dunes and sparse vegetation.	Not Expected	The Project area is outside the known range of the species. There are no recorded occurrences within 5 miles of the Project area.
Birds				
<i>Aquila chrysaetos</i> golden eagle	None/None G5/S3 FP WL	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Moderate Potential (foraging)	Suitable nesting habitat does not occur within the Project area. However, suitable foraging habitat is present. Additionally, there are recorded breeding occurrences within 5 miles of the Project area.
<i>Athene cunicularia</i> burrowing owl	None/None G4/S3 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Present	Burrowing owl were observed within the Project area during the July 2021 reconnaissance surveys.
<i>Charadrius nivosus</i> western snowy plover	FT/None G3T3/S2 SSC	Sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting	Not Expected	Suitable sandy beach, salt pond levee, and alkali lake habitats do not occur within the Project area. There are no known occurrences within 5 miles of the Project area.
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	FE/SE G5T2/S1	Inhabits riparian woodlands in southern California.	Not Expected	Suitable riparian woodland habitat does not occur within the Project area. There are no known occurrences within 5 miles of the Project area.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Falco mexicanus</i> prairie falcon	None/None G5/S4 WL	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	Present (foraging), Not expected (nesting)	A prairie falcon was observed within the Project area during the July 2021 reconnaissance surveys. Suitable foraging habitat occurs on site. No suitable cliffs for nesting occur on the Project area. r
<i>Gymnogyps californianus</i> California condor	FE/SE G1/S1 FP	Require vast expanses of open savannah, grasslands, and foothills chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	Low Potential (foraging)	Suitable foraging habitat is present within the Project area. However, there are no recorded occurrences within 5 miles of the Project area.
<i>Pipilo crissalis eremophilus</i> Inyo California towhee	FT/SE G4G5T2/S2	Resident of the Argus Mountains of Inyo County. Inhabits willow thickets growing at permanent springs or seepages in canyons; ranges into adjacent desert brushland to forage.	Not Expected	The Project area is outside the known range of the species. Additionally, suitable willow thickets do not occur within the Project area.
<i>Polioptila californica</i> coastal California gnatcatcher	FT/None G4G5T3Q/S2 SSC	Obligate, permanent resident of coastal sage scrub below 2500 ft in southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.	Not Expected	Suitable coastal sage scrub habitat does not occur within the Project area. There are no known occurrences within 5 miles of the Project area.
<i>Rallus obsoletus yumanensis</i> Yuma Ridgways rail	FE/ST G5T3/S1S2 FP	A marsh bird found in dense cattail or cattail-bulrush marshes along the lower Colorado River.	Not Expected	Suitable marsh habitat does not occur within the Project area. There are no known occurrences within 5 miles of the Project area.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Toxostoma bendirei</i> Bendire's thrasher	None/None G4/S3 SSC	Migratory; local spring/summer resident in flat areas of desert succulent shrub/Joshua tree habitats in Mojave Desert. Nests in cholla, yucca, palo verde, thorny shrub, or small tree, usually 0.5 to 20 feet above ground.	Moderate Potential	Suitable breeding habitat occurs within the Project area. Additionally, the Project area is within the species' distribution as modeled by the DRECP. There are recorded occurrences within 5 miles of the Project area.
<i>Toxostoma lecontei</i> Le Conte's thrasher	None/None G4/S3 SSC	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.	High Potential	Suitable desert scrub habitat occurs within the Project area.
<i>Vireo bellii pusillus</i> least Bell's vireo	FE/SE G5T2/S2	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, or mesquite.	Not Expected	Suitable riparian habitat does not occur within the Project area. There are no known occurrences within 5 miles of the Project area.
Mammals				
<i>Dipodomys merriami parvus</i> San Bernardino Merriam's kangaroo rat	FE/SCE G5T1/S1 SSC	Alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and flood plains. Needs early to intermediate seral stages.	Not Expected	Suitable alluvial scrub vegetation habitat does not occur within the Project area. There are no known occurrences within 5 miles of the Project area.
<i>Dipodomys stephensi</i> Stephen's kangaroo rat	FE/ST G2/S2	Primarily annual and perennial grasslands, but also occurs in coastal scrub and sagebrush with sparse canopy cover. Prefers buckwheat, chamise, brome grass and filaree. Will burrow into firm soil.	Not Expected	Suitable annual and perennial grasslands and coastal scrub habitats do not occur within the Project area. There are no known occurrences within 5 miles of the Project area.

Scientific Name Common Name	Status	Habitat Requirements	Potential to Occur in Project Area	Habitat Suitability/ Observations
<i>Eumops perotis californicus</i> western mastiff bat	None/None G4G5T4/ S3S4 SSC	Occurs in open, semi-arid to arid habitats, including coniferous and deciduous woodlands, coastal scrub, grasslands, and chaparral. Roosts in crevices in cliff faces and caves, and buildings. Roosts typically occur high above ground.	Low Potential (foraging)	Suitable roosting habitat does not occur within the Project area. The nearest recorded occurrence (Occ. No. 174 from 1954) is located approximately 0.6-mile west of the Project area. However, this occurrence is over 50 years old.
<i>Lasionycteris noctivagans</i> silver-haired bat	None/None G3G4/S3S4	Primarily a coastal and montane forest dweller, feeding over streams, ponds & open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks. Needs drinking water.	Not Expected	Suitable coastal and montane forest habitat does not occur within the Project area.
<i>Microtus californicus scirpensis</i> Amargosa vole	FE/SE G5T1/S1	Known only from bulrush marshes along the Amargosa River. Burrows in soft soils. Nests are constructed in the burrows. Creates runway system through grasses from burrow.	Not Expected	The Project area is outside the known range of the species. There are no known occurrences within 5 miles of the Project area.
<i>Xerospermophilus mohavensis</i> Mohave ground squirrel	None/ST G2G3/S2S3	Open desert scrub, alkali scrub & 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 for cover. Nests are in burrows.	Not Expected	The Project area is outside of the current known range for this species.

