

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF CALIFORNIA**

In the Matter of the Application of SOUTHERN
CALIFORNIA EDISON COMPANY (U 338-E)
for a Permit to Construct Electrical Facilities:
Eldorado-Lugo-Mohave Series Capacitor Project.

Application No. 18-05-xxx

PROPONENT'S ENVIRONMENTAL ASSESSMENT (PEA)

ELDORADO-LUGO-MOHAVE SERIES CAPACITOR PROJECT

VOLUME 6 OF 8

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Appendices (Volume 6)

Appendix G: Biological Resources Technical Report

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Revised Biological Resources Technical Report
for the
Eldorado-Lugo-Mohave Series Capacitor Project

Prepared for:



Prepared by:



Updated April 2018

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EXECUTIVE SUMMARY

Southern California Edison Company (SCE) is proposing the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project), which is located in California and Nevada, within the Mojave Basin and Range. The Proposed Project would extend northeast from Lugo Substation (located in San Bernardino County, California) to Mohave Substation (located in Clark County, Nevada) and Eldorado Substation (located in the City of Boulder City, Nevada), and would extend northwest from Mohave Substation to Eldorado Substation. Portions of the Proposed Project would also cross the City of Hesperia and the unincorporated community of Lucerne Valley in California, as well as the unincorporated communities of Searchlight and Laughlin in Nevada. The associated components of the Proposed Project and their respective locations include the following:

- Construction of two new 500 kilovolt (kV) mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor—under the Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines, respectively
- Correction of 16 overhead clearance discrepancies¹ caused by the increase in megawatt capacity associated with the Proposed Project, which would require the relocation, replacement, or modification of existing transmission, subtransmission, and distribution facilities, including minor grading along the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Lines
- Installation of distribution facilities in the vicinity of the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor sites to provide station light and power
- Installation of distribution facilities to provide station light and power to three proposed fiber optic repeater sites
- Installation of telecommunications facilities to connect the Proposed Project to SCE’s existing telecommunications system, including the following:
 - Installation of overhead and underground fiber optic cable to connect the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor, including installation of three fiber optic repeater sites to the Lugo-Mohave 500 kV Transmission Line right-of-way
 - Removal of an existing overhead ground wire, modification of existing towers to support optical ground wire (OPGW), and installation of approximately 235 miles of overhead OPGW, which includes approximately 3 miles of underground fiber optic

¹ SCE has defined “discrepancies” as potential clearance problems between an energized conductor and its surroundings, such as the structure, another energized conductor on the same structure, a different line, or the ground. SCE has identified approximately 16 discrepancies along the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Lines, where minor grading or relocation, replacement, or modification of transmission, subtransmission, or distribution facilities is needed to address California Public Utilities Commission General Order 95 and National Electrical Safety Code overhead clearance requirements.

cable on SCE's existing Eldorado-Mohave and Lugo-Mohave 500 kV Transmission Lines

- Installation of fiber optic cable within the existing Lugo, Mohave, and Eldorado Substations
- Modifications within the existing Eldorado, Lugo, and Mohave Substations, including the following:
 - Upgrade of the existing series capacitor banks at Eldorado and Lugo Substations
 - Installation of new terminal equipment at Eldorado, Lugo, and Mohave Substations
 - Replacement of the existing series capacitor bank at Mohave Substation
 - Removal of two existing tubular steel poles (TSPs) and installation of two new TSPs at Lugo Substation

The Proposed Project crosses largely undeveloped federal lands, including lands under the jurisdiction of the Bureau of Land Management, the National Park Service, the Bureau of Reclamation, and the Department of Defense. The Proposed Project also crosses low-density residential land uses in the vicinity of Lugo Substation in San Bernardino County and Mohave Substation in Clark County, Nevada.

This Biological Resources Technical Report identifies existing or potential biological resources that were observed or that may be present within the Proposed Project's Biological Resources Survey Area (BRSA). The BRSA is composed of the footprint of the Proposed Project work areas, plus additional buffers around those work areas to accommodate potential design changes.

Based on the background research and field visits for the Proposed Project, Insignia Environmental determined that the following 19 special-status plant species are present within the BRSA:

- Abrams' spurge (*Euphorbia abramsiana*)
- Appressed muhly (*Muhlenbergia appressa*)
- Clokey's cryptantha (*Cryptantha clokeyi*)
- Coves' cassia (*Senna covesii*)
- Johnson's bee-hive cactus (*Sclerocactus johnsonii*)
- Mojave menodora (*Menodora spinescens* var. *mohavensis*)
- Mojave milkweed (*Asclepias nyctaginifolia*)
- Narrow-leaved yerba santa (*Eriodictyon angustifolium*)
- Matted cholla (*Grusonia parishii*)
- Parry's spurge (*Euphorbia parryi*)
- Pink funnel lily (*Androstephium breviflorum*)
- Playa milk-vetch (*Astragalus allochrous* var. *playanus*)
- Rosy two-toned beardtongue (*Penstemon bicolor* ssp. *roseus*)
- Rusby's desert-mallow (*Sphaeralcea rusbyi* var. *eremicola*)
- Salina Pass wild-rye (*Elymus salina*)
- Short-jointed beavertail (*Opuntia basilaris* var. *brachyclada*)

- Slender cottonheads (*Nemacaulis denudate* var. *gracilis*)
- Spiny cliff-brake (*Pellaea truncata*)
- Spiny-hair blazing star (*Mentzelia tricuspidis*)

Two special-status wildlife species were observed within or immediately adjacent to the BRSA:

- Desert bighorn sheep (*Ovis canadensis nelsoni*)
- Desert tortoise (*Gopherus agassizii*)

The following seven special-status wildlife species are likely to occur:

- American badger (*Taxidea taxus*)
- Banded Gila monster (*Heloderma suspectum cinctumi*)
- Bendire's thrasher (*Toxostoma bendirei*)
- Golden eagle (*Aquila chrysaetos*)
- Mojave fringe-toed lizard (*Uma scoparia*)
- Pallid bat (*Antrozous pallidus*)
- Western burrowing owl (*Athene cunicularia*)

The United States (U.S.) Fish and Wildlife Service-designated critical habitat for desert tortoise is also located within the BRSA.

Additionally, 11 sensitive vegetation communities occur within the BRSA.

- *Achnatherum speciosum* Herbaceous Alliance
- *Cylindropuntia bigelovii* Shrubland Alliance
- *Encelia (actoni, virginensis)* Shrubland Alliance
- *Ericameria linearifolia* Provisional Shrubland Alliance
- *Ericameria paniculata* Shrubland Alliance
- *Hyptis emoryi* Shrubland Alliance
- *Pleuraphis rigida* Herbaceous Alliance
- *Prunus fasciculata* Shrubland Alliance
- *Purshia tridentata* Shrubland Alliance
- *Suaeda moquinii* Shrubland Alliance
- *Yucca brevifolia* Woodland Alliance

Within the BRSA, 588 hydrologic features under the jurisdiction of the U.S. Army Corps of Engineers (USACE), State Water Resources Control Board (SWRCB), CDFW, and Nevada Department of Environmental Protection (NDEP) were identified. This included 582 ephemeral water features, five intermittent water features, and one wetland.

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- Attachment H: Preliminary Jurisdictional Delineation Report
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1 – INTRODUCTION

Southern California Edison Company (SCE) is proposing to construct two new mid-line series capacitors and make other improvements to increase capacity and power flow along three of SCE's existing 500 kilovolt (kV) transmission lines in San Bernardino County, California, for the Eldorado-Lugo-Mohave Series Capacitor Project (Proposed Project).²

This Biological Resources Technical Report was prepared to identify any existing or potential sensitive biological resources that may be present within or adjacent to the Proposed Project area, including vegetation communities, hydrologic features, and special-status plant and animal species and their associated habitat.

2 – PROJECT DESCRIPTION

2.0 LOCATION

The Proposed Project is located in California and Nevada, within the Mojave Basin and Range (Mojave). As shown in Figure 1: Proposed Project Overview Map in Attachment A: Figures, the Proposed Project would extend northeast from Lugo Substation (located in San Bernardino County, California) to Mohave Substation (located in Clark County, Nevada), and northwest from Mohave Substation to Eldorado Substation (located in the City of Boulder City, Nevada). Portions of the Proposed Project would also cross the City of Hesperia in California, as well as the unincorporated communities of Lucerne Valley in California and Searchlight and Laughlin in Nevada. Federal lands constitute a majority of the land area in the vicinity of the Proposed Project, including lands under the jurisdiction of the Bureau of Land Management (BLM), National Park Service (NPS), Bureau of Reclamation (BOR), and Department of Defense (DoD). The Proposed Project area is generally characterized by undeveloped and open lands, utilities and infrastructure, and some low-density residential land uses in San Bernardino and Clark Counties.

The unincorporated area of San Bernardino County in the vicinity of the Proposed Project is largely managed by the BLM, NPS, BOR, and DoD. The area surrounding the existing Lugo Substation to the north is mostly residential development. The remaining portions of San Bernardino County (i.e., in the vicinity of the Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines) are mostly undeveloped and open lands, with some low-density residential and agricultural uses.

The City of Hesperia is bordered to the west by unincorporated areas of San Bernardino County, to the north by the City of Victorville, to the east by the Town of Apple Valley, and to the south by unincorporated areas of San Bernardino County and the San Bernardino National Forest. The City of Hesperia contains a mix of residential, agricultural, industrial, and commercial uses. The

² The Proposed Project includes construction of two new 500 kV mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor.

area surrounding the Lugo-Mohave 500 kV Transmission Line is mostly undeveloped, with residential uses and public facilities to the north.

The eastern portion of the Proposed Project is located in undeveloped open lands in southern Clark County, Nevada. The Eldorado-Mohave and Lugo-Mohave 500 kV Transmission Lines traverse Clark County in mostly BLM-managed land and the unincorporated communities of Searchlight and Laughlin. Clark County is bordered to the north by Lincoln County, Nevada; to the south and east by Mohave County, Arizona; and to the west by San Bernardino County, California.

The City of Boulder City is surrounded by unincorporated Clark County and the City of Henderson to the northwest. The Eldorado-Mohave 500 kV Transmission Line and Eldorado Substation are located in the southern half of the City of Boulder City in the Eldorado Valley area. Land uses in the vicinity of the Proposed Project are energy resources and open space. The northern portion of the City of Boulder City is comprised of residential, commercial, and open space land uses.

2.1 DRIVING DIRECTIONS

2.1.0 Lugo Substation

Lugo Substation can be accessed by traveling north on Interstate (I-) 15 from the City of San Bernardino. Take Exit 140 for Rancho Road, turn right on Rancho Road, and continue for approximately 2.4 miles. Turn right on Escondido Road and follow this road for approximately 1 mile, then turn left onto Whitehaven Road. Lugo Substation is on the right.

2.1.1 Mohave Substation

Mohave Substation can be accessed by traveling south on United States (U.S.) Route 95. Turn left on Nevada State Route (SR-) 163 east toward the community of Laughlin and continue for approximately 15.7 miles. Turn right on Needles Highway and continue for approximately 2.4 miles. Turn right on Bruce Woodbury Drive, continue for approximately 1.9 miles, and turn right on Edison Way. Mohave Substation is on the right.

2.1.2 Eldorado Substation

Eldorado Substation can be accessed by traveling south on U.S. Route 95. Turn right on Eldorado Valley Drive, and continue for approximately 3.3 miles. Eldorado Substation is on the right.

2.1.3 Newberry Springs and Ludlow Series Capacitors

The proposed Newberry Springs and Ludlow Series Capacitor sites can be accessed by traveling east on I-40. Take Exit 33 for Hector Road and turn right on Hector Road. Turn left on National Trails Highway and follow this road for approximately 4.6 miles. Turn left on Pisgah Crater Road and continue beneath the I-40 overpass. Turn left on Pisgah Road and continue for approximately 1 mile. Turn right on Pisgah Crater Road, and the proposed Newberry Springs Series Capacitor would be ahead beyond Pisgah Substation. The Ludlow Series Capacitor site can be accessed by returning to Pisgah Road, heading southeast for approximately 1 mile, and following the right-of-way (ROW) northeast for approximately 0.7 mile.

2.2 PROJECT COMPONENTS

The following subsections provide descriptions of the components associated with the Proposed Project.

2.2.0 Transmission Line

The following subsections provide a description of the transmission line, subtransmission line, distribution line, and telecommunications line work associated with the Proposed Project.

500 kV Transmission Line Description

The Proposed Project would involve modifications and/or upgrades to the following existing 500 kV transmission lines:

- Eldorado-Lugo 500 kV Transmission Line
- Eldorado-Mohave 500 kV Transmission Line
- Lugo-Mohave 500 kV Transmission Line

To address 16 overhead clearance discrepancies³ at approximately 14 locations on the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Lines, the following is proposed:

- Raise Tower M14-T4 on the Eldorado-Lugo 500 kV Transmission Line a minimum of 18.5 feet to address two discrepancies on either side of the tower
- Reframe and lower the structure on the Cottonwood-Savage 115 kV Subtransmission Line by a minimum of 5 feet between Towers M20-T2 and M20-T3 and lower the 12 kV distribution line to address one discrepancy on the Eldorado-Lugo 500 kV Transmission Line and another discrepancy between Towers M20-T3 and M20-T4 on the Lugo-Mohave 500 kV Transmission Line
- Raise Tower M33-T1 by a minimum of 5 feet on the Eldorado-Lugo 500 kV Transmission Line
- Modify conductor between Towers M58-T1 and M58-T2 on the Eldorado-Lugo 500 kV Transmission Line
- Raise Tower M63-T3 by a minimum of 13.5 feet on the Eldorado-Lugo 500 kV Transmission Line

³ SCE has defined “discrepancies” as potential clearance problems between an energized conductor and its surroundings, such as the structure, another energized conductor on the same structure, a different line, or the ground. SCE has identified approximately 16 discrepancies along the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Lines, where minor grading or relocation, replacement, or modification of transmission, subtransmission, or distribution facilities is needed to address California Public Utilities Commission (CPUC) General Order (G.O.) 95 and National Electrical Safety Code overhead clearance requirements.

- Raise Tower M64-T2 by a minimum of 5 feet on the Eldorado-Lugo 500 kV Transmission Line
- Raise Towers M97-T1 and M97-T2 by a minimum of 18.5 feet on the Eldorado-Lugo 500 kV Transmission Line
- Remove a minimum of 3.5 feet of concrete below the conductor between Towers M4-T2 and M4-T3 on the Lugo-Mohave 500 kV Transmission Line
- Reframe and lower the distribution line by a minimum of 5 feet between Towers M8-T1 and M8-T2 on the Lugo-Mohave 500 kV Transmission Line
- Raise Tower M22-T4 by a minimum of 13.5 feet on the Lugo-Mohave 500 kV Transmission Line
- Grade/remove a minimum of 2 feet of berm between Towers M29-T3 and M30-T1 on the Lugo-Mohave 500 kV Transmission Line
- Raise Tower M68-T1 by a minimum of 8.5 feet on the Lugo-Mohave 500 kV Transmission Line (or modify conductor between Towers M68-T1 and M68-T2)
- Modify conductor between Towers M89-T1 and M89-T2 on the Lugo-Mohave 500 kV Transmission Line
- Raise Tower M4-T1 by a minimum of 18.5 feet on the Eldorado-Mohave 500 kV Transmission Line and modify the LST and foundation as required

In addition, the Proposed Project would include the installation of optical ground wire (OPGW) on approximately 235 miles of the Eldorado-Mohave and Lugo-Mohave 500 kV Transmission Lines, which would require modification to approximately 59 lattice steel towers (LSTs).

115 kV Subtransmission Line Description

The Proposed Project would modify the existing Cottonwood-Savage 115 kV Subtransmission Line.

Telecommunications Description

Telecommunications infrastructure would be added to connect the Proposed Project to SCE's telecommunications system and would provide Supervisory Control and Data Acquisition, protective relaying, data transmission, and telephone services for the Proposed Project and associated facilities. The Proposed Project would include the following telecommunications line elements:

- Install approximately 2 miles of overhead and approximately 500 feet of underground fiber optic cable to connect the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor (the telecommunication facilities would share the same poles with overhead distribution)

- Install approximately 2 miles of underground telecommunications facilities to connect the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor to SCE's existing system
- Install fiber optic cable within the existing Eldorado, Lugo, and Mohave Substations
- Install approximately 3 miles of underground fiber optic cable from Mohave Substation to existing Tower M173-T2 on the Lugo-Mohave 500 kV Transmission Line
- Install approximately 1,000 feet of fiber optic cable on the Eldorado-Mohave 500 kV Transmission Line
- Install underground telecommunications facilities at three fiber optic repeater sites in the Lugo-Mohave 500 kV Transmission Line ROW
- Install two fiber optic repeater facilities within chain-link-fenced areas measuring approximately 70 feet by 35 feet, and one fiber optic repeater facility within a fenced area measuring approximately 101 feet by 57 feet within the existing Lugo-Mohave 500 kV Transmission Line ROW, consisting of the following:
 - Pre-fabricated building
 - Communication manhole
 - Distribution manhole
 - Emergency generator
 - Aboveground propane fuel tank (surrounded by a block wall)

Distribution Description

The Proposed Project would include the following distribution line elements:

- Extend or reroute approximately 2 miles of overhead and approximately 700 feet of underground 12 kV distribution circuits to provide electrical power to the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor
- Extend approximately 0.5 mile of overhead and 320 feet of underground 12 kV distribution circuits to provide electrical power to the proposed fiber optic repeater sites
- Lower the cross arm by approximately 5 feet on an existing 12 kV distribution pole to address the clearance discrepancy between Towers M8-T1 and M8-T2 on the Lugo-Mohave 500 kV Transmission Line

2.2.1 Poles/Towers

The following subsections provide a description of the proposed work on poles and towers associated with the Proposed Project.

500 kV Transmission Poles/Towers

The Proposed Project includes raising approximately nine existing 500 kV towers along the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Lines to address potential overhead clearance discrepancies. Approximately 59 existing 500 kV towers along the Eldorado-Mohave and Lugo-Mohave 500 kV Transmission Lines would be modified to facilitate the installation of OPGW.

The LSTs would have a footprint ranging from 30 feet by 30 feet to 60 feet by 60 feet, and would extend 110 to 160 feet above ground. Each LST requiring foundation modifications would include three 5.5-inch-diameter micropiles on each of the four existing concrete piers that would extend underground approximately 20 feet (depending on a geotechnical analysis), with a 5-foot-diameter, 4-foot-deep concrete cap that would encapsulate the three new micropiles and the existing pier foundation.

Approximately two TSPs would be removed, and two TSPs would be installed at Lugo Substation. The TSPs would be 10 to 12 feet in diameter at the base and extend 150 to 190 feet above ground. The TSPs would be attached to concrete foundations that would be 10 to 12 feet in diameter and would extend 30 to 50 feet underground with up to 3 feet of concrete visible above ground. Each TSP would use 125 to 325 cubic yards of concrete. The TSPs would be all-steel structures with a dulled galvanized finish.

OPGW fiber optic cable would be installed on approximately 848 existing LSTs on the Eldorado-Mohave and Lugo-Mohave 500 kV Transmission Lines. The existing structures range in height from 80 to 250 feet.

Transmission and distribution facilities would be designed consistent with the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Avian Power Line Interaction Committee [APLIC] 2006), where feasible. Transmission facilities would also be evaluated for potential collision reduction devices in accordance with *Reducing Avian Collisions with Power Lines: The State of Art in 2012* (APLIC 2012).

Subtransmission Poles/Towers

The subtransmission segment of the Proposed Project would reframe two existing wood subtransmission poles. The wood poles would extend 70 to 80 feet above ground. The diameter of the wood poles are 2 to 3 feet at ground level and would taper to the top of the pole.

Distribution Poles

The distribution route would utilize a combination of existing wood poles and new wood poles. Approximately 100 wood poles would be installed for the Proposed Project. The wood poles would be 10 to 14 inches in diameter at the base and would extend 40 to 55 feet above ground. As part of the Proposed Project, down guys would also be required for certain structures, based on final engineering. The acreage of permanent ground disturbance would be provided during final engineering.

2.2.2 Conductor/Cable

The following subsections describe the aboveground and underground installation of the transmission, subtransmission, distribution, and telecommunications lines.

Aboveground Installation

Transmission

The Proposed Project involves existing 500 kV transmission lines located on LSTs. The existing 500 kV transmission lines support a non-specular two-bundled 2,156 kcmil⁴ 84/19 stranded “BLUEBIRD” aluminum conductor steel-reinforced (ACSR) conductor. Modification of the existing conductor would occur at one location on the Eldorado-Lugo 500 kV Transmission Line and two locations on the Lugo-Mohave 500 kV Transmission Line to correct potential clearance discrepancies. The existing conductor would be permanently transferred from the span with the clearance discrepancy to an adjacent span.

The proposed insulators would be polymer type, and the conductor type would be the same as existing conductors. The required distances from the ground to the lowest conductor would be approximately 33 feet (non-pedestrian) and 28 feet (pedestrian only/not accessible to regular vehicles). The required horizontal separation/distance between conductors would be approximately 30 feet. The Proposed Project includes replacement of the existing overhead ground wire with OPGW, which would be installed on existing structures on the Eldorado-Mohave and Lugo-Mohave 500 kV Transmission Lines to provide protection and support telecommunications. The 0.75-inch-diameter OPGW would be installed at the top of these structures, which range in height from 80 to 250 feet. The average span length between overhead structures is 350 to 1,850 feet. The OPGW would be installed above the conductor with a radial clearance of at least 12.5 feet, as required by CPUC G.O. 95. To support OPGW installation, tower modifications would be required.

Subtransmission

To address clearance discrepancies, the Proposed Project would include lowering one existing 115 kV subtransmission line by reconfiguring the cross arms on two existing wood poles to reduce the height of the conductor. This subtransmission line supports a non-specular 336.4 kcmil ACSR conductor. The lowest conductor would be 48 to 54 feet above ground. The Proposed Project would utilize the existing conductors, and would be designed to meet the CPUC G.O. 95 minimum ground-to-conductor clearance requirements.

Telecommunications

Fiber optic cables would be installed overhead and underground. The overhead cable would be 20 to 25 feet above ground and would be 0.579-inch-diameter all-dielectric self-supporting fiber optic cable. The average span length between overhead structures would be 150 to 200 feet.

⁴ kcmil (1,000 circular mils [cmils]) is a quantity of measure for the size of a conductor; kcmil wire size is the equivalent cross-sectional area in thousands of cmils. A cmil is the area of a circle with a diameter of 0.001 inch.

Distribution

The distribution lines would be installed on existing and new wood poles. Conductor would be approximately 1,000 feet of underground 1/0 cross-linked polyethylene insulation cable and 1.9 miles of 1/0 ACSR. The lowest cable would be 34 to 47 feet above the ground. The average span length between overhead structures would be 150 to 200 feet.

Belowground Installation

Transmission

The Proposed Project does not propose belowground transmission facilities.

Subtransmission

The Proposed Project does not propose belowground subtransmission facilities.

Telecommunications

The Proposed Project includes the installation of approximately 4.3 miles of underground telecommunications cable in new underground duct banks. The newly installed duct banks would measure approximately 2 feet wide and 3 feet deep; and would typically consist of two 5-inch conduits, conduit spacers, and concrete, with a minimum of 30 inches of cover. A 1.25-inch inner-duct would be placed inside the underground structures, and would be followed by the actual placement of the fiber within the inner-duct. In addition, approximately 0.7 mile of existing underground conduit would be utilized. The Proposed Project would utilize new and existing vaults measuring approximately 5 feet wide by 5 feet long by 6 feet deep.

Distribution

The Proposed Project would include the installation of approximately 0.2 mile of underground distribution cables in new duct banks. At a minimum, the duct banks would measure approximately 2 feet wide by 4 feet deep, and would each consist of approximately two 3-inch conduits, conduit spacers, and concrete.

2.2.3 Mid-Line Series Capacitors

The Proposed Project includes the construction of two new 500 kV mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor—within the Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Line ROWs, respectively. Each mid-line series capacitor would be approximately 225 feet wide by 324 feet long, and would occupy approximately 1.8 acres within an approximately 3.3-acre graded site (Newberry Springs Series Capacitor) or 3.2-acre graded site (Ludlow Series Capacitor).

Lighting at the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor would consist of light-emitting diode lights located in areas of the staging yard where Operation and Maintenance (O&M) activities may take place during evening hours for emergency/scheduled work. Maintenance lights would be controlled by a manual switch and would normally be in the “off” position. The maintenance lights would be directed downward to reduce glare outside the facility.

The proposed mid-line series capacitors would be enclosed on all sides by a chain-link fence. Barbed wire would be affixed to the top of the fence, and desert tortoise (*Gopherus agassizii*) fencing would be affixed at the bottom. Chain-link gates would be provided for vehicle and pedestrian access.

2.2.4 Modifications to Existing Substations

The following interior modifications are proposed at Eldorado, Lugo, and Mohave Substations:

- Upgrades and reconfiguration of 500 kV transmission line positions, switchrack positions, and circuit breakers
- Installation of new series capacitor banks or upgrade of existing capacitor banks
- Installation of new conductor support structures, line risers, foundations, steel structures, buses, grounding, conduits for new equipment, task lighting, and mid-line series capacitor fencing
- Reconductoring line positions
- Installation of new direct current systems, remote terminal units, telecommunications channel equipment, and auxiliary switches
- Removal and salvage (or relocation) of the existing motor-operated disconnect switches and 500 kV post insulators

2.3 RIGHT-OF-WAY REQUIREMENTS

The Proposed Project would be built within existing SCE fee-owned ROWs, easements, or public ROWs where SCE has existing franchise agreements. However, upon final engineering and Proposed Project approval, acquisition of new land rights may be required for the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor and/or fiber optic repeater sites, where necessary. Easement widths are based on facility types, final design, and the type of right to be acquired. Upgrading easements may include adding land rights, adding widths to existing easements, and improving or clarifying access or maintenance rights. Certain land rights may need to be acquired and/or amended as follows:

- **Substations and Mid-Line Series Capacitors:** Substation access would continue to be provided directly from Escondido Avenue (Lugo Substation), Edison Way (Mohave Substation), and Eldorado Valley Drive (Eldorado Substation). The proposed design requires a minimum of 1.9 acres of additional property to be acquired from the BLM to construct the proposed Newberry Springs Series Capacitor, and a minimum of 1.7 acres of additional private property to be acquired to construct the proposed Ludlow Series Capacitor.
- **Access:** Access to the Proposed Project components would be provided from existing public roads and/or existing access roads. New access roads would be constructed for the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor. Upon final

engineering and project approval, new or amended access road rights for the proposed mid-line series capacitors may be required.

- **Transmission:** SCE would install the proposed transmission facilities within existing SCE fee-owned ROWs, easements, or public ROWs where SCE has existing franchise agreements. However, upon final engineering and Proposed Project approval, acquisition of new land rights may be required for overhead facilities.
- **Distribution:** SCE would install the proposed distribution facilities within existing SCE fee-owned ROWs, easements, or public ROWs where SCE has existing franchise agreements. However, new BLM ROW would be needed between the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor and from the existing distribution line to the proposed Kelbaker and Lanfair Fiber Optic Repeaters. Distribution to the fiber optic repeaters would be added to the BLM and NPS Lugo-Mohave ROW grants. Upon final engineering and Proposed Project approval, acquisition of new land rights may be required for both overhead and/or underground facilities.
- **Telecommunications:** Along the proposed routes, telecommunications lines would be co-located on existing structures located overhead and underground within existing SCE ROWs or public ROWs where SCE has existing franchise agreements. However, new BLM ROW would be needed between the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor. The proposed Kelbaker and Lanfair Fiber Optic Repeaters and underground fiber optic cable would be included in the NPS Lugo-Mohave ROW Grant. Upon final engineering, additional or amended land rights may be required.
- **Construction Support:** Based on final engineering and construction requirements, temporary land rights (e.g., temporary construction easements, permits, leases, and licenses) may be required for access roads, laydown areas, pulling sites, helicopter staging yards, and staging and work areas for any approved Proposed Project component.

2.4 CONSTRUCTION

The following subsections describe the construction activities associated with the Proposed Project.

2.4.0 Staging Yards

Construction of the Proposed Project would require the establishment of temporary staging yards. Staging yards would be used as a reporting location for workers, as well as vehicle and equipment parking, and material storage. The yards may also have construction trailers for supervisory and clerical personnel. Staging yards may be lit for staging and security. Normal maintenance and refueling of construction equipment would also be conducted at these yards. All refueling of construction equipment would also be conducted at these yards. All refueling and storage of fuels would be in accordance with the Storm Water Pollution Prevention Plans (SWPPPs).

SCE anticipates using one or more of the possible locations listed in Table 1: Potential Staging Yard Locations as the staging yard(s) for the Proposed Project. Typically, each staging yard

would be 1 to 21 acres in size, depending on land availability and intended use. Preparation of the staging yard would include adding temporary perimeter fencing and, depending on existing ground conditions at the site, grubbing and/or grading may be required to provide a plane and dense surface for the application of gravel or crushed rock. Any land that may be disturbed at the staging yards would be returned to pre-construction conditions or left in its modified condition, if requested by the landowner following the completion of Proposed Project construction.

Work Areas

Construction work areas for transmission, subtransmission, distribution, and telecommunications facilities within SCE ROWs or franchise areas serve as temporary working areas for crews. Proposed Project-related equipment and/or materials are also placed in these locations. Table 2: Approximate Laydown/Work Area Dimensions identifies the approximate land disturbance for these Proposed Project construction areas.

Access Roads and/or Spur Roads

Where required, the network of existing access roads may be improved, and new roads would be constructed to current SCE road standards to support the construction and O&M of the Proposed Project.

For construction of the Proposed Project, SCE would utilize a combination of through roads and spur roads accessed from a network of existing, paved and unpaved public and private roads that are located on public, private, and government lands. Access to the transmission line ROW for construction activities and future O&M activities associated with the Proposed Project would be accomplished by utilizing this network of roads. The following paragraphs describe activities typically associated with the construction of these roads.

During construction of the Proposed Project, crews would utilize existing public roads and existing transmission access roads to the maximum extent feasible. New temporary access roads would be constructed in accordance with current SCE practices for safety during construction and O&M. Rehabilitation, road widening, and/or upgrades to existing access roads may also be required to facilitate construction access and to support O&M activities.

Typical construction activities associated with rehabilitation of existing, unpaved access roads include vegetation clearing; blade-grading; grubbing; mowing; and recompacting to remove potholes, ruts, and other surface irregularities to provide a riding surface that can support heavy construction and maintenance equipment. Existing, unpaved roads may also require additional upgrades, such as protection (e.g., soil cover, steel plates, etc.) for existing underground utilities. Typical construction activities associated with new access roads generally include similar activities as described for the rehabilitation of existing, unpaved roads, but may also include the following additional construction requirements that depend on the existing land terrain:

- **Existing relatively flat terrain with grades up to four percent:** Construction activities are generally similar to rehabilitation activities on existing, unpaved roads and may also require activities such as clearing and grubbing, as well as constructing drainage improvements (e.g., wet crossings, waterbars, and culverts). Detailed information on locations requiring drainage improvements would be provided during final engineering.

Table 1: Potential Staging Yard Locations

Yard Name	Location	Condition	Approximate Area (Acres)	Proposed Project Component
East of Lugo	Hesperia	Undisturbed	7.1	Transmission
Arrowhead Lake Road	Hesperia	Previously Disturbed	5.3	Transmission
Bear Valley	Lucerne Valley	Partially Disturbed	4.2	Transmission
Barstow Road	Lucerne Valley	Undisturbed	10.1	Transmission
Coolwater	Daggett	Previously Disturbed	21.0	Transmission
Ludlow	Ludlow	Previously Disturbed	1.7	Transmission
Goffs Yard	San Bernardino County	Previously Disturbed	5.9	Transmission
Goffs Yard – Alt	San Bernardino County	Previously Disturbed	2.5	Transmission
Mohave Substation	Mohave Substation	Previously Disturbed	7.5	Transmission/ OPGW, Substation, Capacitor
Eldorado Substation	Eldorado Substation	Previously Disturbed	8.5	Transmission/ Substation
Eldorado Substation 2	Eldorado Substation	Previously Disturbed	5.5	Substation/ Capacitor
South Eldorado Substation	Eldorado Substation	Previously Disturbed	4.2	Substation/Capacitor
Mohave Substation 2	Mohave Substation	Previously Disturbed	1.0	Substation
Lugo Substation II	Lugo Substation	Previously Disturbed	1.1	Capacitor
Lugo Substation III	Lugo Substation	Previously Disturbed	1.0	Substation
Newberry Springs Series Capacitor	Newberry Springs	Partially Disturbed	6.2	Capacitor
Ludlow Series Capacitor	Ludlow	Partially Disturbed	6.4	Capacitor

Table 2: Approximate Laydown/Work Area Dimensions

Laydown/Work Area Feature	Preferred Size (Length x Width) (Feet)
Guard Structures	50 x 150
LSTs (New)	220 x 220
LSTs (Modify)	150 x 150
Wood Poles (Subtransmission)	150 x 75
Wood Poles (Distribution)	40 x 60
OPGW Pulling, Tensioning, and Splicing Area	100 x 150
Underground Duct Bank	Proposed Length x 30
Underground Vaults	35 x 35
Mid-Line Series Capacitor Site	400 x 450
Fiber Optic Repeater Site	100 x 60

Note: The dimensions listed in this table are preferred for construction efficiency; actual dimensions may vary depending on Proposed Project constraints. This table does not include work within the existing substation properties.

- Existing rolling terrain with grades of five to 12 percent:** Construction activities generally include typical to flat terrain activities and may also require cut and fill in excess of 2 feet in depth, benched grading, drainage improvements (e.g., v-ditches, downdrains, and energy dissipaters), and slope stability improvements (e.g., geogrid reinforcement). The extent of slope stability improvements would be determined during final engineering, as would detailed information on locations requiring cut and fill, benched grading, and/or drainage improvements.
- Existing mountainous terrain with grades over 12 percent:** Construction activities would include rolling terrain construction activities and would also likely require significant cut and fill depths, benched grading, drainage improvements, and slope stability improvements. Detailed information on locations requiring cut and fill, benched grading, and/or drainage improvements would be provided during final engineering.

Typical construction activities associated with temporary access could include drive and crush, vegetation clearing, blade-grading, grubbing, mowing, and recompacting. In addition, other slope stability systems considered include mechanically stabilized systems, along with drainage improvements (e.g., v-ditches, downdrains, and energy dissipaters). The extent of slope stability improvements would be determined during final engineering.

Generally, access roads would have a minimum drivable width of 14 feet with 2 feet of shoulder on each side, as determined by the existing land terrain to accommodate required drainage features. Typically, the drivable road width would be widened and would generally range up to an additional 8 feet along curved sections of the access road, creating up to 22 feet of drivable surface for the access road. Access road gradients would be leveled so that sustained grades

generally do not exceed 14 percent. Curves would typically have a minimum radius of curvature of 50 feet measured from the center line of the drivable road width. Specific site locations may require a wider drivable area to accommodate multi-point turns where 50-foot minimum radii cannot be achieved.

Access roads would typically have turnaround areas around the structure location. In some cases where a turnaround is not practical, an alternative configuration would be constructed to provide safe ingress/egress of vehicles to access the structure location. It is common to use access road turnaround areas for the dual purpose of structure access and as a construction pad for construction activities. If a construction pad is built, it would remain a permanent feature for O&M.

The Proposed Project access roads would generally follow the existing transmission lines. New access roads would be constructed to support construction and O&M of the new mid-line series capacitors and supporting transmission structures.

Helicopter Access

Helicopters would be used to support construction activities. Helicopter use supporting construction may include, but is not limited to, areas where access is limited (e.g., no suitable access road, limited construction area to facilitate on-site structure assembly, and/or there are environmental constraints to access the Proposed Project area with standard construction vehicles and equipment) or where system outage constraints are a factor.

SCE currently anticipates that helicopters would be utilized in support of the construction of the Proposed Project. Helicopters may be used in other areas to facilitate construction of the Proposed Project, as the exact method of construction employed and the sequence in which construction tasks occur would be dependent on final engineering, contract award, conditions of permits, and contractor preference.

Proposed Project-related helicopter activities may include transportation of construction workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, marker ball installation (if applicable), and OPGW stringing operations. SCE would consider Institute of Electrical and Electronic Engineers Standards 951-1966, *Guide to the Assembly and Erection of Metal Transmission Structures*, and 524-2003, *Guide to the Installation of Overhead Transmission Line Conductors* in the construction of the Proposed Project.

Helicopter operations and support areas typically include helicopter staging and material yards, storage and maintenance sites, and ground locations (i.e., landing zones that are approximately 0.3 acre) in close proximity to OPGW pulling, tensioning, and splice sites and/or within previously disturbed areas near construction sites. In addition, helicopters must be able to land within SCE ROWs, which could include landing on access or spur roads. At night or during days off, helicopters and their associated support vehicles and equipment may be based at a local airport(s) for safety and security concerns. Helicopters typically used for stringing activities would include light- and medium-duty helicopters, and would most likely be based out of Ludlow, Laughlin/Bullhead International, Kidwell, and Searchlight Airports, where refueling would occur.

Vegetation Clearance

The proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor sites would require vegetation clearing (i.e., shrub and brush removal) within their boundaries to prepare each of the approximately 4.1- and 4.3-acre sites for installation of the mid-line series capacitor equipment. The three proposed fiber optic repeater sites would also require vegetation clearing similar to the mid-line series capacitors. Minor site preparation and grading may be required to allow construction of the fiber optic repeater sites.

Vegetation clearing (e.g., shrub and brush removal) would also be required in the transmission line ROWs to accommodate construction work areas and to reduce the potential for fire during construction activities.

Erosion and Sediment Control and Pollution Prevention during Construction

Storm Water Pollution Prevention Plans

Construction of the Proposed Project would disturb a surface area of 1 acre or more. Therefore, SCE would be required to obtain coverage under the Statewide Construction General Permit for Storm Water Discharges (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ) from the SWRCB and the Nevada Department of Environmental Protection (NDEP) 2014 Construction General Permit (NVR100000).

Commonly used best management practices are quality control measures for storm water runoff (i.e., boundary protection), dewatering procedures, and concrete waste management. The SWPPPs would be based on the final engineering design and would include all Proposed Project components.

Dust Control

During construction, migration of fugitive dust from the construction sites would be limited by control measures set forth by the Mojave Desert Air Quality Management District and Clark County Department of Air Quality. These measures may include the use of water trucks and other dust control measures.

Cleanup and Post-Construction Restoration

SCE would clean up all areas that would be temporarily disturbed by construction of the Proposed Project (which may include the material staging yard, construction setup areas, stringing sites, and splicing sites) to as close to pre-construction conditions as feasible, or to the conditions agreed upon between the landowner and SCE following the completion of Proposed Project construction.

If restoration and/or revegetation occurs within sensitive habitats, a habitat restoration and/or revegetation plan(s) would be developed by SCE with the appropriate resource agencies and implemented after construction is complete.

2.4.0 Mid-Line Series Capacitor Construction

The following subsections describe the construction activities associated with installing the components of the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor for the Proposed Project.

Site Preparation and Grading

The sites would be prepared by clearing existing vegetation within the boundaries of the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor sites. Once vegetation clearance is completed, the sites would be graded in accordance with approved grading plans, and a temporary chain-link fence would be installed around the perimeter.

Ground Surface Improvements

Ground surface improvements include access roads, internal roads, gravel surfacing, and parking surfacing. Table 3: Mid-Line Series Capacitor Ground Surface Improvement Materials provides a summary of the ground surface improvements at the mid-line series capacitor sites.

Table 3: Mid-Line Series Capacitor Ground Surface Improvement Materials

Surface Type	Material	Approximate Area (Acres)	Approximate Volume (Cubic Yards)
Access Road Surface Area	Dirt	0.3	0.0
Mid-Line Series Capacitor Paved Areas	Asphalt	0.8	259.0
Internal Road Surface Area	Aggregate Base	0.8	664.0
Gravel Surfacing	Crushed Gravel	3.2	1,698.0

Below-Grade Construction

After the site is graded, below-grade facilities would be installed. Below-grade facilities include a ground grid, cable trenches, equipment foundations, perimeter foundations, conduits, duct banks, and vaults. Existing concrete supply facilities would be used where feasible, and a temporary concrete batch plant may be set up in an established material staging yard.

Above-Grade Construction

Above-grade installation of capacitor facilities (e.g., buses, capacitor banks, disconnect switches, steel support structures, perimeter fence, and the Mechanical and Electric Equipment Room) would commence after the below-grade structures are in place.

2.4.1 Fiber Optic Repeater Construction

The following subsections describe the construction activities associated with installing the components of the proposed Barstow, Kelbaker, and Lanfair Fiber Optic Repeaters for the Proposed Project.

Site Preparation and Grading

The sites would be prepared by clearing existing vegetation within the boundaries of the proposed Barstow, Kelbaker, and Lanfair Fiber Optic Repeater sites. Once vegetation clearance is completed, a temporary chain-link fence would be installed around the perimeter. Grading would be required inside the fence and for the access roads at each location. The maximum amount of grading at each repeater site is as follows:

- Barstow Fiber Optic Repeater site: 16 cubic yards
- Kelbaker Fiber Optic Repeater site: 30 cubic yards
- Lanfair Fiber Optic Repeater site: 24 cubic yards

Ground Surface Improvements

Table 4: Fiber Optic Repeater Ground Surface Improvement Materials provides a summary of the ground surface improvements at the fiber optic repeater sites.

Table 4: Fiber Optic Repeater Ground Surface Improvement Materials

Surface Type	Material	Approximate Area (Acres)	Approximate Volume (Cubic Yards)
Access Road Surface Area	Dirt	0.1	85.0
Gravel Surfacing	Crushed Gravel	0.1	66.0

Below-Grade Construction

After the site is prepared, below-grade facilities would be installed. Below-grade facilities include telecommunications and distribution conduits, duct banks, and vaults.

Above-Grade Construction

Above-grade installation for the fiber optic repeater facilities (e.g., communication building, microwave tower pad, emergency generator, and an above-grade 499-gallon propane fuel tank) would commence after the below-grade structures are in place. A typical communication building would either be a block wall-type building to be constructed on site or a prefabricated building delivered to the site. Prefabricated buildings are set on a concrete foundation using a crane. The typical building size is approximately 36 feet by 12 feet; the building consists of a generator room and an equipment room. The generator room houses an emergency backup generator and manual/automatic alternating current (AC) switch equipment.

2.4.2 Land Disturbance Summary

Land disturbance would include all areas affected by construction of the Proposed Project. It is estimated that the total permanent land disturbance for the Proposed Project would be approximately 8.8 acres. It is estimated that the Proposed Project would temporarily disturb approximately 385.2 acres.

2.4.3 Equipment Description

Table 5: Construction Equipment Description lists the equipment SCE expects to use during construction and a brief description of that equipment's use.

2.4.4 Construction Schedule

SCE anticipates that construction of the Proposed Project would take approximately 15 months, as shown in Table 6: Proposed Construction Schedule.⁵ Construction would commence following the CPUC's approval, final engineering, procurement activities, land rights acquisition, and receipt of all applicable permits.

3 – REGULATORY SETTING

The following subsections provide a description of the regulatory setting protecting special-status plant and wildlife species, as well as aquatic resources.

3.0 FEDERAL

In addition to the federal regulations described in the following subsections, federal authorizations would also be required because a majority of the land within the Proposed Project area is under the jurisdiction of the BLM, NPS, BOR, and DoD.

3.0.0 Federal Endangered Species Act

The federal Endangered Species Act (FESA) protects plants and wildlife that are listed as endangered or threatened by the USFWS and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries). The FESA prohibits take of endangered wildlife, where "take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (16 U.S. Code [U.S.C.] §§ 1532[19], 1538). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on non-federal land in knowing violation of State law (16 U.S.C. § 1538[c]).

Under Section 7 of the FESA, federal agencies are required to consult with the USFWS and/or NOAA Fisheries if their actions, including permit approvals or funding, could adversely affect a listed species (including plants) or its critical habitat. Through consultation and the issuance of a Biological Opinion, the USFWS and/or NOAA Fisheries may issue an incidental take statement, allowing take of the species that is incidental to another authorized activity, provided that the action would not jeopardize the continued existence of the species. Through Section 10 of the FESA, private parties may develop a Habitat Conservation Plan (HCP) to address incidental take of federally listed species.

⁵ The proposed construction schedule does not account for unforeseen Proposed Project delays, such as those due to inclement weather and/or stoppage necessary to protect biological resources (e.g., nesting birds).

Table 5: Construction Equipment Description

Equipment Type	Use Description
1-Ton Crew Cab	Transport and support construction personnel
¾-Ton Truck/Foreman's Truck	Transport and support construction personnel
Backhoe	Excavate and load materials
Bobcat	Excavate, move, and load materials
Bucket Truck	Lift and transport workers; frame and string overhead cable lines
Bullwheel Puller	Install underground components
Compactor	Compact soil
Compressor Trailer	Provide compressed air for pneumatic tools
Concrete Mixer Truck	Deliver and mix concrete
Crane/Boom Truck	Lift and place materials
Digger Derrick	Dig holes, and hoist and set utility poles
Ditch Witch	Dig trenches
Dozer	Grade pads and access roads
Drill Rig	Drill subsurface holes
Dump Truck	Transport import/export material
Excavator	Excavate materials
Fiber Tensioner	Remove and install OPGW
Flatbed Truck	Deliver poles and hardware
Forklift	Lift and move materials
Foundation Auger	Drill foundation holes
Generator	Provide power to the work area
Grader	Grade substation site, pads, and access roads; ROW clearing; and restoration
Helicopter	Install conductor/OPGW
Helicopter Support Truck	Install conductor/OPGW
Hydraulic Crane	Lift and place materials
Hydraulic Rewind Puller	Pull conductor/OPGW
LoDrill	Drill foundation holes
Low Bed Hauler	Transport equipment
Low Side End Dump	Transport import/export material
Manlift	Set steel and install equipment

Equipment Type	Use Description
Motor Grader	Grade terrain
Paving Machine	Lay asphalt
Reach Lift	Install equipment
Rock Crusher	Process and crush oversized rocks
Scissor Lift	Provide access to elevated work areas
Scraper	Grade pads and access roads
Semi-Tractor Truck	Transport materials
Skid Steer Loader	Move materials
Skip Loader	Move or load materials
Static Truck/Tensioner	Provide tension during conductor/OPGW during installation
Storage Trailer	Storage
Splicing Lab/Truck	Splice conductor/OPGW
Test Truck (less than 1-ton truck)	Transport workers and their test equipment to site
Tool Truck	Transport tools
Trencher	Dig trenches
Utility Cart	Support construction activities
Van (Cargo)	Transport telecommunications personnel and equipment
V-Groove Puller	Remove and install OPGW
Water Buffalo	Transport water
Water Pull	Suppress dust and condition soil for compaction
Water Truck	Suppress dust and condition soil for compaction
Wire Truck/Trailer	Transport and hold conductor/OPGW during stringing operation

Table 6: Proposed Construction Schedule

Proposed Project Activity	Approximate Duration (Months)	Approximate Start Date
CPUC Permit to Construct	Not applicable (N/A)	June 2019
BLM Notice to Proceed	N/A	February 2019
Final Engineering	N/A	September 2017
ROW/Property Acquisition	N/A	February 2019
Acquisition of Required Permits	N/A	April 2019
Mid-Line Series Capacitor Construction	13	Second quarter 2019
Substation Modifications	10	Second quarter 2019 (Nevada) August 2019 (California)
OPGW Construction	9	Second quarter 2019 (Nevada) November 2019 (California)
500 kV Transmission (Discrepancy) Construction	6	Second quarter 2019 (Nevada) October 2019 (California)
Telecommunications Construction	11	July 2019
Distribution Construction	5	October 2019
Proposed Project Operational	N/A	June 2020

3.0.1 Federal Land Policy and Management Act

The Federal Land Policy and Management Act (FLPMA) provides a regulatory framework for the management and use of BLM resources. An important aspect of the FLPMA is that it supports multiple uses on public lands. In addition, under the FLPMA, the BLM regulates rights-of-way (ROWs) for electrical power generation, transmission and distribution systems, systems for the transmission and reception of electronic signals and other means of communication, pipelines (other than oil and gas), railroads, highways, and other facilities or systems developed in the interest of the public.