Regional Vicinity refers to within a 5- mile (CNDDDB) and 10-quad (CNPS) search radius of site.

Status (Federal/State)

FE = Federal Endangered

FT = Federal Threatened

FC = Federal Candidate

SE = State Endangered

ST = State Threatened

SCE = State Candidate Endangered

SR = State Rare

SSC = CDFW Species of Special Concern

FP = CDFW Fully Protected

WL = CDFW Watch List

CRPR (CNPS California Rare Plant Rank)

1B = Rare, Threatened, or Endangered in California and elsewhere

2A = Presumed extirpated in California, but common elsewhere

2B = Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension

.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)

.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)

.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)

Other Statuses

G1 or S1 Critically Imperiled Globally or Subnationally (state)

Sienna Solar and Storage Project

G2 or S2 Imperiled Globally or Subnationally (state)

G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)

G4/5 or S4/5 Apparently secure, common and abundant

GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery

Additional notations may be provided as follows

T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)

Q – Questionable taxonomy that may reduce conservation priority

? – Inexact numeric rank

Appendix E

Agency Communications



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July 16, 2021

Project Number: 21-11216

Scott Sobiech
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Carlsbad, CA 92008
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scott_sobiech@fws.gov

Subject: Notification of Biological Resources Assessment Surveys to Evaluate a Proposed Solar Project in Lucerne Valley, San Bernardino County, California

Dear Mr. Sobiech:

Rincon Consultants, Inc. (Rincon) is providing this letter as notification of biological studies that will be underway in the Lucerne Valley area of San Bernardino County, California. San Bernardino County guidelines require submission of scoping letters to regulatory agencies, including CDFW. Reconnaissance surveys will be used to evaluate a proposed photovoltaic project and associated generation intertie lines. The study area is situated in part within the eastern extent of Lucerne Dry Lake, and adjacent desert flats, desert scrub (e.g. creosote scrub, rubber rabbitbrush scrub) and grassland, with portions of the site present on fallow agricultural lands. The study area includes alternatives for generation intertie lines.

Rincon is currently completing a general biological resources assessment to initiate review of potential biological resources and evaluate project alternatives. This effort includes surveys to be conducted in late July 2021. During these surveys, Rincon biologists will complete general vegetation and habitat mapping, and will also assess habitat suitability for federally listed species and critical habitat, specifically desert tortoise, raptors and migratory birds. Habitat suitability assessments will be based on a combination of field conditions supplemented with a review of published literature and records recorded in the California Natural Database, recovery plans and five year reviews, and other data sources.

Results of the field surveys and habitat assessments will be presented in a General Biological Resources Assessment (BRA) Report for the County of San Bernardino, that will follow the County's guidelines for preparation of such reports. The report will discuss site conditions, habitat suitability, and wildlife movement, as well as identifying any further study or consultation(s) required to evaluate biological resources. Rincon currently anticipates that additional protocol level or focused surveys may be required for desert tortoise, as well as federally-listed plant species if identified during the habitat assessment, in some areas of the proposed project. The final BRA will provide both impact assessments and recommendations for additional protocol surveys as applicable.



If you have any questions or comments regarding this letter, please contact Dr. David Daitch at ddaitch@rinconconsultants.com or 303-818-6072.

Sincerely,

Rincon Consultants, Inc.

David Daitch, Ph.D.
Principal/Senior Ecologist



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July 16, 2021
Rincon Project No. 21-11216

Magdalena Rodriguez
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Subject: Notification of Biological Resources Assessment Surveys to Evaluate a Proposed Solar Project in Lucerne Valley, San Bernardino County, California

Dear Ms. Rodriguez:

Rincon Consultants, Inc. (Rincon) is providing this letter as notification of biological studies that will be underway in the Lucerne Valley area of San Bernardino County, California. San Bernardino County guidelines require submission of scoping letters to regulatory agencies, including CDFW. Reconnaissance surveys will be used to evaluate a proposed photovoltaic project and associated generation intertie lines. The study area is situated in part within the eastern extent of Lucerne Dry Lake, and adjacent desert flats, desert scrub (e.g. creosote scrub, rubber rabbitbrush scrub) and grassland, with portions of the site present on fallow agricultural lands. The study area includes alternatives for generation intertie lines.

Rincon is currently completing a general biological resources assessment to initiate review of potential biological resources and evaluate project alternatives. This effort includes surveys to be conducted in late July 2021. During these surveys, Rincon biologists will complete general vegetation and habitat mapping, and will also assess habitat suitability for listed species and other species of special concern, including desert tortoise, raptors and other migratory birds, and special status plants. Habitat suitability assessments will be based on a combination of field conditions supplemented with a review of published literature and records recorded in the California Natural Database, recovery plans and five year reviews, and other data sources.

Results of the field surveys and habitat assessments will be presented in a General Biological Resources Assessment (BRA) Report for the County of San Bernardino, that will follow the County's guidelines for preparation of such reports. The report will discuss site conditions, habitat suitability, and wildlife movement, as well as identifying any further study or consultation(s) required to evaluate biological resources. Rincon currently anticipates that additional protocol level or focused surveys are likely to be required for desert tortoise, as well as special status plants, in some areas of the proposed project. The



final BRA will provide both impact assessments and recommendations for additional protocol surveys as applicable.

If you have any questions or comments regarding this letter, please contact Dr. David Daitch at ddaitch@rinconconsultants.com or 303-818-6072.

Sincerely,
Rincon Consultants, Inc.

David Daitch, Ph.D.
Principal/Senior Ecologist