The FLPMA also gives authority to the BLM to manage sensitive plants on BLM land. BLM Handbook 6840-1 describes management practices for sensitive plants. This includes providing site-specific habitat and population management objectives for each listed plant species and ensuring that any project the BLM funds, sponsors, or approves would avoid adverse impacts to sensitive plant species, to the maximum extent possible. If adverse impacts are unavoidable, the BLM would develop measures to mitigate adverse impacts to sensitive plant species.

3.0.2 California Desert Conservation Area Plan

The California Desert Conservation Area (CDCA) Plan is a comprehensive, long-range plan for the management, use, development, and protection of lands within the CDCA, and it is required as part of the FLPMA and implemented by the BLM. The CDCA Plan defines rare, threatened,

and endangered plants as those listed as endangered by the FESA; endangered or rare by the California Endangered Species Act (CESA); or candidates for endangered or threatened listing by the USFWS. Rare, threatened, and endangered species are managed in accordance with applicable laws and regulations. These plants are also protected through consideration in all BLM site-specific environmental impact analysis to ensure that any action authorized by the BLM does not jeopardize listed plants or habitats supporting listed plants. The CDCA Plan stabilizes and improves populations of listed plants through management and recovery plans developed and implemented cooperatively with the USFWS and CDFW. The CDCA Plan also prohibits the harvesting of plants that are listed as rare, threatened, or endangered. As part of Phase I of the Desert Renewable Energy Conservation Plan (DRECP), the BLM adopted an amendment to the CDCA Plan in September 2016—the Land Use Plan Amendment (LUPA) to the CDCA Plan and Bishop and Bakersfield Resource Management Plan, which is discussed further below.

3.0.3 Desert Renewable Energy Conservation Plan

The DRECP is a collaborative effort between the California Energy Commission, CDFW, BLM, and USFWS to advance federal and state natural resource conservation goals and other federal land management goals; meet the requirements of the FESA, CESA, Natural Community Conservation Planning Act, and FLPMA; and facilitate the timely and streamlined permitting of renewable energy projects in the Mojave and Colorado/Sonoran desert regions of Southern California. The DRECP covers approximately 22.5 million acres in the desert regions of Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego Counties. The DRECP is being prepared in two phases. Phase I consisted of the BLM LUPA to the CDCA Plan and Bishop and Bakersfield Resource Management Plan. Phase II will consist of adopting a General Conservation Plan for approximately 5.5 million acres of non-federal land and a Conceptual Plan-Wide Natural Community Conservation Plan (NCCP) that encompasses the entire DRECP plan area.

Bureau of Land Management Land Use Plan Amendment

The BLM LUPA establishes management direction for the permitting of renewable energy and transmission development on approximately 10 million acres of BLM-managed lands in the DRECP area. The BLM LUPA amends the CDCA Plan and the Bakersfield and Bishop Resource Management Plans. The purpose of the LUPA is to conserve biological, environmental, cultural, recreation, scenic, and visual resources; respond to federal renewable energy goals and policies, including state-level renewable energy targets; and comply with the FLPMA. The BLM LUPA prescribes conservation management actions (CMAs).

3.0.4 Bald and Golden Eagle Protection Act

The bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are federally protected under the Bald and Golden Eagle Protection Act (BGEPA), which was passed in 1940 to protect the bald eagle and amended in 1962 to include the golden eagle (16 U.S.C. § 668a-d). The BGEPA (16 U.S.C. § 668-668d) prohibits the take, possession, sale, purchase, barter, offering to sell or purchase, export or import, or transport of bald eagles and golden eagles and their parts, eggs, or nests without a permit issued by the USFWS. The definition of “take” includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The BGEPA prohibits any form of possession or take of either eagle species, and imposes

criminal and civil sanctions as well as an enhanced penalty provision for subsequent offenses. Further, the BGEPA provides for the forfeiture of anything used to acquire eagles in violation of the statute. Regarding its prohibitions on possession, the statute exempts the use of eagles or eagle parts for exhibition, scientific, and Native American religious uses.

3.0.5 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) recognizes international treaties between the U.S. and other countries that have been accorded to protect migratory birds and any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities:

- Falconry
- Raptor propagation
- Scientific collecting
- Special purposes (e.g., rehabilitation, education, migratory game bird propagation, and salvage)
- Take of depredating birds, taxidermy, and waterfowl sale and disposal

The regulations governing migratory bird permits can be found in Title 50 of the Code of Federal Regulations (CFR) in Part 13 (General Permit Procedures) and Part 21 (Migratory Bird Permits).

3.0.6 Desert Tortoise Recovery Plan and Critical Habitat Designation

The Desert Tortoise Recovery Plan (DTRP) is administered by the USFWS and establishes a strategy for the recovery and eventual delisting of the desert tortoise within the Mojave. This plan establishes five recovery units that cover the entire range of the desert tortoise. It also delineates 12 Critical Habitat Units established by the USFWS. The Proposed Project crosses the Colorado Desert, Western Mojave, and Eastern Mojave Recovery Units and falls within critical habitat.

The DTRP establishes a policy of “no net loss” of habitat within desert tortoise conservation areas. This can be accomplished through the avoidance of land disturbance, to the maximum extent possible. If unavoidable, disturbance would be minimized or mitigated. In addition to general protection measures, the DTRP outlines specific restoration and revegetation standards.

3.0.7 Clean Water Act

Section 404 of the Clean Water Act

The purpose of the Clean Water Act (CWA) is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Section 404 of the CWA prohibits the discharge of dredge or fill material into waters of the U.S. without a permit from the U.S. Army Corps of Engineers (USACE). The definition of waters of the U.S. includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas “that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR § 328.3[b]). The U.S. Environmental

Protection Agency has veto authority over the USACE's administration of the Section 404 program and may override a USACE decision with respect to permitting.

Under the current USACE-administered Nationwide Permit (NWP) Program, substation expansion may be authorized under NWP 12 (Utility Line Activities) if the project does not result in a loss of more than 0.5 acre of waters of the U.S. Permanent impacts to waters of the U.S. that exceed 0.5 acre may require an Individual Permit. The portions of the Proposed Project in California are under the jurisdiction of the Los Angeles District of the USACE. The portions of the Proposed Project in Nevada are under the jurisdiction of the Sacramento District of the USACE.

Section 401 of the Clean Water Act

While the USACE administers permitting programs that authorize impacts to waters of the U.S., in California, any USACE permit authorized for a proposed project would be invalid unless the Regional Water Quality Control Board (RWQCB) has issued a project-specific Water Quality Certification (WQC) or waiver of water quality. A WQC requires a finding by the RWQCB that the activities permitted by the USACE would not violate water quality standards individually or cumulatively over the term of the issued USACE permit. The portions of the Proposed Project in California are under the jurisdiction of the Colorado River and Lahontan RWQCBs. When a project falls within the jurisdiction of two or more RWQCBs the SWRCB assumes regulatory oversight of the project, and will be the agency to issue the project-specific WQC. In Nevada, Section 401 certification falls under the authority of the Nevada Department of Environmental Protection (NDEP), Bureau of Water Quality Planning (BWQP). The BWQP may either waive, certify, or deny Section 401 WQCs.

3.0.8 Mojave National Preserve General Management Plan

The Mojave National Preserve (MNP) General Management Plan (MNP-GMP) seeks to perpetuate native plant life as critical components of the Mojave Desert ecosystem within the MNP. Specifically, it allows the manipulation of plant and plant communities only when necessary and requires that all disturbed vegetation be restored to pre-disturbance conditions. This plan also seeks to identify, inventory, and promote conservation for any plant, as well as USFWS-designated critical habitat for any FESA-listed species or State- and locally listed threatened, endangered, rare, or candidate species.

The NPS may restrict access to USFWS-designated critical habitat, and active management programs are established, as necessary and only after consultation with the USFWS and CDFW. The MNP-GMP also outlines specific management policies and goals for desert tortoise and desert bighorn sheep (*Ovis canadensis nelsoni*), as described in the following subsections.

Desert Tortoise

The MNP-GMP recommends expanding current USFWS-designated critical habitat and outlines specific management policies for desert tortoise that are already in effect. The relevant policies to the Proposed Project require the following:

- The aggressive management of trash and litter that may attract common ravens, a desert tortoise predator

- The prohibition of surface disturbance on park lands, unless it is appropriately restored or mitigated for

The MNP GMP also recommends the following relevant management policies:

- No new roads will be constructed in desert tortoise critical habitat
- ROWs and easements will be reduced on MNP lands
- Holders of ROWs and easements may be required to install tortoise fencing through critical habitat
- An active restoration program will be established on previously disturbed lands

Desert Bighorn Sheep

The MNP GMP's management goal is to research and understand the effects of development, including increased traffic and noise pollution on populations of desert bighorn sheep.

3.1 STATE

3.1.0 California

California Public Utilities Commission General Order 131-D

Pursuant to California Public Utilities Commission (CPUC) General Order (G.O.) 131-D, the CPUC has sole and exclusive jurisdiction over the siting and design of electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities in the State of California. Under the California Environmental Quality Act (CEQA), the CPUC is the Lead Agency with respect to such Proposed Project elements within the State of California. Southern California Edison Company (SCE) is required to comply with G.O. 131-D and is seeking a Permit to Construct from the CPUC for the Proposed Project.

California Fish and Game Code

Sections 1600 through 1617

Sections 1600 through 1617 of the California Fish and Game Code require that a Notification of Lake or Streambed Alteration Agreement Application be submitted to the CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFW reviews the proposed actions and, if necessary, submits to the applicant a Draft Lake or Streambed Alteration Agreement that includes measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFW and the applicant is a Lake or Streambed Alteration Agreement.

Sections 3503, 3503.5, 3513, and 3800

Sections 3503, 3503.5, 3513, and 3800 of the California Fish and Game Code affords protection over the destruction of nests or eggs of native bird species, and it states that no birds in the orders of *Falconiformes* or *Strigiformes* (i.e., birds of prey) can be taken, possessed, or destroyed.

Sections 3511 and 4700

According to Sections 3511 and 4700 of the California Fish and Game Code—which regulate birds and mammals, respectively—a fully protected (FP) species may not be taken or possessed, and incidental take of these species is not authorized. The State of California first began to designate species as FP prior to the creation of the CESA and the FESA. Lists of FP species were initially developed to provide protection to animals that were rare or faced possible extinction, including fish, amphibians, reptiles, birds, and mammals. Most FP species have since been listed as threatened or endangered under the CESA and/or the FESA. FP species may not be taken or possessed at any time, except under certain circumstances, such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock (California Fish and Game Code § 3511).

California Endangered Species Act

The CESA (California Fish and Game Code § 2050) generally parallels the main provisions of the FESA. Section 2080 of the California Fish and Game Code prohibits the take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the California Fish and Game Code as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The CESA allows for take incidental to otherwise lawful projects. State lead agencies are required to consult with the CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat. Under California Fish and Game Code Section 2081 (b), the CDFW can issue an Incidental Take Permit (ITP) to allow take of a CESA-listed species, if such take is incidental to, and not the purpose of, carrying out an otherwise lawful activity. Permittees must implement species-specific avoidance and minimization measures and fully mitigate the impacts of the project.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code, §§ 1900-1913) directed the CDFW to carry out the Legislature’s intent to “preserve, protect, and enhance rare and endangered plants in this State.” The NPPA is administered by the CDFW. The California Fish and Game Commission has the authority to designate native plants as “endangered” or “rare,” and protect endangered and rare plants from take. When the CESA was passed in 1984, it expanded on the original NPPA, enhanced legal protection for plants, and created the categories of “threatened” and “endangered” species to parallel the FESA. The CESA converted all rare animals to threatened species under the NPPA, but did not do so for rare plants, which resulted in three listing categories for plants in California—rare, threatened, and endangered. The NPPA remains part of the California Fish and Game Code, and mitigation measures for impacts to rare plants are specified in a formal agreement between the CDFW and a project proponent.

The CDFW generally regards many plant species as rare if they are included on California Rare Plant Rank (CRPR) Lists 1A, 1B, 2A, and 2B of the CNPS Inventory. In addition, CRPR List 3 and 4 plants are sometimes considered if the population has local significance in the area and is impacted by the project. For the purposes of this document, CRPR List 3 and 4 plants are omitted from further discussion. Section 1913(b) includes a specific provision to allow for the

incidental removal of endangered or rare plant species, if not otherwise salvaged by the CDFW, within a ROW to allow a public utility to fulfill its obligation to provide service to the public.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act of 1991 is designed to conserve natural communities at the ecosystem scale within California while accommodating compatible land uses. Section 2800 of the California Fish and Game Code implements a collaborative program by the State of California and numerous public and private partners to take a broad, ecosystem approach to planning for the protection and perpetuation of biological diversity. NCCPs are the result of an effort to move away from specific species protections and implement community-wide protection measures.

Desert Renewable Energy Conservation Plan

As previously discussed, the existing transmission lines within California are located within the proposed DRECP area. As part of Phase II, the USFWS will determine whether to approve the proposed General Conservation Plan, and CDFW will determine whether to approve the proposed NCCP. The Draft DRECP was released in September 2014 for public review and comment.

California Environmental Quality Act

CEQA was enacted in 1970 to provide for full disclosure of environmental impacts to the public before issuance of a permit by local public agencies. In addition to federally or State-listed species, special-status plants and animals receive consideration under CEQA. Special-status species include wildlife species of special concern (SSCs), which are listed by the CDFW. Pursuant to the CEQA Guidelines (14 California Code of Regulations [CCR] § 15380), some SSCs could be considered “rare.” Any unmitigated impacts to rare species could be considered a “significant effect on the environment” (14 CCR § 15382). Thus, SSCs must be considered in any project that will undergo or is currently undergoing CEQA review, and/or that must obtain environmental permits from a public agency.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967 (California Water Code § 13000 et seq.) requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect waters of the State. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. Individual water quality control plans are prepared for each RWQCB. These plans set implementation policies, goals, and water management practices in accordance with the Porter-Cologne Water Quality Control Act. Waste discharge requirements and waivers are mechanisms used by the RWQCBs/SWRCB to control discharges and protect water quality.

3.1.1 Nevada

Nevada Revised Statutes Section 704.865

Nevada Revised Statutes (NRS) Section 704.865 provides that “A person, other than a local government, shall not commence to construct a utility facility in the State without first having obtained a permit therefor from the Commission. The replacement of an existing facility with a

like facility, as determined by the Commission, does not constitute construction of a utility facility.” The Public Utilities Commission of Nevada is the Lead Agency for compliance with the Nevada Utility Environmental Protection Act.

Nevada Revised Statutes Section 527.260-527.300

NRS Section 527.260, supplemented by the Nevada Administrative Code (NAC), protects native plant species that are threatened by extinction. After consulting other competent authorities, the State Forester Fire Warden has the authority to establish a list of species that are threatened with extinction. Any species declared to be threatened with extinction is placed on the list of FP species, and no individual of this species may be removed except under special permit issued by the State Forester Fire Warden.

Nevada Revised Statutes Section 503.585

NRS Section 503.585 requires a special purpose permit from the NDOW for the capture, removal, or destruction of any State-listed wildlife species. The special purpose permit specifies the relocation methods required on a project site.

Nevada Revised Statutes Chapter 445A

NRS Chapter 445A requires permits for discharges of any pollutant, including dredged soil and biological material, into any water of the State. A general permit is available for all projects that involve similar categories of discharges as previous projects. Individual permits may be granted if a proposed project does not fall within the parameters of the general permit.

Nevada Administrative Code 503

The Nevada Administrative Code (NAC) 503 establishes the State’s list of endangered, threatened, sensitive, and protected species. A permit issued by the Nevada Department of Wildlife (NDOW) is required to handle, move, or temporarily possess any wildlife species classified as endangered, threatened, sensitive, or protected to protect the wildlife from harm that may result from any previously approved activity on land where the wildlife is located. The NDOW reserves the right to make any stipulations and conditions of use it deems necessary.

3.2 LOCAL

The CPUC has sole and exclusive jurisdiction over the siting and design of the Proposed Project components located in the State of California. Pursuant to CPUC G.O. 131-D, Section XIV.B, “Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the CPUC’s jurisdiction. However, in locating such projects, the public utilities shall consult with local agencies regarding land use matters.” Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the county and cities’ regulations are not applicable as the county and cities do not have jurisdiction over the Proposed Project. Accordingly, the following discussion of local regulations is provided for informational purposes only. The Proposed Project is also subject to local regulations in the State of Nevada.

3.2.0 California

County of San Bernardino

County of San Bernardino 2007 General Plan

The County of San Bernardino 2007 General Plan was reviewed for relevant goals and policies related to biological resources. The Conservation Element contains the following goals and policies that are relevant to the Proposed Project:

- Goal CO 2: The County will maintain and enhance biological diversity and healthy ecosystems throughout the County.
- Goal CO 5: The County will protect and preserve water resources for the maintenance, enhancement, and restoration of environmental resources.
- Policy CO 2.1: The County will coordinate with state and federal agencies and departments to ensure that their programs to preserve rare and endangered species and protect areas of special habitat value, as well as conserve populations and habitats of commonly occurring species, are reflected in reviews and approvals of development programs.
- Policy CO 2.2: Provide a balanced approach to resource protection and recreational use of the natural environment.
- Policy CO 2.4: All discretionary approvals requiring mitigation measures to biological resources will include the condition that the mitigation measures be monitored and modified.
- Policy CO 5.4: Drainage courses will be kept in their natural condition to the greatest extent feasible to retain habitat and allow some recharge of groundwater basins and resultant savings.

The Open Space Element contains the following goal and policy that are relevant to the Proposed Project:

- Goal OS 6: Improve and preserve open space corridors throughout the County.
- Policy OS 4.2: The County will preserve and encourage the management of suitable land for greenbelts, forests, recreation facilities, and flood control to provide adequate water supply, achieve air quality improvement, and provide habitat for fish, wildlife, and wild vegetation.
- The Land Use Element contains the following policy that is relevant to the Proposed Project:
- Policy LU 7.2: Enact and enforce regulations that will limit development in environmentally sensitive areas, such as those adjacent to river or streamside areas, and hazardous areas, such as flood plains.

County of San Bernardino Development Code

Chapter 88.01.060

Section 88.01.060, Native Desert Plant Protection, of the County of San Bernardino Development Code provides regulations for the removal of specified native desert plants in order to preserve and protect the plants and to provide for the conservation and wise use of desert resources. The Native Desert Plant Protection requires a Tree or Plant Removal Permit to remove the following plants:

- Smoke trees (*Psoralea argophylla*) and mesquites (*Prosopis* spp.) with a stem measuring 2 inches or more in diameter or 6 feet or more in height
- All species of the family *Agavaceae*
- Creosote rings with diameters of 10 feet or more
- All Joshua trees (*Yucca brevifolia*)
- Any part, living or dead, of desert ironwood (*Olneya* spp.), mesquites, or palo verdes (*Parkinsonia* spp.)

Chapter 88.01.080

Section 88.01.080, Regulated Riparian Plants, provides for the protection of riparian plants. The county defines riparian vegetation as vegetation within 200 feet of the bank of a stream. Any removal of riparian vegetation requires a Tree or Plant Removal Permit and is subject to environmental review.

City of Hesperia

City of Hesperia General Plan 2010

The City of Hesperia General Plan 2010 was reviewed for relevant goals and policies related to biological resources. The following goals and implementation policies are contained in the Conservation Element of the plan:

- Goal CN-1: Conserve water resources within the Upper Mojave River Groundwater Basin.
- Goal CN-2: Establish building and development standards to maximize the reclamation of water resources.
- Goal CN-3: Minimize development and set aside necessary open space near and along the surface waters as well as those washes and other water passageways located in the City of Hesperia to preserve and protect plant and animal species and their natural habitat dependent on such surface waters and water ways.
- Goal CN-4: Establish policies and regulations to protect the natural environment and habitat of the cities biological resources.
- Implementation Policy CN-1.4: Limit the disturbance of natural water hydrology by minimizing the creation of impervious surface area.

- Implementation Policy CN-2.1: Minimize impacts to washes that convey drainage by prohibiting development within drainage corridors.
- Implementation Policy CN-2.3: Protect open space areas used for recharging groundwater basins.
- Implementation Policy CN-3.1: Monitor the development impacts to these surface water resources within the city.
- Implementation Policy CN 3-2: Preserve areas within the Oro Grand wash and un-named wash #1 that exhibit ideal native habitat in a natural state.
- Implementation Policy CN-4.1: Preserve pristine open space areas and known wildlife corridors for conservation to protect species and their habitats.
- Implementation Policy CN-4.2: Encourage the protection, preservation and long-term viability of environmentally sensitive habitats and species in the City of Hesperia.
- Implementation Policy CN-4.3: Identify lands that are suitable for preservation for sensitive species and their habitats.
- Implementation Policy CN-4.4: In those areas known as possible habitat for endangered and sensitive species, require proper assessments before authorizing development.
- Implementation Policy CN-4.5: Where such assessments indicate the presence of endangered or sensitive species, require appropriate actions to preserve the habitat and protect the identified species.

City of Hesperia Code of Ordinances

Chapter 16.24, Article II

Article II, Desert Native Plant Protection, describes the importance of protecting and preserving specified desert native plants. It also details the regulations and guidelines for harvesting such plants. A removal permit is required for any of the following trees:

- Smoke trees, all species of the family *Agavaceae*, and all mesquites with stems measuring more than 2 inches in diameter or more than 6 feet in height
- Creosote rings with diameters of 10 feet or more
- All Joshua trees (mature and immature)

Chapter 16.24, Article III

Article III, Riparian Plant Conservation, requires a tree removal permit for any vegetation removal within 200 feet of a stream bank.

3.2.1 Nevada

Clark County

Clark County Comprehensive Plan

The Conservation and Open Space Element of the Clark County Comprehensive Plan contains the following policies that are relevant to the Proposed Project:

- Environmentally Sensitive Lands Policy 6: Clark County should explore an expanded local government role in protecting and managing Environmentally Sensitive Lands where appropriate
- Land Conservation Policy 3: Encourage preservation and protection of washes and waterways.
- Species Protection Policy 1: Encroachment upon endangered species habitats and unique biological resource areas should be avoided or mitigated.
- Species Protection Policy 3: Clark County and Federal agencies should coordinate land uses and disposals near federally designated management areas to reduce environmental and habitat impacts within protected areas.
- Species Protection Policy 4: Protect existing threatened or endangered species and those species that may be listed under the provisions of the Federal Endangered Species Act.
- Species Protection Policy 5: Throughout the 30-year term of the permit, Clark County will administer and maintain Permit TE 034927-0 for the Clark County Multiple Species Habitat Conservation Plan (MSHCP), under Section 10(a)1(B) of the Endangered Species Act of 1973.
- Water Quality Policy 8: Actively pursue efforts to ensure the quality of water entering the Colorado River.

Clark County Code of Ordinances

Chapter 30.32.050, Incidental Take Permit: Compliance with Endangered Species Act, details the process required by developers to comply with the Clark County Multiple Species HCP (MSHCP).

Clark County Multiple Species Habitat Conservation Plan

The Clark County Desert Conservation Program is responsible for FESA compliance for Clark County and the City of Boulder City, among others, in coordination with the USFWS, NPS, BLM, the U.S. Forest Service, the NDOW, and other State and local agencies. The program implements the MSHCP and measures required in the associated incidental take statement, pursuant to Section 10(a)1(B), to provide a streamlined process for FESA compliance by private landowners. Along with broad measures for funding and administration, the Clark County MSHCP provides for specific protective measures to be implemented by the various agencies involved on their respective jurisdictions. Although SCE's ROWs are within the BLM utility

corridor, which is not regulated by the MSHCP, the following special-status wildlife measures are relevant to the Proposed Project outside of the ROW:

Bureau of Land Management

- Limit motorized use in the Eldorado/Piute “Conserved Habitat” to designated trails.
- Protect snags as important ecological features.
- Work with the Nevada Power Company and other utilities to modify existing power line towers or poles to meet BLM standards for the prevention of raptor mortality.
- Protect key nesting areas, migration routes, important prey base areas, and concentration areas for birds of prey on public lands through the mitigation of activities during National Environmental Policy Act compliance.
- Limit the construction of new roads for the development of utility lines within special status species habitat.
- Protect important resting/nesting habitat, such as riparian areas and mesquite/acacia woodlands. Do not allow projects that may adversely impact the water table supporting these plant communities.
- Within desert tortoise critical habitat, require reclamation of activities that result in loss or degradation of habitat, with habitat to be reclaimed to pre-disturbance condition.
- During development of all activity plans, give special attention to protecting riparian zones as wildlife habitat and to protecting associated native wildlife.
- Limit utility corridors to widths of 3,000 feet or less.

Nevada Division of State Parks

- Prohibit collection or harassment of any wildlife
- Prohibit unconstrained pets or domestic animals

Laughlin Land Use Plan

The Laughlin Land Use Plan was reviewed for relevant goals and policies related to biological resources. The Natural Environment section contains the following policies that are relevant to the Proposed Project:

- Policy 39.4: In coordination with the Clark County Regional Flood Control District (CCRFCD) and other community stakeholders, encourage the preservation of natural washes and unlined channels to an extent practical and consistent with the need for flood protection, erosion control, and water quality.
- Policy 39.6: Encourage the preservation of natural washes and waterways.

The Conservation Areas section contains the following goal and policies that are relevant to the Proposed Project:

- Goal 44: Encourage the conservation of wilderness and preservation lands.
- Policy 44.2: Clark County should encourage the preservation of areas that exceed two and one half acres in size with slopes of 12% or greater for parks, open space conservation and other compatible uses.
- Policy 44.3: Encourage transitional development to buffer environmentally sensitive lands from more intensive uses.

South Clark County Land Use Plan

The South Clark County Land Use Plan was reviewed for relevant goals and policies related to biological resources. The Natural Environment section contains the following policy that is relevant to the Proposed Project:

- Policy 46.4: In coordination with Regional Flood Control District and other community stakeholders, encourage the preservation of natural washes and unlined channels to an extent practical and consistent with the need for flood protection, erosion control, and water quality.

The Conservation section contains the following goal and policies that are relevant to the Proposed Project:

- Goal 50: Encourage Conservation Areas.
- Policy 50.2: Encourage preservation and protection of washes and waterways.
- Policy 50.3: Encourage transitional development to buffer environmentally sensitive lands from more intensive uses.
- Policy 50.7: Environmentally sensitive lands should be buffered by using sound development design and having low intensity uses next to these lands.
- Policy 50.8: Roads ending at conservation/sensitive lands should be properly terminated to prevent: vehicles from traversing vegetated areas; use of unimproved/undedicated rights-of-way; and illegal dumping.

The Cal-Nev-Ari section contains the following goal that is relevant to the Proposed Project:

- Goal 52: To promote development that is compatible with the natural environment and consistent with the history of Cal-Nev-Ari.

City of Boulder City

Boulder City Master Plan

The Conservation and Open Space Elements of the Boulder City Master Plan include the following relevant policies:

- NRC 5: The city should continue to preserve, wherever possible, natural habitat for wildlife and plants native to the region through compliance with the Clark County Multiple Species Habitat Conservation Plan. When the Multiple Species Habitat Conservation Plan is amended to include riparian species, the city shall amend its plans as necessary to abide by any new requirements.
- NRC 9: The city shall continue to work with the Regional Flood Control District to ensure that future development projects provide multi-purpose flood control systems that incorporate trails and recreational facilities as well as serving flood control functions.

Boulder City City Code

Chapter 43 of the Boulder City City Code requires that all development comply with the Clark County MSHCP. Chapter 40 of the Boulder City City Code prohibits the alteration of natural floodplains, stream channels, and natural protective barriers, which help channel flood waters and sediments.

4 – METHODS

Biological resources data were collected for the Proposed Project’s Biological Resources Survey Area (BRSA) to evaluate and inventory biological resources. The BRSA is composed of the Proposed Project area and a buffer of variable widths (to allow for changes in Proposed Project engineering). Therefore, the BRSA comprises a larger area than would be impacted by the Proposed Project. Background resource data were obtained through a literature review of aerial photographs, U.S. Geological Survey (USGS) topographic maps, USFWS National Wetland Inventory maps (USFWS 2016), survey reports for the Proposed Project, and literature and database searches. In addition, Insignia Environmental (Insignia) conducted field visits—including a habitat assessment, vegetation community mapping, special-status plant and wildlife surveys, and jurisdictional delineations of wetlands and waters—to assess biological and aquatic resources in the BRSA. The background research methods are described in Section 4.1 Background Research, and survey methods are provided in Section 4.2 Field Surveys.

4.0 DEFINITIONS

4.0.0 Sensitive Natural Communities

Sensitive natural communities are defined as communities that are of limited distribution Statewide or within a county or region and are often vulnerable to environmental effects of projects. These communities may or may not contain special-status species or their habitats.

Natural communities with a state ranking of 1 to 3 are considered to be special status. The rankings are defined as follows:

- S1 (Critically Imperiled): Critically imperiled in California because of extreme rarity (often five or fewer occurrences) or because of some factor(s), such as very steep declines, making it especially vulnerable to extirpation from the state/province
- S2 (Imperiled): Imperiled in California because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province
- S3 (Vulnerable: Vulnerable in California due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation

4.0.1 Special-Status Plants

Special-status plant species are defined as follows:

- Species listed or candidates for listing as threatened or endangered under the FESA
- Species considered to be “sensitive” by the BLM
- Species considered to be critically imperiled (S1), imperiled (S2), or vulnerable (S3) under the Nevada Natural Heritage Program (NNHP)
- Species listed or candidates for listing as threatened or endangered under the CESA
- Species meeting the definition of rare or endangered under the CEQA (14 CCR § 15380 [b] and [d]), including the following:
 - Species considered by the CNPS to be rare, threatened, or endangered in California (i.e., CRPRs 1A, 1B, 2A, 2B, and 3)
 - Some species included on the CDFW California Natural Diversity Database (CNDDDB) Special Plants, Bryophytes, and Lichens List (CDFW 2018a)
 - Species that are considered a locally significant species, which is a species that is not rare from a Statewide perspective, but is rare or uncommon in a local context, such as within a county or region (14 CCR § 15125 [c]), or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G)
- Species covered by the DRECP

4.0.2 Special-Status Wildlife

For purposes of this analysis, special-status wildlife are defined as follows:

- Species listed or candidates for listing as threatened or endangered under the FESA

- Species considered to be “sensitive” by the BLM
- Species designated “endangered,” “threatened,” “sensitive,” or “protected” in Nevada (Nevada Revised Statute 503)
- Species that are FP in California (California Fish and Game Code §§ 3511, 4700, 5050, and 5515) and in Nevada (Nevada Revised Statute 527.260)
- Species listed or candidates for listing as threatened or endangered under the CESA
- Species meeting the definition of endangered, rare, or threatened under CEQA (14 CCR § 15380) that may include species not found on either federal or State endangered species lists
- Migratory birds and any of their parts, eggs, and nests, as protected by the MBTA
- Birds of prey (California Fish and Game Code §§ 3503, 3503.5, 3513, and 3800)
- Species designated as a SSC by the CDFW
- Species covered by the DRECP

4.1 BACKGROUND RESEARCH

Preliminary investigations included a study of aerial photographs, USGS topographic maps, USFWS National Wetland Inventory maps (USFWS 2016), survey reports for the Proposed Project, and literature and database searches, as described further in the subsections that follow.

4.1.0 Special-Status Species Records

A literature and database search was conducted for the USGS 7.5-minute quadrangles (quads) containing and adjacent to the Proposed Project area. This included a geographic information system (GIS) review of records from the CNDDDB (CDFW 2018c) and the NNHP database (2018). Records for all known special-status species within 0.25 mile, 1 mile, and 5 miles of the Proposed Project were compiled and reviewed. The CNPS Inventory (CNPS 2017) was also accessed to obtain additional information regarding sensitive plant species. A 147-quad search was conducted for CNPS special-status plant records. The USFWS Information for Planning and Consultation (IPaC) (USFWS 2018a) was queried for a list of threatened and endangered species known to occur within or near the BRSA.

Potentials to Occur

After generating the list of potentially occurring special-status species, species were categorized by the likelihood of observance using literature and database searches and the Proposed Project’s habitat assessment. The special-status species categories are as follows:

- **Occurs:** The species was observed in the BRSA during surveys.

- **Likely to Occur:** Habitat for the species is present and the geographic and elevation ranges within the Proposed Project are consistent with those documented for the species. Recent (i.e., less than 20 years old) CNDDDB or NNHP occurrences for the species have also been documented within 1 mile of the BRSA.
- **Unlikely to Occur:** Habitat for the species is present within 1 to 5 miles of the BRSA, and historical (i.e., over 25 years old) occurrences for the species have been recorded; or some habitat exists within or near the BRSA that is limited, fragmented, or isolated, but recent (i.e., less than 25 years old) CNDDDB occurrences for the species have been recorded.
- **Does Not Occur:** The BRSA is located outside of the range of the species; no habitat for the species exists in the BRSA; or no recent CNDDDB or NNHP occurrences for this species have been recorded within 5 miles of the BRSA. Alternatively, any CNDDDB occurrences recorded within 5 miles of the Proposed Project are now extirpated.
- **Absent:** Surveys were conducted and the species was not observed within the BRSA.

4.1.1 Critical Habitat

Critical habitat data provided by the USFWS were reviewed to identify any designated critical habitat located in the BRSA. In addition, background information, including scientific literature and agency documents (e.g., 5-year reviews, HCPs, and survey protocols) were reviewed to further identify sensitive species with the potential to occur in the BRSA.

4.1.2 Habitat Conservation Plans/Natural Community Conservation Plans

The USFWS Environmental Conservation Online System (ECOS) (USFWS 2018b) was reviewed to determine whether any active HCPs would be crossed by the Proposed Project. The CDFW NCCP Plan Summaries (CDFW 2018b) was also reviewed to determine whether the BRSA would cross any active NCCPs.

4.1.3 Vegetation Communities

Publicly available vegetation data were collected from the following sources:

- The Central Mojave Vegetation Map (Data.gov 2016)
- The DRECP Mojave Desert Vegetation Geographic Information System Layer (CDFW 2017)
- Vegetation Database for Land-Cover Mapping, Clark and Lincoln Counties, Nevada (Charlet et al. 2014)

Portions of each of these three vegetation datasets overlapped with the BRSA and were used as an initial vegetation layer that was later field-verified, as described in Section 4.2.1 Vegetation Community Mapping. Vegetation data in each of these three layers conform to alliance-level mapping described in the Manual of California Vegetation Online (CNPS 2018).

4.2 FIELD SURVEYS

Insignia conducted numerous field surveys for biological resources in the BRSA. After the original surveys were conducted, SCE made several refinements to the Proposed Project work areas. Consequently, the BRSA was revised several times and the locations of biological resources surveys varied. Several surveys were conducted in the BRSA, including habitat assessment, vegetation community mapping, special-status plant surveys, special-status wildlife surveys, and jurisdictional delineations of wetlands and waters. These surveys are summarized in Table 7: Surveys Conducted in the BRSA and the subsections that follow.

4.2.0 Habitat Assessment

A habitat assessment was conducted within 1,000 feet (i.e., 500 feet on either side) of the entire approximately 240-mile Proposed Project alignment on February 22 through 24, 2016. Insignia biologists Makela Mangrich and Larry Butcher flew above the alignment in a helicopter moving at a low speed. The biologists verified the publicly available vegetation data layer and made refinements where needed, mapped nests within tower sites, noted wind-blown sand areas (i.e., potential habitat for the Mojave fringe-toed lizard [*Uma scoparia*]), and described the general characteristics of the drainage features that would be encountered during the jurisdictional delineation effort.

4.2.1 Vegetation Community Mapping

The vegetation mapping for the Proposed Project was completed in two stages. Publicly available vegetation data, as described in Section 4.1.3 Vegetation Communities, were mapped on a hard-copy field map with a full-color aerial base map at a scale of 1 inch to 333 feet. This map was used to perform a habitat assessment, as described in Section 4.2.0 Habitat Assessment.

Vegetation boundaries within 1,000 feet (i.e., 500 feet on either side) of the transmission line were reviewed, and errors in the publicly available data were corrected. Additional detail on riparian areas was also noted to inform the special-status wildlife surveys.

This initial vegetation map was further refined during the first pass of the special-status plant surveys, conducted from March 28 through April 16, 2016. Hard-copy field maps with a full-color aerial base map were printed at a scale of 1 inch to 333 feet. The biologists verified and refined the vegetation boundaries within the BRSA. Specifically, biologists ensured that all vegetation mapping conformed to the MCV2 alliances. Minimum mapping units for riparian communities were less than 0.5 acre. Minimum mapping units for upland communities were generally 1 hectare (2.2 acres) or less. Hard-copy edits were later digitized into a GIS shapefile, and attribute data were included to identify the MCV2 alliance names.

Table 7: Surveys Conducted in the BRSA

Survey Type	Year	Date(s)	Approximate Area Surveyed (Acres)
Habitat assessment	2016	February 22 to February 24	N/A ⁶
Vegetation Community Mapping	2016	March 28 through April 16	N/A ⁶
Special-status plants	2016	March 28 to April 15	2,511
		May 2 to May 18	2,511
	2017	March 29 to April 9	124
		May 8 to May 15	74
		September 28 to October 5	774
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	2016	April 20, May 8, May 23, June 5, June 15, June 25, July 6, and July 19	10
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	2016	April 20, May 8, May 23, June 5, June 15, June 25, July 6, and July 19	10
Desert tortoise (<i>Gopherus agassizii</i>)	2016	October 3 to October 20	1,342
	2017	May 11 to 15	6
		October 4 to October 5	12
Jurisdictional Delineations	2016	April 18 through May 3	2,511
	2017	April 1, 2, 7, and 9	77
		October 4 to October 5	12

⁶ This survey was conducted within 1,000 feet (i.e., 500 feet on either side) of the entire approximately 343-mile Proposed Project alignment.

4.2.2 Special-Status Plant Surveys

Insignia conducted special-status plant surveys in the BRSA. Surveys were conducted on the following dates:

- March 28 to April 15, 2016
- May 2 to 18, 2016
- March 29 to April 9, 2017
- May 8 to 15, 2017
- September 28 to October 5, 2017

The surveys were conducted in accordance with guidelines published by the CNPS (2001), CDFG (2009), and USFWS (1996). Surveys were focused on species that were determined to have a moderate to high potential to occur, based on the background research. Details of the survey methods are provided in Attachment B: Special-Status Plant Species Survey Report.

4.2.3 Special-Status Wildlife Surveys

Special-status wildlife surveys were conducted for the following species:

- Least Bell's vireo (*Vireo bellii pusillus*), a federally endangered (FE) bird species
- Southwestern willow flycatcher (*Empidonax traillii extimus*), an FE bird species
- Desert tortoise, a federally threatened (FT) reptile species

Least Bell's Vireo

Phoenix Biological Consulting conducted presence/absence surveys for least Bell's vireo within the BRSA in eight rounds between April 20 and July 19, 2016. The surveys were conducted in accordance with USFWS (2001) survey protocol. Surveys were conducted within 10 acres of the BRSA in four riparian habitat sites that were previously identified by Insignia personnel as potential suitable habitat. Least Bell's vireo protocol surveys and dates are provided in Attachment D: Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report.

Southwestern Willow Flycatcher

Phoenix Biological Consulting conducted presence/absence surveys for southwestern willow flycatcher within the BRSA in five rounds between May 23 and July 6, 2016. The surveys were conducted in accordance with USFWS (2000 and 2001) and Sogge et al. (2010) survey guidelines. Surveys were conducted within 10 acres of the BRSA in four riparian habitat sites that were previously identified by Insignia personnel as potential suitable habitat. Least Bell's vireo protocol surveys and dates are provided in Attachment D: Least Bell's Vireo and Southwestern Willow Flycatcher Survey Report.

Desert Tortoise

Insignia conducted presence/absence surveys for desert tortoise in the BRSA between October 3 and 20, 2016; between May 11 and 15, 2017; and on October 4 and 5, 2017. The surveys were conducted in accordance with the USFWS's survey guidelines (2010), as modified with approval by the USFWS. Surveys were conducted within a 20-meter buffer around the perimeter of each work area. This 20-meter survey buffer was approved by the USFWS, which did not require

additional surveys for buffers of 200, 400, or 600 meters⁷. Survey methods for desert tortoise surveys are provided in Attachment E: Desert Tortoise Pre-Project Survey Report, Attachment F: Addendum to the Desert Tortoise Pre-Project Survey Report, and Attachment G: Second Addendum to the Desert Tortoise Pre-Project Survey Report.

4.2.4 Jurisdictional Delineation of Wetlands and Waters

Insignia conducted three preliminary assessments of wetlands and waters for the Proposed Project within the BRSA. Surveys were conducted from April 18 through May 3, 2016; on April 1, 2, 7, and 9, 2017; and on October 4 and 5, 2017. Insignia biologists assessed areas that may fall within the following jurisdictions:

- USACE, pursuant to Section 404 of the CWA
- Lahontan and Colorado River RWQCBs, pursuant to the Porter-Cologne Water Quality Control Act (California Water Code, Chapter 2, § 13050) or Section 401 of the CWA
- CDFW, pursuant to Section 1602 of the California Fish and Game Code
- NDEP, Bureau of Water Quality Planning, pursuant to Section 401 of the CWA

Details describing specific survey methods used for the preliminary jurisdictional wetlands and waters assessments are provided in Attachment H: Preliminary Jurisdictional Delineation Report and Attachment I: Supplemental Preliminary Jurisdictional Delineation Report.

5 – RESULTS

5.0 CLIMATE, HYDROLOGY, AND TOPOGRAPHY

The Proposed Project is located in the Mojave Desert, within approximately 240 miles of SCE's transmission corridor, from Lugo Substation (located near the City of Hesperia, California) east to Mohave Substation (located in the community of Laughlin, Nevada) and north to Eldorado Substation (located in the City of Boulder City, Nevada). The BRSA crosses the Great Basin, Lower Colorado, and California Hydrologic Regions. Due to the large area spanned by the Proposed Project, the BRSA crosses many drainages (i.e., ephemeral desert washes). Washes in the BRSA are typically dry, but are subject to flash flooding during periods of intense rains. Many washes remain in a natural state due to the lack of development throughout most of the BRSA. However, water has been diverted for agriculture in some areas. Most notably, the Mojave River has been subject to drastic changes in hydrology, due to the construction of the Cedar Springs Dam and the ensuing development of the California State Water Project. The BRSA also crosses the California Aqueduct near its terminus at Silverwood Lake.

As presented in Attachment H: Preliminary Jurisdictional Delineation Report, the BRSA crosses the following major water features, as well as many smaller, unnamed washes:

- Argos Wash
- Black Canyon Wash

⁷ Per the CDFW's request, the October 2017 surveys were conducted in 200-, 400-, and 600-meter survey buffers, as well as the 20-meter buffer.

- Broadwell Wash
- Budweiser Wash
- Cottonwood Wash
- Governor Edmund G. Brown East Branch California Aqueduct
- Kelso Wash
- Mojave River
- Piute Wash
- Watson Wash
- Willow Wash
- Winston Wash
- Woods Wash

In the vicinity of Lugo Substation, storm water generally flows from the south to the northeast toward the Mojave River. Near the proposed Newberry Springs and Ludlow Series Capacitors, storm water typically has a localized directional flow that empties into several minor basins. At Mohave Substation, storm water flows from west to east, and into the Colorado River. At Eldorado Substation, storm water flows generally from north to southeast, and also into the Colorado River.

The elevation of the BRSA ranges from approximately 780 feet near Mohave Substation to 4,000 feet above mean sea level at various points. Between 1981 and 2010, an average annual rainfall of approximately 4.9 inches was recorded at the climatological station nearest to Eldorado Substation.⁸ Between 1981 and 2010, the average annual high temperature was approximately 80.1 degrees Fahrenheit (°F), and the average annual low temperature was 58.7°F.

5.1 VEGETATION COMMUNITIES

The BRSA consists mostly of undeveloped lands, with few urbanized areas. The *Larrea tridentata* – *Ambrosia dumosa* shrubland alliance and *Larrea tridentata* shrubland alliance were observed throughout the majority of the BRSA. These alliances are characterized by the dominance of creosote bush, although other shrubs and emergent trees may be present at low densities. These alliances support a variety of wildlife species, consisting mainly of rodents and reptiles. The presence of standing water in winter and the growth of herbaceous plants in spring provide foraging areas and food for wildlife. Barren land was also present throughout much of the BRSA. Thirty-seven⁹ vegetation community alliances and land cover types were identified in the BRSA, as presented in Table 8: Vegetation Community Alliances and Land Cover Types Observed within the BRSA. Vegetation within the BRSA was surveyed and mapped to the alliance level as described in the Manual of California Vegetation, Second Edition (Sawyer et al. 2009).

⁸ The nearest climatological station is located in the City of Las Vegas.

⁹ Several of the alliances documented in the 2015 vegetation mapping effort were renamed or recategorized, as documented in A Manual of California Vegetation Online (2018).

Table 8: Vegetation Community Alliances and Land Cover Types Observed within the BRSA

Vegetation Community Alliance or Land Cover Type	Approximate Area within the BRSA (Acres)
<i>Achnatherum speciosum</i> Herbaceous Alliance	0.3
Active Agriculture	12.9
<i>Adenostoma fasciculatum</i> Shrubland Alliance	8.5
<i>Ambrosia dumosa</i> Shrubland Alliance	9.1
<i>Ambrosia salsola</i> – <i>Bebbia juncea</i> Shrubland Alliance	17
<i>Atriplex confertifolia</i> Shrubland Alliance	0.6
<i>Atriplex polycarpa</i> Shrubland Alliance	53.4
Barren – Not Developed	13.4
<i>Cercocarpus montanus</i> Shrubland Alliance	3.4
<i>Chilopsis linearis</i> - <i>Psoralea argophylla</i> Woodland Alliance	3.4
<i>Coleogyne ramosissima</i> Shrubland Alliance	4.7
<i>Cylindropuntia bigelovii</i> Shrubland Alliance	0.2
<i>Chorizanthe rigida</i> – <i>Geraea canescens</i> Desert Pavement Sparsely Vegetated Alliance	209.7
Developed Land	299.4
<i>Encelia (actoni, virginensis)</i> – <i>Viguiera reticulata</i> Shrubland Alliance	6.3
<i>Encelia farinosa</i> Shrubland Alliance	68.1
<i>Ephedra funerea</i> Shrubland Alliance	7.9
<i>Ephedra nevadensis</i> – <i>Lycium andersonii</i> – <i>Grayia spinosa</i> Shrubland Alliance	1.1
<i>Ephedra viridis</i> Shrubland Alliance	4.3
<i>Ericameria cooperi</i> Provisional Shrubland Alliance	5.0
<i>Ericameria linearifolia</i> – <i>Cleome isomeris</i> Shrubland Alliance	8.4
<i>Ericameria nauseosa</i> Shrubland Alliance	32.4
<i>Ericameria paniculata</i> Shrubland Alliance	14.5
<i>Eriogonum fasciculatum</i> Shrubland Alliance	97.1
<i>Juniperus californica</i> Woodland Alliance	20.1
<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> Shrubland Alliance	1,155.7
<i>Larrea tridentata</i> – <i>Encelia farinosa</i> Shrubland Alliance	33.4
<i>Larrea tridentata</i> Shrubland Alliance	290.5
<i>Pleuraphis rigida</i> Herbaceous Alliance	0.6

Vegetation Community Alliance or Land Cover Type	Approximate Area within the BRSA (Acres)
<i>Prunus fasciculata</i> - <i>Salazaria mexicana</i> Shrubland Alliance	81.8
<i>Purshia tridentata</i> Shrubland Alliance	0.5
<i>Salix exigua</i> Woodland Alliance	0.4
<i>Senegalia greggii</i> – <i>Hyptis emoryi</i> - <i>Justicia californica</i> Shrubland Alliance	50.7
<i>Suaeda moquinii</i> Shrubland Alliance	5.2
<i>Tamarix</i> spp. Shrubland Semi-Natural Alliance	0.9
<i>Yucca brevifolia</i> Woodland Alliance	66.9
<i>Yucca schidigera</i> Shrubland Alliance	135.6

Source: CNPS 2018

Detailed descriptions of the vegetation community alliances observed in the BRSA, as described in 2016, are presented in Attachment B: Special-Status Plant Species Survey Report.

5.1.0 Sensitive Natural Communities

Of the 37 vegetation community alliances and land cover types observed within the BRSA, the following 11 are designated as sensitive natural communities. Detailed descriptions of these sensitive natural communities are provided in Attachment B: Special-Status Plant Species Survey Report.

- *Achnatherum speciosum* Herbaceous Alliance
- *Chilopsis linearis* – *Psoralea argophylla* Woodland Alliance
- *Cylindropuntia bigelovii* Shrubland Alliance
- *Encelia (actoni, virginensis)* – *Viguiera reticulata* Shrubland Alliance
- *Ephedra funerea* Shrubland Alliance
- *Ericameria paniculata* Shrubland Alliance
- *Pleuraphis rigida* Herbaceous Alliance
- *Prunus fasciculata* – *Salazaria mexicana* Shrubland Alliance
- *Purshia tridentata* Shrubland Alliance
- *Suaeda moquinii* Shrubland Alliance
- *Yucca brevifolia* Woodland Alliance

5.2 SPECIAL-STATUS PLANT SPECIES

5.2.0 Background Research Results

Background research conducted for the Proposed Project generated a list of 135 special-status plant species that have a potential to occur in the BRSA. This list was refined by comparing the species' ranges and habitat requirements with the location of the BRSA and the habitat types within it. These species are presented in Table 9: Special-Status Plant Species with the Potential to Occur within the BRSA along with their listing status, life history, blooming period, habitat requirements, and a brief assessment of their potential to occur within the BRSA. CNDDDB occurrences within 5 miles of the BRSA are depicted in Figure 2: CNDDDB Special-Status Plant Occurrences Map and Figure 3: NNHP Wildlife and Plant Occurrences Map in Attachment A: Figures.

5.2.1 Special-Status Plant Survey Results

Insignia botanists observed 19 special-status plant species in the BRSA during the 2016 and 2017 special-status plant surveys¹⁰ as summarized in Table 10: Special-Status Plant Species Observed. Of these 19 species, 12 species were observed only in California, one species observed only in Nevada, and six species were observed in both California and Nevada¹¹. Attachment B: Special-Status Plant Species Survey Report includes the locations of the special-status plant species observed in the BRSA.

¹⁰ Special-status plant individuals or populations that were mapped during the 2016 surveys and were observed again in 2017 were not re-recorded during the 2017 surveys.

¹¹ Four of the six special-status species observed in both states do not carry a special-status listing in Nevada.

Table 9: Special-Status Plant Species with the Potential to Occur within the BRSA

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Abert's sanvitalia	<i>Sanvitalia abertii</i>	2B.2	This species occurs in scrub habitats, and pinyon and juniper woodlands, often on carbonate soils, dry slopes, and washes at elevations from 4,365 to 5,905 feet.	August to October / annual herb	Abert's sanvitalia is known only from the Clark and New York mountains in California. This species has not been documented within 5 miles of the Biological Resources Survey Area (BRSA). It has a low potential to occur on limestone at Foshay Pass. Absent in California (CA)¹ Absent in Nevada (NV)
Abrams' spurge	<i>Euphorbia abramsiana</i>	2B.2	This species occurs in Mojavean desert scrub and Sonoran desert scrub, often on sandy substrates at elevations from 10 feet below sea level to 3,010 feet.	September to November, sometimes as early as August / annual herb	Abrams' spurge plants were observed during the 2017 surveys at the eastern end of Foshay Pass in the Providence Mountains and at the intersection of Lanfair Road and the transmission alignment. Occurs in CA Absent in NV
Alkali mariposa lily	<i>Calochortus striatus</i>	BLM 1B.2 DRECP	This species occurs in moist alkaline soils in meadows, chaparral, chenopod scrub, and Mojavean desert scrub between 220 and 5,240 feet in elevation.	April to June / perennial bulbiferous herb	This species has been documented near the BRSA, and there is a limited amount of suitable habitat for this species in the BRSA near the community of Lucerne Valley and Fifteenmile Valley. However, this species requires moist, alkaline soils. The BRSA skirts the perimeter of two alkaline playas but does not cross these playas. Absent in CA Absent in NV
Appressed muhly	<i>Muhlenbergia appressa</i>	2B.2	This species occurs in coastal scrub, Mojavean desert scrub, valley and foothill grassland, and often on rocky substrates at elevations from 60 to 5,250 feet.	April to May / annual herb	This species was observed during the 2016 surveys on the steep, rocky, north-facing slopes and canyons of Foshay Pass in the Providence Mountains. This area was resurveyed in 2017, but it was not during the species' blooming season. Therefore, this species was not observed in 2017. Occurs in CA Absent in NV
Arizona cottontop	<i>Digitaria californica</i> var. <i>californica</i>	2B.3	This species occurs in Mojavean desert scrub and Sonoran desert scrub, often in rocky substrates and on hillsides at elevations from 100 to 4,955 feet.	August to October / perennial herb	Suitable habitat is present in the BRSA, but this species has not been documented within 5 miles of the BRSA. Absent in CA Absent in NV

¹² Explanation of listing codes:

Federal listing codes:
 -FE: Federally listed as Endangered
 -FT: Federally listed as Threatened
 -DRECP: Species covered by the DRECP

Bureau of Land Management (BLM) species:
 -BLM: Species considered to be "sensitive" by the BLM

California listing codes:
 -CE: State-listed as Endangered
 -CT: State-listed as Threatened
 -CR: State-listed as Rare

Nevada listing codes:
 -S1: State-listed as Critically Imperiled
 -S2: State-listed as Imperiled
 -S3: State-listed as Vulnerable

California Native Plant Society (CNPS) California Rare Plant Ranks:
 -1A: Plants presumed extirpated in California and either rare or extinct elsewhere
 -1B: Plants rare, threatened, or endangered in California and elsewhere
 -2A: Plants presumed extirpated in California, but common elsewhere
 -2B: Plants rare, threatened, or endangered in California, but more common elsewhere

Threat Ranks:

-.1: Seriously threatened in California (over 80 percent of occurrences threatened; high degree and immediacy of threat)
 -.2: Moderately threatened in California (20 to 80 percent of occurrences threatened; moderate degree and immediacy of threat)
 -.3: Not very threatened in California (less than 20 percent of occurrences threatened; low degree and immediacy of threat or no current threats known)

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Arizona pholistoma	<i>Pholistoma auritum</i> var. <i>arizonicum</i>	2B.3	This species occurs in Mojavean desert scrub at elevations from 900 to 2,740 feet.	March / annual herb	Although suitable habitat is present within the BRSA, all occurrences of this species are south of the BRSA, including the core populations located along the Arizona-California border. Absent in CA Absent in NV
Aven Nelson's phacelia	<i>Phacelia anelsonii</i>	2B.3	This species occurs in Joshua tree woodland, pinyon and juniper woodland often on carbonate, sandy or gravelly substrates at elevations from 3,930 to 4,930 feet.	April to May / annual herb	Although suitable habitat is present in the BRSA, the BRSA does not exceed 3,000 feet in elevation within the known geographic range of Aven Nelson's phacelia. As a result, no portions of the BRSA overlap with the documented geographic and elevation range of the species. Absent in CA Absent in NV
Baja navarretia	<i>Navarretia peninsularis</i>	1B.2	This species occurs in chaparral, sometimes in openings, lower montane coniferous forest, meadows and seeps, and pinyon and juniper woodland, often in mesic areas at elevations from 4,920 to 7,550 feet.	June to August, sometimes as early as May / annual herb	This species occurs at elevations that are higher than those within the BRSA, and no suitable habitat is present within the BRSA. Absent in CA Absent in NV
Barstow woolly sunflower	<i>Eriophyllum mohavense</i>	BLM 1B.2 DRECP	This species occurs in chenopod scrub, Mojavean desert scrub, and playas at elevations from 1,640 to 3,150 feet.	April to May, sometimes as early as March / annual herb	This species has one documented occurrence near the western portion of the BRSA, and suitable habitat for this species is present within the BRSA. However, the single documented occurrence is more than 10 miles from the BRSA, and has not been observed since 1914. The BRSA is outside of this species' geographic range. Absent in CA Absent in NV
Bear Valley checkerbloom	<i>Sidalcea malviflora</i> ssp. <i>Dolosa</i>	1B.2	This species occurs in lower montane coniferous forest, riparian woodland, upper montane coniferous forest, and sometimes in meadows and seeps at elevations from 4,900 to 8,810 feet.	May to August / perennial herb	This species occurs at elevations that are higher than those within the BRSA, and no suitable habitat is present within the BRSA. Absent in CA Absent in NV
Beaver dam breadroot	<i>Pediomelum castoreum</i>	BLM 1B.2	This species occurs in Joshua tree woodland and Mojavean desert scrub, often on sandy substrates and washes, and road cuts at elevations from 2,000 to 5,010 feet.	April to May / perennial herb	Beaver dam breadroot has been observed within 1 mile of the western portion of the BRSA, and suitable habitat for this species is present within the BRSA. Absent in CA Absent in NV
Big Bear Valley woollypod	<i>Astragalus leucolobus</i>	1B.2	This species occurs in rocky soils in pebble plain, lower and upper montane coniferous forests, and pinyon-juniper woodland from 3,600 to 9,500 feet in elevation.	May to July / perennial herb	There is no suitable habitat for this species in the BRSA, and the known range of Big Bear Valley woollypod does not overlap with the BRSA. Absent in CA Absent in NV
Bitter hymenoxys	<i>Hymenoxys odorata</i>	2B.1	This species occurs in riparian scrub and Sonoran desert scrub often in roadsides, open flats, drainages, streambanks, and stream bottoms from 260 to 460 feet in elevation.	February to November / annual herb	Suitable habitat is absent from the BRSA within this species' range. Absent in CA Absent in NV

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Black bog-rush	<i>Schoenus nigricans</i>	2B.2	This species occurs in marshes and swamps, often in alkaline substrates at elevations from 490 to 6,570 feet.	August to September / perennial herb	No suitable habitat for this species is present within the BRSA. Only one of the five documented occurrences of this species is within 5 miles of the BRSA. Absent in CA Absent in NV
Bolander's horkelia	<i>Horkelia bolanderi</i>	1B.2	This species occurs in edges or vernal mesic areas in chaparral, lower montane coniferous forest, meadows and seeps, and valley and foothill grassland between 1,470 and 3,600 feet in elevation.	June to August, sometimes as early as May / perennial herb	Bolander's horkelia is a cismontane species in Southern California, and has never been documented in transmontane locations, where the BRSA is located. Absent in CA Absent in NV
Booth's evening-primrose	<i>Eremothera boothii</i> ssp. <i>boothii</i>	2B.3	This species occurs in Joshua tree woodland, pinyon and juniper woodland at elevations from 2,670 to 7,880 feet.	April to September / annual herb	Booth's evening primrose has been observed within 1 mile of the BRSA, and suitable habitat for this species is present within the BRSA. Absent in CA Absent in NV
Boyd's monardella	<i>Monardella boydii</i>	BLM 1B.2	This species occurs in Mojavean desert scrub, pinyon juniper woodland, riparian scrub, and desert. It is often found in alluvial soils and cracks of bedrock in washes on canyon bottoms and rocky slopes at elevations from 4,590 to 5,420 feet.	August to October / perennial shrub	Although there are nearby occurrences of this species, Boyd's monardella typically occurs approximately 500 feet higher than the BRSA in this general area. As a result, no portion of the BRSA overlaps both the geographic and elevation ranges of this species. Absent in CA Absent in NV
Burro grass	<i>Scleropogon brevifolius</i>	2B.3	This species occurs in Joshua tree woodland and Mojavean desert scrub, often in decomposed granitic soils and open areas at elevations from 4,460 to 4,690 feet.	September to October / perennial stoloniferous herb	Limited suitable habitat for burro grass occurs in portions of the BRSA in Nevada that are above 2,500 feet in elevation. This species has not been documented within 5 miles of the BRSA. Absent in CA Absent in NV
California alkali grass	<i>Puccinellia simplex</i>	1B.2	This species occurs on alkaline, vernal mesic areas; sinks, flats, and lake margins in chenopod scrub; and meadows, seeps, valley foothills, grasslands, and vernal pools at elevations from sea level to 3,060 feet.	March to May / annual herb	The BRSA skirts the perimeter of two alkaline playas located north and west of the community of Lucerne Valley, California. Although suitable habitat of chenopod scrub occurs within the BRSA, this species has specific habitat requirements of wet soils from alkaline sinks, flats, and desert springs. There are no alkaline sinks or desert springs located within the BRSA. Absent in CA Absent in NV
California ayenia	<i>Ayenia compacta</i>	2B.3	California ayenia occurs in sandy and gravelly washes of dry canyons within Mojavean and Sonoran desert scrub between 490 and 3,600 feet in elevation.	March to April / perennial herb	Suitable habitat for California ayenia is present within the BRSA. There is one occurrence of this species within the Fountain Peak quad located approximately 2 miles north of the BRSA in California; however, this occurrence is outside of this species' known geographic range. Absent in CA Absent in NV
California satintail	<i>Imperata brevifolia</i>	2B.1	This species occurs in moist sites of chaparral, coastal sage scrub, and creosote bush scrub plant communities between sea level and 4,000 feet in elevation. It also often occurs in desert canyons or on rocky slopes near seeps, springs, and streams.	September to May / perennial rhizomatous herb	This species is dependent on desert springs of chaparral, coastal sage scrub, and creosote bush scrub. There are no desert springs located within the BRSA. Absent in CA Absent in NV

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Cima milk-vetch	<i>Astragalus cimae</i> var. <i>cimae</i>	1B.2	This species occurs in Great Basin scrub, Joshua tree woodland, and pinyon and juniper woodland, often on clay soils between 2,910 and 6,070 feet in elevation.	April to May / perennial herb	Suitable habitat for Cima milk-vetch is present within the BRSA, but the BRSA is located outside of the species' geographic range. This species is a narrow endemic restricted to areas around the community of Cima, California, which is approximately 16 miles north of the BRSA. Absent in CA Absent in NV
Clark Mountain spurge	<i>Euphorbia extipulata</i> var. <i>extipulata</i>	2B.1	This species occurs in Mojavean desert scrub and sometimes in rocky substrates at elevations from 4,190 to 6,570 feet.	September / annual herb	Although there is suitable habitat for this species in the BRSA, Clark Mountain spurge is known mainly from Clark Mountain in California, which is not within the BRSA. This species has not been documented within 5 miles of the BRSA. Absent in CA Absent in NV
Clokey's cryptantha	<i>Cryptantha clokeyi</i>	1B.2	This species occurs in Mojavean desert scrub at elevations from 2,370 to 4,480 feet.	April / annual herb	This species was observed during the 2016 surveys on a rocky, southwest-facing slope in the Granite Mountains. This area was not resurveyed in 2017. Occurs in CA Absent in NV
Coves' cassia	<i>Senna covesii</i>	2B.2	This species occurs in Sonoran desert scrub, sometimes in sandy substrates at elevations from 930 to 3,520 feet. This species is often associated with small, dry wash features with sandy substrates.	March to June / perennial herb	This species was observed during the 2016 surveys in Eldorado Valley. The same plants documented in those surveys were observed in the 2017 surveys, but were not re-mapped. Absent in CA Occurs in NV
Creamy blazing star	<i>Mentzelia tridentata</i>	1B.3	This species occurs in Mojavean desert scrub, often on rocky, gravelly, sandy substrates at elevations from 2,290 to 3,860 feet.	March to May / annual herb	Suitable habitat for creamy blazing star is present within the BRSA, and this species has been documented in the California Natural Diversity Database (CNDDDB) within 5 miles of the BRSA. Absent in CA Absent in NV
Cushenbury buckwheat	<i>Eriogonum ovalifolium</i> var. <i>vineum</i>	BLM FE 1B.1	This species occurs in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland, often on carbonate substrates at elevations from 4,590 to 8,010 feet.	May to August / perennial herb	This species is a San Bernardino Mountains endemic, and no portion of the BRSA overlaps the elevation and geographic ranges of this species. Elevation ranges in the BRSA that are near to where this species could occur are approximately 300 feet lower than where this species has been documented. Absent in CA Absent in NV
Cushenbury milk-vetch	<i>Astragalus albens</i>	BLM FE 1B.1	This species occurs in Joshua tree woodland, pinyon and juniper woodland, and often on carbonate or granitic soils from 3,590 to 6,570 feet in elevation.	March to June / perennial herb	Suitable habitat for this species is present within the BRSA; however, this species is a narrow endemic known only from Cushenbury Canyon in the San Bernardino Mountains. Absent in CA Absent in NV
Cushenbury oxytheca	<i>Acanthoscyphus parishii</i> var. <i>goodmaniana</i>	BLM FE 1B.1	This species occurs in pinyon and juniper woodland; sometimes in carbonate, talus slopes; and often on sandy, carbonate substrates at elevations from 3,990 to 7,800 feet.	May to October / annual herb	This species is a San Bernardino Mountains endemic, and there is no suitable habitat present within the BRSA. Absent in CA Absent in NV

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Darlington's blazing star	<i>Mentzelia puberula</i>	2B.2	This species occurs in Mojavean desert scrub, Sonoran desert scrub, and often on sandy or rocky substrates at elevations from 290 to 4,200 feet.	March to May / perennial herb	Suitable habitat for Darlington's blazing star is present within the BRSA, and there is one occurrence of this species within the Old Dad Mountain quad within 2 miles of the BRSA. Absent in CA Absent in NV
Desert ageratina	<i>Ageratina herbacea</i>	2B.3	This species occurs in pinyon and juniper woodlands and often in rocky substrates at elevations from 5,120 to 6,465 feet.	August to October/ perennial herb	There is low potential for this species at Foshay Pass and within the Dead Mountains northward to the community of Searchlight due to the presence of pinyon and juniper woodlands and rocky substrates. Historic CNDDDB records are known within the Providence Mountains within 1 mile of the BRSA. More recent Calflora records for desert ageratina occur within the New York Mountains. Absent in CA Absent in NV
Desert beardtongue	<i>Penstemon pseudospectabilis</i> ssp. <i>pseudospectabilis</i>	2B.2	This species occurs in Mojavean desert scrub and Sonoran desert scrub, often in sandy washes, and sometimes rocky soils below 6,400 feet in elevation.	January to May / perennial herb	This species has been observed within 5 miles of the BRSA. This species intergrades with <i>P. stephensii</i> in Foshay Pass. Suitable habitat for this species is present within the BRSA. Absent in CA Absent in NV
Desert bedstraw	<i>Galium proliferum</i>	2B.2	This species occurs on rocky, carbonate, and occasionally limestone substrates within Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodlands from 3,900 to 5,350 feet in elevation.	March to June / annual herb	Desert bedstraw has been observed very near the BRSA in the Foshay Pass area, and suitable habitat is present within the BRSA. Absent in CA Absent in NV
Desert cymopterus	<i>Cymopterus deserticola</i>	BLM 1B.2 DRECP	This species occurs in Joshua tree woodland and Mojavean desert scrub, and often on sandy substrates at elevations from 2,060 to 4,930 feet.	March to May / perennial herb	Although suitable habitat for desert cymopterus is present in the BRSA, no extant CNDDDB occurrences of this species have been documented east of Interstate (I-) 15 and therefore, the BRSA would be outside of this species' known geographic range. Absent in CA Absent in NV
Desert green-gentian	<i>Frasera albomarginata</i> var. <i>albomarginata</i>	2B.2	This species occurs in pinyon and juniper woodland, sometimes in rocky or gravelly substrates at elevations from 4,490 to 7,600 feet.	April to June, less commonly from July to September / perennial herb	The BRSA overlaps both the elevation and geographic range of this species for approximately 1 mile through the Foshay Pass area. However, no pinyon and juniper woodland vegetation was noted in the BRSA, and therefore, there is no suitable habitat for this species. Absent in CA Absent in NV
Desert pincushion	<i>Coryphantha chlorantha</i>	2B.1	This species occurs in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland, often on carbonate, gravelly, rocky substrates at elevations from 140 to 5,600 feet.	April to September / perennial stem succulent	Although suitable habitat for desert pincushion is present within the BRSA, the BRSA is located south of the species' range. Absent in CA Absent in NV
Dwarf abutilon	<i>Abutilon parvulum</i>	2B.3	This species occurs in chenopod scrub and sometimes in rocky substrates at elevations from 2,950 to 4,270 feet.	April to May / perennial herb	Suitable habitat (calcareous rocky slopes) for dwarf abutilon are present in limited areas within the BRSA. There is only one recent CNDDDB occurrence of this species within the Fountain Peak quad approximately 2 miles north of the BRSA. Absent in CA Absent in NV

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Emory's crucifixion-thorn	<i>Castela emoryi</i>	2B.2	This species is found in harsh, dry, rocky desert regions, including desert plains and gravelly washes from 290 to 2,380 feet in elevation.	June to July, sometimes blooming as early as April and as late as September or October / perennial deciduous shrub	Emory's crucifixion-thorn has multiple documented occurrences in the vicinity surrounding Pisgah Crater. One of these occurrences is located within 1 mile of the BRSA. Suitable habitat for this species is present within the BRSA. Absent in CA Absent in NV
False buffalo-grass	<i>Munroa squarrosa</i>	2B.2	This species occurs in pinyon and juniper woodland, often in the open on gravelly, sandy, or rocky substrates at elevations from 4,495 to 7,940 feet.	August to November / annual grass	Low potential exists in the BRSA for false buffalo-grass at elevations above 2,000 feet where pinyon and juniper woodland occur east of Fenner Valley. There are no known CNDDDB occurrences for this species within 5 miles of the BRSA. Absent in CA Absent in NV
Forked purple mat	<i>Nama dichotoma var. dichotoma</i>	2B.3	This species occurs in pinyon and juniper woodland, often in granitic or carbonate soils and on limestone slopes or ridges at elevations from 1,900 to 2,200 feet.	September to October / annual herb	Low potential for forked purple mat exists along the alignment south and east of the New York Mountains. There are no known CNDDDB or Calflora occurrences for this species within 5 miles of the BRSA. Absent in CA Absent in NV
Fremont barberry	<i>Berberis fremontii</i>	2B.3	This species occurs in chaparral, Joshua Tree woodland, pinyon and juniper woodland, sometimes on rocky substrates, from 3,750 to 5,650 feet in elevation.	March to May / perennial evergreen shrub	Suitable habitat occurs within the BRSA, and there are nearby occurrences of this species within at least one of the quads in or surrounding the BRSA. However, only two small areas within the BRSA overlap within Fremont barberry's known geographic and elevation ranges. Although rocky substrates are present, suitable habitat of chaparral, pinyon juniper woodlands and Joshua tree woodlands are absent from the Foshay Pass portion of the BRSA. Absent in CA Absent in NV
Glandular ditaxis	<i>Ditaxis claryana</i>	2B.2	This species occurs in Mojavean desert scrub and Sonoran desert scrub, often on sandy substrates at elevations from 360 to 1,675 feet.	October-March / perennial herb	Suitable habitat for glandular ditaxis is present throughout the BRSA. However, this species has no recorded occurrences within 5 miles of the BRSA. The majority of the records for this species are located south of the BRSA. Absent in CA Absent in NV
Golden violet	<i>Viola purpurea ssp. aurea</i>	2B.2	This species occurs in Great Basin scrub, and pinyon and juniper woodland, often on sandy substrates at elevations from 3,280 to 8,210 feet.	April to June / perennial herb	Suitable scrub habitat is present within the BRSA. However, this species has no recent occurrences near the BRSA. The only records of this species in the City of San Bernardino are historic and are located in mountainous areas. Absent in CA Absent in NV
Hairy erioneuron	<i>Erioneuron pilosum</i>	2B.3	This species occurs in pinyon and juniper woodland, sometimes in rocky, sometimes carbonate substrates at elevations from 4,650 to 6,600 feet.	May to June / perennial herb	This species has been documented in the Providence Mountains on calcareous rocks approximately 4 miles north of Foshay Pass. However, there is limited to suitable habitat for this species located in the BRSA in Foshay Pass. Absent in CA Absent in NV

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Hall's monardella	<i>Monardella macrantha</i> ssp. <i>hallii</i>	1B.3	This species occurs in broad-leaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland at elevations from 2,390 to 7,210 feet.	June to October / perennial rhizomatous herb	No suitable habitat for this species is present within the BRSA, and the BRSA is not within this species' known geographic range. Absent in CA Absent in NV
Harwood's eriastrum	<i>Eriastrum harwoodii</i>	1B.2	This species occurs in desert dune habitats between 410 and 3,010 feet in elevation.	March to June / annual herb	Harwood's eriastrum has been documented approximately 0.25 mile from the BRSA, and there is suitable habitat present within the BRSA. Absent in CA Absent in NV
Hot springs fimbriatylis	<i>Fimbristylis thermalis</i>	2B.2	This species occurs in meadows and seeps, sometimes in alkaline, and near hot springs at elevations from 360 to 4,400 feet.	July to September / perennial rhizomatous herb	The nearest occurrence for hot springs fimbriatylis is more than 10 miles south of the BRSA, and there is no suitable habitat for this species within the BRSA. Absent in CA Absent in NV
Howe's hedgehog cactus	<i>Echinocereus engelmannii</i> var. <i>howei</i>	1B.1	This species occurs in Mojavean desert scrub at elevations from 1,410 to 2,550 feet.	April to May / perennial stem succulent	Howe's hedgehog cactus has been observed within 5 miles of the BRSA, and suitable habitat for this species is present within the BRSA. However, the occurrences documented within 5 miles of the BRSA were confirmed to be invalid due to misidentification. Absent in CA Absent in NV
Jackass-clover	<i>Wislizenia refracta</i> ssp. <i>refracta</i>	2B.2	This species occurs in Mojavean desert scrub, Sonoran desert scrub, and alkaline flats, often in vernal moist seeps, silty depressions, sandy washes, roadsides, dunes, or playas at elevations from 1,935 to 3,215 feet.	April to November / annual herb	Jackass-clover occurs throughout the Mojave Desert, but has not been observed within 5 miles of the BRSA. Limited habitat occurs in the BRSA. Absent in CA Absent in NV
Johnson's bee-hive cactus	<i>Sclerocactus johnsonii</i>	2B.2	This species occurs in granite substrates of Mojavean desert scrub at elevations from 1,600 to 4,000 feet.	April to May / perennial stem succulent	Johnson's bee-hive cactus individuals were observed during the 2016 surveys in Eldorado Valley and Piute Valley. These areas were not resurveyed in 2017. Absent in CA Occurs in NV
Juniper sulphur-flowered buckwheat	<i>Eriogonum umbellatum</i> var. <i>juniporinum</i>	2B.3	This species occurs in Mojavean desert scrub and pinyon and juniper woodland at elevations from 4,260 to 8,210 feet.	July to October / perennial herb	Although there is suitable Mohavean desert scrub habitat, there is a lack of pinyon juniper woodlands within the BRSA. Juniper sulphur-flowered buckwheat occurs nearest to the BRSA at elevations that are approximately 200 feet higher than the BRSA. Absent in CA Absent in NV
Knotted rush	<i>Juncus nodosus</i>	2B.3	This species occurs on meadows and seeps, less commonly in mesic areas, marshes and swamps, and occasionally on lake margins from 90 to 6,500 feet in elevation.	July to September / perennial rhizomatous herb	Although this species has been documented approximately 4 miles south of the BRSA, there is no suitable habitat for this species in the BRSA. Absent in CA Absent in NV
Latimer's woodland-gilia	<i>Saltugilia latimeri</i>	1B.2	This species occurs in chaparral, Mojavean desert scrub, pinyon and juniper woodland; often on rocky, sandy or granitic areas; and sometimes washes at elevations from 1,310 to 6,240 feet.	March to June / annual herb	Latimer's woodland-gilia has been documented approximately 1.5 miles outside of the BRSA, and there is suitable habitat in the form of Mojavean desert scrub within the BRSA. Absent in CA Absent in NV

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Lemon lily	<i>Lilium parryi</i>	1B.2	This species occurs in mesic soils in lower montane coniferous forest, meadows and seeps, riparian forest, and upper montane coniferous forest between 4,000 and 9,000 feet in elevation.	July to August / perennial bulbiferous herb	No suitable habitat for this species is present within the BRSA, and the BRSA is not within this species' known geographic range. Absent in CA Absent in NV
Limestone beardtongue	<i>Penstemon calcareus</i>	1B.3	This species occurs in Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland, and often on carbonate, rocky substrates at elevations from 3,490 to 6,700 feet.	April to May / perennial herb	Limestone beardtongue has been observed very near the BRSA in the Foshay Pass area. Limited amounts of suitable limestone habitat are present within the BRSA. Absent in CA Absent in NV
Lobed ground-cherry	<i>Physalis lobata</i>	2B.3	This species occurs in Mojavean desert scrub, sometimes in decomposed granite, and on playas at elevations from 1,640 to 2,630 feet.	September to January, sometimes as early as May / perennial herb	Lobed ground-cherry has five documented occurrences, all of which are located more than 5 miles from the BRSA. Suitable habitat for this species is present within the BRSA. Absent in CA Absent in NV
Long-stem evening-primrose	<i>Oenothera longissima</i>	2B.2	This species occurs in Mojavean desert scrub, pinyon and juniper woodland, often on seasonally mesic areas at elevations from 3,280 to 5,580 feet.	July to September / annual / perennial herb	This species has been observed near the BRSA, and suitable habitat for this species is present within the BRSA. Absent in CA Absent in NV
Matted cholla	<i>Grusonia parishii</i>	2B.2	This species occurs in Joshua tree woodland, Mojavean desert scrub, and Sonoran desert scrub, often on sandy, rocky substrates at elevations from 980 to 5,010 feet.	May to June, sometimes as late as July / perennial stem succulent	Parish's club-cholla was observed near the northern end of the BRSA in Eldorado Valley in Nevada in 2016. Additional individuals were documented in the same general vicinity during the 2017 special-status plant surveys. Absent CA Occurs in NV
Mojave Desert plum	<i>Prunus eremophila</i>	1B.2	This species occurs in Mojavean desert scrub, often on granitic or rhyolitic areas, and usually washes at elevations from 3,190 to 3,860 feet.	March to April / perennial deciduous shrub	Suitable habitat for Mojave Desert plum is present within the BRSA, and there are nearby occurrences of the species. However, the elevations for this species do not occur in the BRSA. Absent in CA Absent in NV
Mojave menodora	<i>Menodora spinescens</i> var. <i>mohavensis</i>	BLM 1B.2	This species occurs in Mojavean desert scrub, often on andesite gravel, rocky hillsides, and canyons at elevations from 2,260 to 6,570 feet.	April to May / perennial deciduous shrub	Mojave menodora was observed growing on both sides of the transmission alignment approximately 7.4 miles south of I-40, between the communities of Newberry Springs and Ludlow, California during the 2016 surveys. Additional individuals were documented in the same area in 2017. Occurs in CA Absent in NV
Mojave milkweed	<i>Asclepias nyctaginifolia</i>	2B.1	This species occurs in Mojavean desert scrub, and pinyon and juniper woodland at elevations from 2,870 to 5,580 feet.	May to June / perennial herb	Mojave milkweed was observed during the 2016 surveys in Piute Valley, near the community of Searchlight, Nevada. This area was not surveyed during the 2017 surveys. Absent in CA Occurs in NV

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Mojave monkeyflower	<i>Mimulus mohavensis</i>	BLM 1B.2 DRECP	This species occurs on sandy or gravelly substrates in Joshua tree woodland, Mojavean desert scrub, and washes at elevations from 1,960 to 3,940 feet.	April to June / annual herb	Mojave monkeyflower has been observed approximately 10 miles from the BRSA, and suitable habitat for this species is present within the BRSA. Absent in CA Absent in NV
Mojave tarplant	<i>Deinandra mohavensis</i>	BLM CE 1B.3 DRECP	This species occurs in mesic areas in chaparral, coastal scrub, and riparian scrub, between 2,100 and 5,250 feet in elevation.	June to October, sometimes as early as May and as late as January / annual herb	Suitable habitat for this species is present within the BRSA. However, the one CNDDDB occurrence within 5 miles of the BRSA is presumed extirpated, and all known extant locations of this species are located considerably south of the BRSA in the San Jacinto Mountains and Santa Rosa Mountains. This species was not observed within the BRSA. Absent in CA Absent in NV
Mormon needle grass	<i>Stipa arida</i>	2B.3	This species occurs in pinyon and juniper woodland, and Joshua tree woodland, often on carbonate soils and outcrops from 3,705 to 6,495 feet in elevation.	May to July / perennial grass	This species occurs in pinyon and juniper woodland and Joshua tree woodland, often on carbonate soils and outcrops. Within the BRSA, there is low potential on rocky slopes at elevations above 2,500 feet and east of Foshay Pass. There are no known CNDDDB occurrences within 5 miles of the BRSA. Absent in CA Absent in NV
Narrow-leaved yerba santa	<i>Eriodictyon angustifolium</i>	2B.3	This species occurs in pinyon and juniper woodland from 4,920 to 6,240 feet in elevation.	May to August / perennial evergreen shrub	Narrow-leaved yerba santa was observed in the Providence Mountains during the 2016 surveys. This area was resurveyed in 2017, but it was not during the species' blooming season. Therefore, this species was not observed in 2017. Occurs in CA Absent in NV
Nevada onion	<i>Allium nevadense</i>	2B.3	This species occurs in pinyon and juniper woodland on sandy or gravelly desert slopes from 2,650 to 5,580 feet in elevation.	April to May / perennial bulbiferous herb	No recent occurrences of Nevada onion have been documented near the BRSA. Suitable habitat is present within the BRSA in Foshay Pass. Absent in CA Absent in NV
Nevin's barberry	<i>Berberis nevinii</i>	FE CE 1B.1	Nevin's barberry is a perennial evergreen shrub that occurs in sandy or gravelly substrate in chaparral, cismontane woodland, coastal scrub, and riparian habitats. It is typically found at elevations from 220 to 2,700 feet.	March to June, sometimes as early as February / perennial evergreen shrub	Although there is suitable habitat for Nevin's barberry within the BRSA, all known locations of this species are cismontane. Therefore, the BRSA is not located within the species' range. Absent in CA Absent in NV
Nine-awned pappus grass	<i>Enneapogon desvauxii</i>	2B.2	This species occurs in pinyon and juniper woodland, sometimes in rocky, carbonate substrates at elevations from 4,180 to 5,990 feet.	August to September / perennial herb	Suitable habitat for this species exists within limited areas of the BRSA. However, most occurrences of this species are at higher elevations than those within the BRSA. Absent in CA Absent in NV
Orocopia Mountains spurge	<i>Euphorbia jaegeri</i>	1B.1	This species occurs in rocky hillsides and arroyos, gravelly or rocky crevices (granitic, carbonate, or metamorphic), and Mojavean desert scrub from 1,960 to 2,790 feet in elevation.	October to May / perennial shrub	Although there is suitable habitat for this species in the BRSA, the known range of Orocopia Mountains spurge does not overlap the BRSA. Absent in CA Absent in NV

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Palmer's mariposa lily	<i>Calochortus palmeri</i> var. <i>palmeri</i>	BLM 1B.2	This species is found in vernal moist sites in chaparral, meadows, and lower montane coniferous forest between 2,320 and 7,850 feet in elevation.	April to July / perennial bulbiferous herb	There are no recently documented occurrences for Palmer's mariposa lily within 5 miles of the BRSA. Suitable habitat for this species is absent from the BRSA. Absent in CA Absent in NV
Parish's alkali grass	<i>Puccinellia parishii</i>	BLM 1B.1	This species occurs in meadows and seeps, and sometimes in alkaline springs and seeps at elevations from 2,290 to 3,290 feet.	April to May / annual herb	This species is only known from the Rabbit Springs area in the Lucerne Valley quadrangle. No suitable habitat for this species is present where the BRSA overlaps this quadrangle. Absent in CA Absent in NV
Parish's alumroot	<i>Heuchera parishii</i>	1B.3	This species occurs in alpine boulder and rock field, lower montane coniferous forest, subalpine coniferous forest, and upper montane coniferous forest, often on rocky and sometimes carbonate substrates at elevations from 4,920 to 12,470 feet.	June to August / perennial rhizomatous herb	Parish's alumroot has no documented occurrences within 5 miles of the BRSA. Additionally, the BRSA in the general geographic range of this species does not exceed 3,000 feet in elevation. As a result, no portion of the BRSA is within the geographic or elevation range of Parish's alumroot. Absent in CA Absent in NV
Parish's checkerbloom	<i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	CR 1B.2	This species occurs in chaparral, cismontane woodland, and lower montane coniferous forest at elevations from 3,280 to 8,200 feet.	June to August, sometimes as early as May / perennial herb	Parish's checkerbloom has not been documented within 5 miles of the BRSA. No suitable habitat is present within the BRSA. Absent in CA Absent in NV
Parish's desert-thorn	<i>Lycium parishii</i>	2B.3	This species occurs in coastal scrub and Sonoran desert scrub at elevations from 440 to 3,290 feet.	March to April / perennial shrub	The BRSA is not located within the current known range of Parish's desert-thorn. The species has one documented occurrence located approximately 15 miles south of the BRSA, and it is presumed to be extirpated. Absent in CA Absent in NV
Parish's phacelia	<i>Phacelia parishii</i>	BLM 1B.1 S1	This species occurs in Mojavean desert scrub and playas, often on clay or alkaline substrates at elevations from 1,770 to 3,940 feet.	April to May, sometimes as late as June or July / annual herb	The BRSA is located outside of this species' current geographic range. The occurrence within 5 miles of the BRSA is believed to have been within a playa, but is now considered to be extirpated. The BRSA completely avoids this playa and others in the vicinity. Absent in CA Absent in NV
Parish's popcornflower	<i>Plagiobothrys parishii</i>	1B.1	This species occurs in Great Basin scrub and Joshua tree woodland, often in alkaline, mesic areas at elevations from 2,460 to 4,600 feet.	March to June, sometimes as late as November / annual herb	Parish's popcornflower has been observed within 5 miles of the BRSA. Although suitable habitat of Great Basin scrub and Joshua tree woodland occurs with the BRSA, this species has specific habitat requirements of wet soils from desert springs and mudflats. There are no desert springs or mud-flats located within the BRSA. Absent in CA Absent in NV
Parish's rockcress	<i>Boechera parishii</i>	1B.2	This species occurs on rocky, quartzite on clay, or sometimes carbonate soils in pinyon and juniper woodland and upper montane coniferous forest at elevations from 6,230 to 9,190 feet.	April to May / perennial herb	Suitable habitat for this species is present within the BRSA. However, this species is a narrow endemic known only from the San Bernardino Mountains at elevations much higher than the BRSA. Absent in CA Absent in NV

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Parish's yampah	<i>Perideridia parishii</i> ssp. <i>Parishii</i>	2B.2	This species occurs in lower montane coniferous forest, meadows and seeps, and upper montane coniferous forest at elevations from 4,800 to 9,850 feet.	June to August / perennial herb	Parish's yampah has one documented occurrence within 5 miles of the BRSA, but at elevations higher than those present in the BRSA. In addition, no suitable coniferous habitat for this species is present, and only one area overlaps the geographic and elevation range of Parish's yampah. Absent in CA Absent in NV
Parry's spineflower	<i>Chorizanthe parryi</i> var. <i>parryi</i>	1B.1	Parry's spineflower is an annual herb that occurs in sandy or rocky substrates in openings of chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland habitats. It is typically found at elevations from 900 to 4,010 feet.	April to June / annual herb	No suitable habitat for Parry's spineflower is present within the BRSA. This species occurs in cismontane California, and its range does not overlap with the BRSA. Absent in CA Absent in NV
Parry's spurge	<i>Euphorbia parryi</i>	2B.3	This species occurs in desert dunes and Mojavean desert scrub and sometimes in sandy substrates at elevations from 1,290 to 2,400 feet.	May to November / annual herb	Parry's spurge was observed during the 2017 surveys along the access road to tower M107-T1 along the southern edge of the Kelso Dunes, approximately 4.5 miles west of Kelbaker Road. Occurs in CA Absent in NV
Pink funnel lily	<i>Androstephium</i> <i>breviflorum</i>	2B.2	Small-flowered androstephium occurs in Mojavean desert scrub within bajadas from 720 to 2,630 feet in elevation.	March to April / perennial bulbiferous herb	Pink funnel lily was observed within two locations in the BRSA: Broadwell Valley (east of Pisgah Crater) and in the work areas for mid-line series capacitors 1, 2, and 4 (north of Pisgah Crater). Occurs in CA Absent in NV
Pinyon rockcress	<i>Boechera dispar</i>	2B.3	This species occurs in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland, often on granitic or gravelly soils from 3,930 to 8,340 feet in elevation.	March to June / perennial herb	Pinyon rockcress has been observed within 5 miles of the BRSA, and suitable habitat for this species is present within the BRSA. Carbonate soils (limestone) are located within the BRSA in the western portion of the San Bernardino Mountains. This portion of the BRSA also has suitable pinyon juniper habitat. Absent in CA Absent in NV
Plains bee balm	<i>Monarda pectinata</i>	2B.3	This species occurs in Joshua tree woodland, pinyon and juniper woodland, and often on rocky substrates at elevations from 3,770 to 5,010 feet.	July to September / annual herb	Plains bee balm has not been documented within 5 miles of the BRSA and may be extirpated from San Bernardino County. Additionally, this species typically occurs at elevations higher than those that are present in the BRSA. As a result, no portion of the BRSA overlaps both the geographic and elevation ranges of this species. Absent in CA Absent in NV
Plains flax	<i>Linum puberulum</i>	2B.3	This species occurs in Great Basin scrub, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland at elevations from 3,280 to 8,210 feet.	May to July, sometimes as late as October / perennial herb	The southernmost extent of plains flax in California is the Providence Mountains. The species typically occurs at elevations slightly higher than the BRSA, and it has not been documented within 5 miles of the BRSA. Absent in CA Absent in NV

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Playa milk-vetch	<i>Astragalus allochrous</i> var. <i>playanus</i>	2B.2	This species occurs in Mojavean desert scrub, and sometimes in sandy substrate from 2,620 to 2,630 feet in elevation.	April / perennial herb	This species was observed during the 2016 surveys at a location just outside of the community of Goffs, California. Occurs in CA Absent in NV
Providence Mountains lotus	<i>Acmispon argyraeus</i> var. <i>notitius</i>	1B.3	This species occurs in pinyon and juniper woodland at elevations from 3,930 to 6,570 feet.	May to August / perennial herb	Providence Mountains lotus has been observed within 5 miles of the BRSA in the Foshay Pass area. However, suitable habitat is absent from the BRSA. Absent in CA Absent in NV
Purple-nerve cymopterus	<i>Cymopterus multinervatus</i>	2B.2	This species occurs in Mojavean desert scrub and pinyon and juniper woodland, often on sandy or gravelly substrates at elevations from 2,590 to 5,910 feet.	March to April / perennial herb	Suitable habitat for this species is present within the BRSA near where this species has been documented in the CNDDDB. Absent in CA Absent in NV
Red four o'clock	<i>Mirabilis coccinea</i>	2B.3	This species occurs in pinyon and juniper woodland at elevations from 3,510 to 5,910 feet.	May to July / perennial herb	Suitable habitat is present within the BRSA. However, this species is known from the New York Mountains and Clark Mountains, which are over 16 miles north of the BRSA. Absent CA Absent in NV
Reveal's buckwheat	<i>Eriogonum contiguum</i>	2B.3	This species occurs in Mojavean desert scrub, usually in sandy substrates, including eroded sandy floodplain sediments, at elevations from 90 to 4,340 feet.	March to May, sometimes as early as February and as late as June / annual herb	Suitable habitat for Reveal's buckwheat is present, and this species has been documented near the BRSA in Nevada. Absent in CA Absent in NV
Rosy two-toned beardtongue	<i>Penstemon bicolor</i> ssp. <i>roseus</i>	BLM 1B.1	This species occurs in Joshua tree woodland, Mojavean desert scrub, often on rocky or gravelly substrates, and sometimes in disturbed areas at elevations from 2,290 to 4,930 feet.	May / perennial herb	This species was observed during the 2016 surveys in Eldorado Valley, approximately 2.5 miles west of I-95 along the BRSA. The same plants documented in those surveys were observed in the 2017 surveys and were not re-mapped. Absent in CA Occurs in NV
Rough brickellbush	<i>Brickellia microphylla</i> var. <i>scabra</i>	2B (soon to be listed)	This species occurs on dry and rocky slopes and canyons, often on granitic or limestone substrates.	July to October / shrub	Rough brickellbush has a low potential to occur within the BRSA at Foshay Pass in the Providence Mountains. Historic Calflora records indicate the presence of the species within the Providence Mountains. More recent records are not within 5 miles of the BRSA. Absent in CA Absent in NV
Rough menodora	<i>Menodora scabra</i> var. <i>scabra</i>	2B.3	This species occurs in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland at elevations from 3,930 to 5,910 feet.	May to June / perennial herb	Rough menodora has been observed approximately 8 miles north of the BRSA, and suitable clay/limestone soils are present within the BRSA. Absent in CA Absent in NV
Roughstalk witch grass	<i>Panicum hirticaule</i> ssp. <i>hirticaule</i>	2B.1	This species occurs in Mojavean desert scrub, Sonoran desert scrub, Joshua tree woodland, and desert dunes, often on sandy and silty substrates, and in depressions at elevations from 330 to 4,790 feet.	August to Dec / annual grass	This species has a moderate potential to occur in BRSA near the Colorado River and Dead Mountains in Nevada. This species has not been documented within 5 miles of the BRSA. Absent in CA Absent in NV

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Rusby's desert-mallow	<i>Sphaeralcea rusbyi</i> var. <i>eremicola</i>	1B.2	This species occurs in Joshua tree woodland and Mojavean desert scrub at elevations from 3,190 to 5,400 feet.	March to June / perennial herb	This species was observed during the 2016 surveys in the Providence Mountains. The same plants documented in those surveys were observed in the 2017 surveys and not re-mapped. However, the 2017 botanical survey crew noted that those individuals appeared to be intergrades between <i>S. rusbyi</i> var. <i>eremicola</i> and <i>S. ambigua</i> var. <i>rugosa</i> . Occurs in CA Absent in NV
Sagebrush loeflingia	<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i>	2B.2	This species occurs in desert dunes, Great Basin scrub, and Sonoran desert scrub, often on sandy substrates at elevations from 2,290 to 5,300 feet.	April to May / annual herb	Suitable habitat for this sagebrush loeflingia is present within the BRSA. However, the only recorded occurrence of this species is approximately 7 miles from the BRSA. Absent in CA Absent in NV
Salinas Pass wild-rye	<i>Elymus salina</i>	2B.3	This species occurs in pinyon and juniper woodland, and sometimes in rocky substrates at elevations from 4,420 to 7,010 feet.	May to June / perennial rhizomatous herb	Salina Pass wild rye was found in the Foshay Pass area of the Providence Mountains on both sides of the transmission alignment during the 2016 special-status plant surveys. Additional individuals were observed in the same vicinity in Foshay Pass during the 2017 surveys. Occurs in CA Absent in NV
Salt spring checkerbloom	<i>Sidalcea neomexicana</i>	2B.2	This species occurs in creosote bush scrub, chaparral, yellow pine forest, coastal sage scrub, alkali sink, and wetland-riparian habitats, from 40 to 5,020 feet in elevation.	March to June / perennial herb	There is one occurrence of this species within the Lucerne Valley quad and approximately 2.6 miles south of the BRSA. This occurrence appears to be an outlier from the core population of the species, which is primarily in cismontane locations in Southern California. Although suitable habitat of creosote bush scrub and chaparral occurs with the BRSA, this species has specific habitat requirements of wet soils from alkaline sinks and desert springs. There are no desert springs located within the BRSA. Absent in CA Absent in NV
San Bernardino aster	<i>Symphotrichum defoliatum</i>	1B.2	This species occurs in freshwater marsh within coastal sage scrub and southern oak woodlands between sea level and 6,700 feet in elevation.	July to November / perennial rhizomatous herb	The documented occurrences of San Bernardino aster are more than 10 miles from the BRSA, and the vast majority of these occurrences are in cismontane locations and have not been observed in at least 50 years. Absent in CA Absent in NV
San Bernardino blue grass	<i>Poa atropurpurea</i>	FE 1B.2	This species occurs in meadows and seeps, and sometimes in mesic conditions at elevations from 4,460 to 8,060 feet.	May to July, sometimes blooming as early as April and as late as August / perennial rhizomatous herb	This species is a San Bernardino Mountains endemic, and there is no suitable habitat in the BRSA. Absent in CA Absent in NV
San Bernardino Mountains dudleya	<i>Dudleya abramsii</i> ssp. <i>Affinis</i>	1B.2	This species occurs in pebble plain, pinyon and juniper woodland, and upper montane coniferous forest, often on granitic, quartzite, or carbonate substrates at elevations from 4,100 to 8,540 feet.	April to July / perennial herb	San Bernardino Mountains dudleya has been observed within 5 miles south of the western portion of the BRSA, and suitable habitat for this species is present within the BRSA. Absent in CA Absent in NV

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
San Bernardino Mountains owl's-clover	<i>Castilleja lasiorhyncha</i>	1B.2	This species occurs in mesic soils in chaparral, meadows and seeps, pebble plain, riparian woodland, and upper montane coniferous forest, between 4,260 and 7,900 feet in elevation.	May to August / annual herb (hemiparasitic)	San Bernardino Mountains owl's-clover has been observed within 5 miles of the BRSA. However, no suitable habitat for this species is present within the BRSA. Absent in CA Absent in NV
Sand evening-primrose	<i>Chylismia arenaria</i>	2B.2	This species occurs in Sonoran desert scrub, often on sandy or rocky substrates at elevations from 165 to 1,740 feet.	March to April and November to May / annual or perennial herb	This species has not been documented in the CNDDDB within 5 miles of the BRSA. However, suitable habitat within the range of this species occurs east of State Route 95 between the Dead Mountains and community of Searchlight, Nevada. Absent in CA Absent in NV
Santa Ana River woollystar	<i>Eriastrum densifolium</i> ssp. <i>sanctorum</i>	FE CE 1B.1	This species occurs in chaparral, coastal scrub, sometimes in alluvial fan, and often on sandy or gravelly substrates at elevations from 290 to 2,010 feet.	April to September / perennial herb	No suitable habitat for this species is present, and the BRSA does not overlap the known geographic range of this species. Absent in CA Absent in NV
Scaly cloak fern	<i>Astrolepis cochisensis</i> ssp. <i>Cochisensis</i>	2B.3	This species occurs in Joshua tree woodland, pinyon and juniper woodland, and often on carbonate substrates at elevations from 2,950 to 5,910 feet.	April to October / perennial rhizomatous herb	Scaly cloak fern has been observed within 5 miles of the BRSA in the Foshay Pass area. The limestone substrates that support this species are only present in limited quantities in the BRSA. Absent in CA Absent in NV
Scrub lotus	<i>Acmispon argyraeus</i> var. <i>multicaulis</i>	BLM 1B.3	This species occurs in pinyon and juniper woodland, and sometimes in granitic substrates at elevations from 3,930 to 4,930 feet.	April to June / perennial herb	There is no suitable habitat for this species in the BRSA, and the known geographic range does not overlap the BRSA. Absent in CA Absent in NV
Shockley's rockcress	<i>Boechera shockleyi</i>	2B.2	This species occurs in pinyon and juniper woodland, on carbonate or quartzite substrates from 2,870 to 7,580 feet in elevation.	May to June / perennial herb	Shockley's rockcress has been observed within 5 miles south of the BRSA, but no suitable habitat for this species is present within the BRSA. In addition, the nearest CNDDDB occurrence has no date, the location is described as "very generalized," and the nearest record in the CNPS Inventory of Rare and Endangered Plants of California is more than 10 miles south of the BRSA. Absent in CA Absent in NV
Short-joint beavertail	<i>Opuntia basilaris</i> var. <i>brachyclada</i>	BLM 1B.2	This species occurs in chaparral, Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland at elevations from 1,390 to 5,910 feet.	April to June, less commonly in August / perennial stem succulent	This species was observed during the 2016 surveys in the foothills west of the Mojave River along the BRSA, south of the City of Hesperia, California. Occurs in CA Absent in NV
Short-sepaled lewisia	<i>Lewisia brachycalyx</i>	2B.2	This species occurs in lower montane coniferous forest, meadows and seeps, and often in mesic areas at elevations from 4,490 to 7,550 feet.	February to June, sometimes as late as October / perennial herb	This species is known only from cismontane California; its range does not overlap with the BRSA. In addition, no suitable habitat is present within the BRSA. Absent in CA Absent in NV

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Silver-haired ivesia	<i>Ivesia argyrocoma</i> var. <i>argyrocoma</i>	1B.2	This species occurs in meadows and seeps, sometimes in alkaline, pebble plain, and upper montane coniferous forest at elevations from 4,790 to 9,720 feet.	June to August / perennial herb	Silver-haired ivesia has documented occurrences within at least one of the quads in or surrounding the BRSA. However, the BRSA in the generalized geographic range of this species does not exceed 3,000 feet in elevation. As a result, no portion of the BRSA is within the geographic or elevation range of silver-haired ivesia. Absent in CA Absent in NV
Singlewhorl burrobrush	<i>Ambrosia monogyra</i>	2B.2	This species occurs in chaparral and Sonoran desert scrub, often in sandy substrates below 1,600 feet in elevation.	August to November / perennial shrub	This species has no documented occurrences within 5 miles of the BRSA, and suitable habitat is present. However, all occurrences are more than 30 years old, and all occurrences of this species are from cismontane California. There are no documented occurrences north or east of the San Bernardino Mountains, where the BRSA is located. Absent in CA Absent in NV
Sky-blue phacelia	<i>Phacelia coerulea</i>	2B.3	This species occurs in Mojavean desert scrub, and pinyon and juniper woodland at elevations from 4,590 to 6,570 feet.	April to May / annual herb	There is suitable habitat within the BRSA for this species, and it has a low potential to occur in Nevada. However, the BRSA does not exceed 3,000 feet in elevation within the known geographic range of sky-blue phacelia. As a result, no areas of the BRSA overlap both the geographic and elevation ranges of the species. Absent in CA Absent in NV
Slender cottonheads	<i>Nemacaulis denudata</i> var. <i>gracilis</i>	2B.2	This species occurs in coastal dunes, desert dunes, and Sonoran desert scrub at elevations from 160 feet below sea level to 1,320 feet.	April to May, sometimes as early as March / annual herb	Slender cottonheads was observed in the 2016 BRSA along the southern edge of the Kelso Dunes. The same plants documented in those surveys were observed in the 2017 surveys, but were not re-mapped. Occurs in CA Absent in NV
Slender-horned spineflower	<i>Dodecahema leptoceras</i>	FE CE 1B.1	This species is an annual herb that occurs in sandy substrates in chaparral, cismontane woodland, and alluvial fan coastal scrub habitats. It is typically found at elevations from 650 to 2,500 feet.	April to June / annual herb	No suitable habitat for this species is present, and the BRSA does not overlap the known geographic range of this species. Absent in CA Absent in NV
Small-flowered bird's-beak	<i>Cordylanthus parviflorus</i>	2B.3	This species occurs in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland at elevations from 2,290 to 7,220 feet.	August to October / annual herb (hemiparasitic)	Suitable habitat for small-flowered bird's-beak is present within the BRSA, but this species is known only to occur north of the BRSA. There is a low potential for this species to occur at Foshay Pass, in Fenner Valley, and possibly near Homer Mountain. Absent in CA Absent in NV
Small-flowered sand-verbena	<i>Tripterocalyx micranthus</i>	2B.3	This species occurs in desert dunes, Mojavean desert scrub, and sometimes in sandy substrates at elevations from 1,800 to 2,810 feet.	April to May / perennial herb	Small-flowered sand-verbena is limited in California to the Kelso Dunes. Suitable (i.e., sandy) habitat is present within the BRSA, and the BRSA is adjacent to the Kelso Dunes. However, no sand dune habitat is present within the BRSA near the only known occurrences of this species. Absent in CA Absent in NV

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Smooth tarplant	<i>Centromadia pungens</i> ssp. <i>Laevis</i>	1B.1	This species occurs in chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland, often on alkaline substrates at elevations from sea level to 2,100 feet.	April to September / annual herb	This species has documented occurrences near the BRSA, and suitable habitat is present within the BRSA. However, the nearest occurrence is more than 20 years old, and all occurrences of this species are from cismontane California. There are no occurrences north or east of the San Bernardino Mountains, where the BRSA is located. Absent in CA Absent in NV
Sonoran maiden fern	<i>Thelypteris puberula</i> var. <i>sonorensis</i>	2B.2	This species occurs in meadows and seeps and sometimes in streams at elevations from 160 to 2,010 feet.	January to September / perennial rhizomatous herb	Sonoran maiden fern has one occurrence near the BRSA. However, this occurrence is more than 13 miles south of the BRSA, and suitable habitat for this species is absent. Absent in CA Absent in NV
Southern jewelflower	<i>Streptanthus campestris</i>	1B.3	This species occurs in chaparral, lower montane coniferous forest, and pinyon and juniper woodland, often on rocky substrates at elevations from 2,950 to 7,550 feet.	May to July, sometimes blooming as early as April / perennial herb	Southern jewelflower has been observed near the BRSA, but no suitable habitat for this species is present within the BRSA. The nearest occurrence is more than 5 miles south of the BRSA. Absent in CA Absent in NV
Southern mountain buckwheat	<i>Eriogonum kennedyi</i> var. <i>austromontanum</i>	FT 1B.2	This species occurs within lower montane coniferous forest on gravelly soils or in pebble plains at elevations from 5,800 to 9,500 feet.	June to September / perennial herb	This species is a San Bernardino Mountains endemic, and there is no suitable habitat present within the BRSA. Absent in CA Absent in NV
Southern Mountains skullcap	<i>Scutellaria bolanderi</i> ssp. <i>Austromontana</i>	1B.2	This species occurs in chaparral, cismontane woodland, lower montane coniferous forest, and often in mesic areas at elevations from 1,390 to 6,570 feet.	June to August / perennial rhizomatous herb	Southern Mountains skullcap has only one documented occurrence in the CNDDDB within 5 miles of the westernmost portion of the BRSA. A small area of suitable habitat for this species is present within the BRSA where it crosses Summit Valley Road. Absent in CA Absent in NV
Spearleaf	<i>Matelea parvifolia</i>	2B.3	This species occurs in Mojavean desert scrub and Sonoran desert scrub, often on rocky substrates at elevations from 1,440 to 3,600 feet.	March to May / perennial herb	The nearest occurrence is located over 7 miles north of the BRSA. Suitable habitat for spearleaf is present within the BRSA on rocky, east-facing slopes east of the Providence Mountains. Absent in CA Absent in NV
Spiny cliff-brake	<i>Pellaea truncata</i>	2B.3	This species occurs in pinyon and juniper woodland, sometimes in volcanic or granitic, rocky substrates at elevations from 3,930 to 7,060 feet.	April to June / perennial rhizomatous herb	Spiny cliff-brake was mapped on the north-facing slopes of Foshay Pass in the Providence Mountains during the 2016 surveys. This area was resurveyed in 2017, but it was not during the species' blooming season. Therefore, this species was not observed in 2017. Occurs in CA Absent in NV
Spiny-hair blazing star	<i>Mentzelia tricuspis</i>	2B.1	This species occurs in Mojavean desert scrub, often on sandy, gravelly, slopes, and washes at elevations from 490 to 4,200 feet.	March to May / annual herb	Spiny-hair blazing star was documented during the 2016 surveys near the community of Laughlin, Nevada. This location was not resurveyed in 2017. Absent in CA Occurs in NV

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Stephens' beardtongue	<i>Penstemon stephensii</i>	BLM 1B.3	This species occurs on carbonate, and rocky substrates in Mojavean desert scrub, and pinyon juniper woodland at elevations from 3,800 to 6,070 feet.	April to June / perennial herb	Suitable habitat exists for this species, and it has been documented within 5 miles of the BRSA. Absent in CA Absent in NV
Sticky ringstem	<i>Anulocaulis leiosolenus</i> var. <i>leiosolenus</i>	BLM	Sticky ringstem is restricted to gypsum outcrops, rolling hills, and terraces within Mojave desert scrub, primarily creosote bush-white bursage, and salt desert scrub matrix ecological systems. Cryptogamic crusts are strongly associated with the species, with heavy cover at many sites.	Mid-summer and again in October (late spring to early fall)	Although desert scrub communities are present within the BRSA, the degree to which gypsum outcrops and cryptogamic crusts are present within the BRSA is unknown at this time. Based on the known geographic distribution, there is a low potential for sticky ringstem to occur in the BRSA. Absent in CA Absent in NV
Thorny milkwort	<i>Polygala acanthoclada</i>	2B.3	This species occurs in chenopod scrub, Joshua tree woodland, and pinyon and juniper woodland at elevations from 2,490 to 7,500 feet.	May to August / perennial shrub	The nearest occurrences of this species in the eastern Mojave are located approximately 5 miles north of the BRSA. A limited amount of suitable chenopod scrub habitat is present in the BRSA in California. Absent in CA Absent in NV
Thread-leaved brodiaea	<i>Brodiaea filifolia</i>	FT CE 1B.1	Thread-leaved brodiaea is a perennial bulbiferous herb that occurs in herbaceous plant communities, such as valley needlegrass grassland, valley sacaton grassland, non-native grassland, alkali playa, and vernal pool habitats. It is typically found from 80 to 3,680 feet in elevation.	March to June / perennial bulbiferous herb	The BRSA is located outside the range for thread-leaved brodiaea, and suitable habitat is absent from the BRSA. Absent in CA Absent in NV
Three-awned grama	<i>Bouteloua trifida</i>	2B.3	This species occurs in Mojavean desert scrub on carbonate soils, often in crevices from 2,290 to 6,570 feet in elevation.	May to September / perennial herb	Suitable limestone habitat occurs in small quantities within the BRSA. This species has not been documented within 5 miles of the BRSA. Absent in CA Absent in NV
Utah beardtongue	<i>Penstemon utahensis</i>	2B.3	This species occurs in chenopod scrub, Great Basin scrub, Mojavean desert scrub, and pinyon and juniper woodland often on rocky substrates at elevations from 3,490 to 8,210 feet.	April to May / perennial herb	Utah beardtongue has been observed near the BRSA in the Foshay Pass area, where it commonly occurs. Suitable habitat is present within the BRSA for this species. Absent in CA Absent in NV
Utah daisy	<i>Erigeron utahensis</i>	2B.3	This species occurs in pinyon and juniper woodland, primarily in carbonate substrates at elevations from 4,920 to 7,620 feet.	May to June / perennial herb	This species has documented occurrences within 5 miles of the BRSA, and suitable habitat is present within portions of the BRSA in California. However, the documented occurrences are more than 40 years old. Absent in CA Absent in NV
Vanishing wild buckwheat	<i>Eriogonum evanidum</i>	1B.1	This species occurs on sandy or gravelly soils in chaparral, cismontane woodland, lower montane coniferous forest, and pinyon and juniper woodland from 3,600 to 7,300 feet in elevation.	July to October / annual herb	No suitable habitat for this species is present, and the BRSA does not overlap the known geographic range of this species. Absent in CA Absent in NV

Common Name	Scientific Name	Listing Status ¹²	Habitat Preferences, Distribution Information, and Additional Notes	Flowering Phenology/ Life Form	Potential to Occur
Violet twining snapdragon	<i>Maurandella antirrhiniflora</i>	2B.3	This species occurs in Joshua tree woodland, and Mojavean desert scrub, often on carbonate substrates at elevations from 2,490 to 5,010 feet.	April to May / perennial herb	Suitable limestone habitat for this species exists within limited portions of the BRSA, and it has been documented within 5 miles of the BRSA. Absent in CA Absent in NV
White-bracted spineflower	<i>Chorizanthe xanti</i> var. <i>leucotheca</i>	BLM 1B.2	This species occurs in Mojavean and Sonoran desert scrub habitats from 980 to 3,940 feet in elevation.	April to June / annual herb	White-bracted spineflower has been observed within 5 miles of the BRSA. However, the BRSA is outside of this species' geographic range. Absent in CA Absent in NV
White-margined beardtongue	<i>Penstemon albomarginatus</i>	BLM 1B.1	This species occurs in fine alluvial sand in a wide canyon within a creosote bush scrub community between 2,090 and 3,500 feet in elevation.	March to May sometimes as late as June / perennial herb	Suitable sandy habitat for white-margined beardtongue is located throughout the BRSA, including within areas around Pisgah Substation and the nearby transmission towers where this species has been documented in the past. Absent in CA Absent in NV
Woolly tidestromia	<i>Tidestromia lanuginosa</i>	2B (soon to be listed)	This species occurs in gravelly to sandy soils on slopes and gravelly plains in pinyon-juniper woodland at elevations up to 3,900 feet.	August to November / annual herb	Woolly tidestromia has a low potential to occur within the BRSA through Fenner Valley, where gravelly plains exist. This species has not been documented within 5 miles of the BRSA. Absent in CA Absent in NV

Sources: CNPS 2017, CDFW 2018a, CDFW 2018c, NNHP 2018

Table 10: Special-Status Plant Species Observed within the BRSA

Common Name	Scientific Name	Listing Status ¹³		Approximate Number of Plants Identified	
		California	Nevada	California	Nevada
Abrams' spurge	<i>Euphorbia abramsiana</i>	2B.2	none	32	0
Appressed muhly	<i>Muhlenbergia appressa</i>	2B.2	none	327	0
Clokey's cryptantha	<i>Cryptantha clokeyi</i>	1B.2	none	122	0
Coves' cassia	<i>Senna covesii</i>	2B.2	none	10	288 ¹⁴
Johnson's bee-hive cactus	<i>Sclerocactus johnsonii</i>	2B.2	none	0	25 ¹⁴
Matted cholla	<i>Grusonia parishii</i>	2B.2	none	226	175 ¹⁴
Mojave menodora	<i>Menodora spinescens</i> var. <i>mohavensis</i>	BLM 1B.2	none	1,659	0
Mojave milkweed	<i>Asclepias nyctaginifolia</i>	2B.1	none	5	72 ¹⁴
Narrow-leaved yerba santa	<i>Eriodictyon angustifolium</i>	2B.3	none	99	0
Parry's spurge	<i>Euphorbia parryi</i>	2B.3	none	12	0
Pink funnel lily	<i>Androstephium breviflorum</i>	2B.2	none	365	0
Playa milk-vetch	<i>Astragalus allochrous</i> var. <i>playanus</i>	2B.2	none	1	0
Rosy two-toned beardtongue	<i>Penstemon bicolor</i> ssp. <i>roseus</i>	BLM 1B.2	S3	8	4

¹³ Explanation of listing status codes:

BLM species:

-BLM: species considered to be "sensitive" by the BLM in California (none of the species observed have a BLM sensitive listing in Nevada)

CNPS CRPRs:

-1B: Plants rare, threatened, or endangered in California and elsewhere
 -2B: Plants rare, threatened, or endangered in California, but more common elsewhere

Threat Ranks:

-1: Seriously threatened in California (over 80 percent of occurrences threatened; high degree and immediacy of threat)
 -2: Moderately threatened in California (20 to 80 percent of occurrences threatened; moderate degree and immediacy of threat)
 -3: Not very threatened in California (less than 20 percent of occurrences threatened; low degree and immediacy of threat or no current threats known)

Nevada listing code:

-S3: State-listed as Vulnerable

¹⁴ These species do not carry a special status listing in the states where they were documented.

Common Name	Scientific Name	Listing Status ¹³		Approximate Number of Plants Identified	
		California	Nevada	California	Nevada
Rusby's desert-mallow	<i>Sphaeralcea rusbyi</i> var. <i>eremicola</i>	1B.2	none	2,145	4
Salina Pass wild-rye	<i>Elymus salina</i>	2B.3	none	1,098	0
Short-jointed beavertail	<i>Opuntia basilaris</i> var. <i>brachyclada</i>	BLM 1B.2	none	122	0
Slender cottonheads	<i>Nemacaulis denudata</i> var. <i>gracilis</i>	2B.2	none	22	0
Spiny cliff-brake	<i>Pellaea truncata</i>	2B.3	none	25	0
Spiny-hair blazing star	<i>Mentzelia tricuspis</i>	2B.1	none	1	19 ¹⁴

5.3 SPECIAL-STATUS WILDLIFE SPECIES

5.3.0 Background Research Results

Based on the literature and database review, 44 special-status wildlife species were identified to have the potential to occur within the BRSA. These species' names, their listing status, life history, known locations, and a brief assessment of their potential to occur within the BRSA are detailed in Table 11: Special-Status Wildlife with the Potential to Occur within the BRSA. CNDDDB occurrences within 5 miles of the BRSA are depicted in Figure 4: CNDDDB Special-Status Wildlife Occurrences Map in Attachment A: Figures. NNHP occurrences within 5 miles of the BRSA are presented in Figure 3: NNHP Special-Status Wildlife Occurrences Map in Attachment A: Figures.

These species have ranges that fall significantly outside of the BRSA, have only occurred historically within a small portion of the BRSA, or occur in habitats that are not present within the BRSA.

- Two species are present: desert tortoise and desert bighorn sheep
- Seven species are likely to occur: American badger, banded Gila monster, Bendire's thrasher, golden eagle, Mojave fringe-toed lizard, pallid bat, and western burrowing owl
- The remaining 35 species are unlikely to occur within the BRSA

5.3.1 Species Present in the BRSA

Desert Tortoise

Desert tortoise is an FT, CT, and Nevada TR species and is found throughout the Mojave Desert in California, Arizona, Nevada, and Utah. Desert tortoise can be found from below sea level to 7,300 feet elevation, but its optimum range is from 1,000 to 3,000 feet. It inhabits creosote scrub, creosote bursage, shadscale scrub, and Joshua tree woodlands in the BRSA. Desert tortoise also forages on both native and non-native grasses, the presence of which may indicate a higher concentration of individuals. This species is often found in close proximity to washes and arroyos, where forage is more abundant. Adults of this species have also been known to locally migrate from their natal dens and between dens to more favorable locations. Because desert tortoise is den-dwelling, substrate is also an important habitat feature and usually falls within well-drained, sandy loams that are loose enough to burrow, but does not easily collapse. In the Mojave Desert, a surface of igneous pebbles or a veneer of desert pavement may obscure sandy loam soils. Desert tortoises often excavate their own larger burrows for shelter during winter hibernation. When active, individuals may use smaller burrows, pallets, or caliche caves, associated with the walls of washes. This species may also rest under work vehicles that offer shade during the warmer parts of the day.

Desert tortoise faces pressure from habitat degradation and expanding off-highway vehicle use in formerly remote desert areas. Habitat for desert tortoise can be found throughout the majority of the BRSA. Numerous recently documented CNDDDB and NNHP occurrence records exist within 5 miles of the BRSA. A majority of these occurrences are documented within 0.25 mile of the BRSA. All records are presumed to be extant. The BRSA also crosses approximately 194 acres of USFWS-designated critical habitat, as presented in Figure 5: Desert Tortoise Critical Habitat Map in Attachment A: Figures. The majority of this habitat is located adjacent to the Eldorado-Mohave and

Lugo-Mohave 500 kV Transmission Lines, although there is a large section of critical habitat on the north side of the Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines near the unincorporated community of Newberry Springs. Desert tortoise was observed on multiple occasions throughout the BRSA. One adult female was observed foraging on upland vegetation above Devil's Playground Wash, south of the Kelso Dunes. Another individual was observed in Clipper Valley.

Fourteen live desert tortoise and 373 instances of desert tortoise sign—including 246 burrows, 93 scat occurrences, 25 carcasses or shell fragments, and nine other types of sign (e.g., tracks, drinking depressions, and courtship rings)—were observed during protocol-level surveys in October 2016. Live tortoise observations were concentrated in Eldorado Valley, Piute Valley, Fenner Valley, the Newberry Mountains, and the Kelso Dunes. Desert tortoise sign was observed throughout the central and eastern portions of the BRSA. One burrow was observed in the far western portion of the BRSA, near the Mojave River. Additionally, several tortoises were incidentally observed in the BRSA in California and Nevada during 2017 special-status plant surveys. The results of the protocol-level desert tortoise surveys are discussed in detail in Attachment E: Desert Tortoise Pre-Project Survey Report and Attachment F: Addendum to the Desert Tortoise Pre-Project Survey Report and Attachment G: Second Addendum to the Desert Tortoise Pre-Project Survey Report.

Desert Bighorn Sheep

Desert bighorn sheep is a BLM and FP species that inhabits rocky, steep, and open terrain encompassing plateaus and springs. This species occurs in a large number of desert mountain ranges in eastern California, much of Nevada, northwestern Arizona, New Mexico, southern Utah, southern Colorado, and Mexico. Desert bighorn sheep graze on a wide variety of plants, especially green, succulent grasses and forbs. This species is often found in herds that are extremely dependent on their proximity to water during the hot summer and may disperse during the winter. Desert bighorn sheep are susceptible to livestock diseases, and entire herds may be lost to disease. This species is also threatened by habitat loss and competition from feral ungulates and livestock for forage.

Habitat for desert bighorn sheep is limited to desert mountain ranges, including the Providence Mountains, the Dead Mountains, and the Newberry Mountains. Desert bighorn sheep was observed in 2016 within the BRSA in Nevada. In California, this species has two recent CNDDDB occurrence records within 0.25 mile of the BRSA. One of these occurrences identified a stable herd consisting of 30 individuals and another herd consisting of five individuals. In addition, a stable herd of 25 individuals was documented within 1 mile and a herd of 30 individuals was documented within 5 miles of the BRSA. All herds are presumed to be extant. A pair of desert bighorn sheep was observed within the BRSA in the Newberry Mountains in Nevada near Nevada SR-163 during botanical surveys in May 2016.

Table 11: Special-Status Wildlife with the Potential to Occur within the BRSA

Common Name	Scientific Name	Listing Status ¹⁵	Habitat and Life History	Known Locations	Potential to Occur
Amphibians					
Arroyo toad	<i>Anaxyrus californicus</i>	FE SSC	Arroyo toad is found between Monterey County and Baja California, Mexico; and it inhabits sandy riverbanks, washes, and arroyos, especially in riparian areas. Habitat for this species may include mule fat (<i>Baccharis salicifolia</i>), willow (<i>Salix</i> spp.), cottonwood (<i>Populus</i> spp.), sycamores (<i>Platanus racemosa</i>), and/or coast live oak (<i>Quercus agrifolia</i>). Arroyo toad has very specialized habitat needs, which include exposed sandy, stable streambanks for burrowing; scattered vegetation for shelter; and quiet water or pools free of predatory fishes with sandy or gravel bottoms without silt for breeding.	Arroyo toad has multiple recently documented occurrence records within 5 miles of the BRSA. This species has no recent or historic NNHP occurrence records within 5 miles of the BRSA. However, the BRSA is outside the known range of the species.	Critical habitat for arroyo toad is designated by the USFWS approximately 1.5 miles south of the BRSA in California. However, limited suitable habitat for this species is present within the BRSA. This species does not occur in Nevada. Recent CNDDDB records of this species are documented within 5 miles of the BRSA. Unlikely to Occur in California (CA) Unlikely to Occur in Nevada (NV)
Tehachapi slender salamander	<i>Batrachoseps stebbinsi</i>	BLM CT DRECP	Tehachapi slender salamander is endemic to California and reported to occur only in Kern County, typically at an elevation range of 2,500 to 8,300 feet. This species inhabits moist canyons and ravines in oak and mixed woodlands. Eggs are likely laid terrestrially, on moist substrates under surface objects (e.g., pieces of bark), or underground.	Tehachapi slender salamander has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence for this species is located approximately 83 miles northwest of the western portion of the BRSA in the Tehachapi Mountain range. This species was included for analysis in this document due to its inclusion in the DRECP.	The BRSA is located outside of the range of Tehachapi slender salamander. No suitable habitat is present within the BRSA for this species. Unlikely to Occur in CA Unlikely to Occur in NV
Reptiles					
Banded Gila monster	<i>Heloderma suspectum cinctum</i>	BLM SSC PR	Banded Gila monster inhabits rocky areas in desert scrub, semi-desert grassland, lower mountain slopes, rocky bajadas, canyon bottoms, and arroyos from sea level to over 4,000 feet in elevation. This species is also often associated with riparian areas. Banded Gila monster occurs in eastern Riverside County and San Bernardino County in California, as well as Clark County in Nevada.	Banded Gila monster has one historic CNDDDB occurrence record within 1 mile of the BRSA and numerous recent and historic occurrence records within 5 miles of the BRSA. This species has multiple historic NNHP occurrence records within 0.25 mile and 5 miles of the BRSA.	A portion of the BRSA is located within the range of the banded Gila monster, and suitable habitat is present within the Dead Mountains in California and the McCollough Range in Nevada. Banded Gila monster also occurs within the Mojave National Preserve, which intersects the eastern portion of the BRSA within California. This species has been documented within 0.25 mile of the BRSA in Nevada. Likely to Occur in CA Unlikely to Occur in NV

¹⁵ Explanation of federal and State listing codes:

Federal listing codes:

- FE: Federally Endangered Species
- FT: Federally Threatened Species
- BLM: BLM Sensitive Species
- BGEPA: Bald and Golden Eagle Protection Act
- PT: Proposed Threatened Species
- DRECP: DRECP Covered Species

California listing codes:

- CE: State-listed as Endangered
- CCE: Candidate for State Listing as Endangered
- CT: State-listed as Threatened
- FP: Fully protected species
- SSC: Species of Special Concern

Nevada listing codes:

- EB: Endangered Birds
- PR: Protected Reptile
- EF: Endangered Fish
- SM: Sensitive Mammal
- TR: Threatened Reptile
- PM: Protected Mammal

Common Name	Scientific Name	Listing Status ¹⁵	Habitat and Life History	Known Locations	Potential to Occur
Blainville's horned lizard	<i>Phrynosoma blainvillii</i>	BLM SSC	Blainville's horned lizard is found in the Sierra Nevada foothills from Butte County to Kern County and throughout the central and southern California coast. It occurs in valley-foothill hardwood, conifer woodland, riparian woodland, pine-cypress woodland, juniper woodland, and annual grassland habitats. This species inhabits open country, especially sandy areas, washes, floodplains, and wind-blown deposits. It typically forages on the ground in open areas, usually between shrubs. Blainville's horned lizard forages mainly on ants, especially harvester ants (<i>Pogonomyrmex</i> spp.). It is typically found at elevations up to 6,000 feet.	Blainville's horned lizard has numerous historic and recent documented CNDDDB occurrence records within 1 and 5 miles of the BRSA. This species has no recent or historic NNHP occurrence records within 5 miles of the BRSA.	Although CNDDDB records of Blainville's horned lizard are documented within 5 miles of the BRSA in California, a majority of the BRSA is located outside of the range of this species, and limited suitable habitat is present in California. The BRSA in Nevada is not located within the range of this species. Unlikely to Occur in CA Unlikely to Occur in NV
Desert rosy boa	<i>Lichanura orcutti</i> (= <i>Lichanura trivirgata gracia</i>)	PR	Desert rosy boa occurs from Southern California and western and southern Arizona, south to the tip of Baja California, and to southern Sonora, Mexico. This species is adapted to a diversity of habitats including desert, arid scrub, brushland, sandy plains, rocky slopes, and chaparral-covered foothills; and occurs at elevations from sea level to 6,800 feet.	Desert rosy boa has one recent NNHP occurrence record within 5 miles of the BRSA in Nevada, and no recent or historic CNDDDB occurrence records within 5 miles of the BRSA.	The BRSA is located within the range of desert rosy boa in California and Nevada, and suitable habitat is present throughout the BRSA. This species has one recent NNHP occurrence record within 5 miles of the BRSA (in the Newberry Mountains of Nevada) and no recent or historic CNDDDB occurrence records within 5 miles of the BRSA. Unlikely to Occur in California Unlikely to Occur in Nevada
Desert tortoise	<i>Gopherus agassizii</i>	FT CT TR DRECP	Desert tortoise inhabits a variety of habitats, including sandy flats, rocky foothills, alluvial fans, washes, and canyons with sandy or gravelly soils. Soils must be loose for den construction, but firm enough that dens do not collapse. Desert tortoise occurs at elevations ranging from below sea level to 7,300 feet, but most optimal habitat exists between 1,000 and 3,000 feet. This species ranges from southwestern Utah and southern Nevada to the south through southeastern California and southwestern Arizona into northern Mexico.	Desert tortoise has numerous recently documented CNDDDB and NNHP occurrence records within 5 miles of the BRSA. A majority of these occurrences are documented within 0.25 mile of the BRSA.	Critical habitat designated by the USFWS for desert tortoise is present in approximately 194 acres of the BRSA. Fourteen live desert tortoises were observed within the BRSA during protocol-level surveys in October 2016. These observations were documented in Clipper Valley, the Dead Mountains, and in the vicinity of the Kelso Dunes. All tortoises were observed north of I-40. This species also has numerous recent NNHP occurrence records within 0.25 mile of the BRSA. Occurs in CA Occurs in NV
Flat-tailed horned lizard	<i>Phrynosoma mcallii</i>	BLM SSC DRECP	Flat-tailed horned lizard is found throughout central Riverside, eastern San Diego, and Imperial counties. This species is most likely to occur in areas of creosote bush and scrub habitats, and is found throughout desert scrub, wash, succulent shrub, and alkali scrub habitats. Fine sand is a critical habitat element for this species, as it burrows into the sand to avoid predators and extreme temperatures. Ants are the most commonly foraged food item of this species.	Flat-tailed horned lizard has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species is located approximately 53 miles southeast of the BRSA in the Coachella Valley. This species was included for analysis in this document due to its inclusion in the DRECP.	Flat-tailed horned lizard occurs primarily throughout the Coachella Valley, Salton Sea, and throughout the Sonoran Desert. The BRSA is located outside of the range of flat-tailed horned lizard in California and Nevada. Unlikely to Occur in CA Unlikely to Occur in NV
Mojave fringe-toed lizard	<i>Uma scoparia</i>	BLM SSC	Mojave fringe-toed lizard is a habitat specialist that occupies only areas with windblown (aeolian) sand, including both large and small dunes, margins of dry lakebeds and washes, and isolated pockets against hillsides. This species is endemic to the deserts of Los Angeles, Riverside, and San Bernardino Counties in California and La Paz County in Arizona.	Mojave fringe-toed lizard has numerous recently documented CNDDDB occurrence records within 0.25 and one mile of the BRSA. This species has no recent or historic NNHP occurrence records within 5 miles of the BRSA.	The BRSA is located within suitable habitat for Mojave fringe-toed lizard in California, including the Kelso Dunes. Additionally, this species has been documented in the CNDDDB within 0.25 mile of the BRSA. The BRSA is not located within the range of this species in Nevada. Likely to Occur in CA Unlikely to Occur in NV

Common Name	Scientific Name	Listing Status ¹⁵	Habitat and Life History	Known Locations	Potential to Occur
Two-striped garter snake	<i>Thamnophis hammondi</i>	BLM SSC	Two-striped garter snake occurs in coastal California, from the City of Salinas to northwest Baja California. This species is highly aquatic and is found in or near permanent freshwater, often along streams with rocky beds and riparian growth. Two-striped garter snake can be found at elevations from sea level to 7,000 feet.	Two-striped garter snake has several recently documented CNDDDB occurrence records within 5 miles of the BRSA. This species has no recent or historic NNHP occurrence records within 5 miles of the BRSA.	The documented occurrences of two-striped garter snake are localized to creeks within the San Bernardino National Forest, which the BRSA does not overlap. The BRSA in Nevada is not located within the range of this species. Additionally, areas with permanent freshwater are not located within the vicinity of the BRSA, with the exception of the Colorado River. Unlikely to Occur in CA Unlikely to Occur in NV
Western pond turtle	<i>Emys marmorata</i>	BLM SSC	This species is found throughout California west of the Sierra-Cascade crest. It is absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. It occurs in aquatic habitat with permanent or nearly permanent water in a wide variety of habitat types. Western pond turtle requires basking sites within aquatic habitat, such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks. This species is typically found at elevations below 4,700 feet.	Western pond turtle has one recently documented CNDDDB occurrence record within 5 miles of the BRSA. This species has no recent or historic NNHP occurrence records within 5 miles of the BRSA.	A small portion of the BRSA is located within the range of western pond turtle. However, no suitable aquatic habitat or nesting habitat for this species is present within the BRSA in California or Nevada. Unlikely to Occur in CA Unlikely to Occur in NV
Fish					
Bonytail chub	<i>Gila elegans</i>	FE CE EF	The bonytail chub is endemic to the Colorado River Basin, but was extirpated from most of its historic range. Limited information is available on the life history of this species. It appears to favor main-stem rivers, usually in or near deep swift water, in flowing pools and eddies just outside the main current. It also has been found in reservoirs. Spawning occurs over rocky substrates. Flooded bottomland habitats appear to be important growth and conditioning areas, particularly as nursery habitats for young. Since 1990, wild bonytail chub has been documented only in Lake Mohave and Lake Havasu.	Bonytail chub has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species is located approximately 13 miles east of the easternmost portion of the BRSA in Nevada in Lake Mohave. This species was included for analysis in this document due to its inclusion in the DRECP and the IPaC species list.	Bonytail chub is thought to be extirpated from California. The BRSA does not overlap this species' current range in Nevada, and no suitable aquatic habitat is present in the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Desert pupfish	<i>Cyprinodon macularius</i>	FE CE DRECP	Desert pupfish occurs in desert springs, marshes, and tributary streams of the lower Gila and Colorado River drainages in Arizona, California, and Mexico. This species is highly adaptable to fluctuating water temperatures and salinity, and favors warm, calm waters.	Desert pupfish has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species is located approximately 103 miles southeast of the BRSA. Desert pupfish was included for analysis in this document due to its inclusion in the DRECP.	The BRSA is not located within the range of this species in California or Nevada. No suitable habitat for this species is present in the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Mohave tui chub	<i>Siphateles bicolor mohavensis</i>	FE CE FP	The Mohave tui chub occurs in alkaline, mineralized waters, and is endemic to the Mojave River basin. This species historically occurred in deep pools, ponds, or slough-like areas of the Mojave River. However, it is currently found in only a few highly modified refuge sites within San Bernardino County, California, including ponds at Soda Springs within the Mojave National Preserve, Naval Air Weapons Station China Lake, the Desert Research Station near the community of Hinkley, and the Barstow Station in the city of Barstow.	Mohave tui chub has two recently documented CNDDDB occurrence records within 1 mile of the BRSA, and one historic documented occurrence within 5 miles of the BRSA. All occurrences were documented within forks of the Mojave River. There are no recent or historic NNHP occurrence records of this species within 5 miles of the BRSA.	Mohave tui chub is currently found only in a few highly modified refuge sites within San Bernardino County, California. The BRSA does not overlap with any of these sites, and no suitable habitat for this species exists within the BRSA. This species does not occur in Nevada. Unlikely to Occur in CA Unlikely to Occur in NV

Common Name	Scientific Name	Listing Status ¹⁵	Habitat and Life History	Known Locations	Potential to Occur
Owens pupfish	<i>Cyprinodon radiosus</i>	FE CE DRECP	Owens pupfish historically occurred in spring pools, sloughs, irrigation ditches, swamps, and flooded pastures in the Owens Valley from Fish Slough in Mono County to Lone Pine in Inyo County. This species is currently restricted to five populations in the Owens Valley. Owens pupfish inhabits warm, clear, shallow water with softer substrates for spawning.	Owens pupfish has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species is located approximately 166 miles northeast of the BRSA in the Owens Valley. Owens pupfish was included for analysis in this document due to its inclusion in the DRECP.	The BRSA does not occur within the range of Owens pupfish in California or Nevada. This species is restricted to five populations in the Owens Valley. No suitable habitat for this species is present in the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Owens tui chub	<i>Siphateles bicolor snyderi</i>	FE CE DRECP	Owens tui chub is endemic to the Owens Basin of Inyo and Mono Counties and inhabits low-velocity waters where well-developed beds of aquatic plants and rocks occur. This species is historically found in Owens Lake, several sites along the Owens River from Long Valley to the community of Lone Pine, tributary streams near the Owens River in Long Valley and Owens Valley, and Fish Slough Ecological Reserve. This species also occurs in irrigation ditches and ponds near the City of Bishop and the communities of Big Pine and Lone Pine.	Owens tui chub has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species is located approximately 160 miles northeast of the BRSA in the Owens Valley. Owens tui chub was included for analysis in this document due to its inclusion in the DRECP.	The BRSA does not occur within the range of the Owens tui chub in California or Nevada. No suitable habitat for this species is present in the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Razorback sucker	<i>Xyrauchen texanus</i>	BLM	Razorback suckers inhabit a wide variety of habitats, including mainstream channels to backwaters of medium and large streams or rivers, preferring to live over sand, mud, or gravel bottoms.	There are no recent or historic CNDDDB or NNHP occurrences for this species documented within 5 miles of the BRSA. This species was included for analysis in this document due to its inclusion on the IPaC species list.	Suitable habitat is absent from the BRSA, and this species is restricted to the Colorado River, which the BRSA does not cross. Additionally, here are no recent or historic CNDDDB or NNHP occurrences for razorback sucker within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Birds					
Bald eagle	<i>Haliaeetus leucocephalus</i>	BLM CE FP BGEPA	Bald eagle occurs throughout North America, near lakes, reservoirs, offshore islands, and some rangelands and coastal wetlands in California. This species usually requires large bodies of water or free-flowing rivers with abundant fish and adjacent snags or other perches. Nests are most frequently found in tall tree stands with less than 40-percent canopy and within 1 mile of a permanent water source. Adult eagles typically return to the same nesting sites, and often to the same nest, year after year.	Bald eagle has two recent CNDDDB occurrence records documented within 5 miles of the BRSA. There are no recent or historic NNHP occurrence records of this species within 5 miles of the BRSA.	Although suitable nesting, foraging, and wintering habitat for the bald eagle is absent from the BRSA. Small amounts of suitable habitat occur in the vicinity of the BRSA in the Mojave River and the Colorado River. Two recent CNDDDB occurrences of this species are documented within 5 miles of the BRSA along the west fork of the Mojave River. Unlikely to Occur in CA Unlikely to Occur in NV
Bendire's thrasher	<i>Toxostoma bendirei</i>	BLM SSC DRECP	Bendire's thrasher inhabits relatively open grassland, desert scrub, shrubland, or woodland with scattered shrubs or trees. This species is generally closely associated with plants in the <i>Yucca</i> and <i>Opuntia</i> genera. This species ranges from a small portion of southeastern California, the most southern tip of Nevada, and into Arizona and Mexico.	Bendire's thrasher has two historic CNDDDB occurrence records documented within 0.25 mile of the BRSA. Numerous recent CNDDDB records are documented within 5 miles of the BRSA. All records are presumed extant. There are no recent or historic NNHP occurrence records of this species within 5 miles of the BRSA.	The BRSA is located within the breeding range of Bendire's thrasher in California and Nevada. Suitable habitat for Bendire's thrasher is present within the BRSA, and numerous recent records are documented within 5 miles of the BRSA. Likely to Occur in CA Unlikely to Occur in NV

Common Name	Scientific Name	Listing Status ¹⁵	Habitat and Life History	Known Locations	Potential to Occur
California black rail	<i>Laterallus jamaicensis coturniculus</i>	BLM FP DRECP	This species is found in saline, brackish, and freshwater emergent wetlands in the San Francisco Bay area, Sacramento-San Joaquin Delta, coastal Southern California in the City of Morro Bay, the Salton Sea, and the lower Colorado River area. This species prefers tidal emergent wetlands characterized by pickleweed (<i>Salicornia virginica</i>) vegetation and is typically found in the high tidal zones. Its nesting season occurs from March to June.	California black rail has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species is located approximately 73 miles southeast of the eastern portion of the BRSA.	The BRSA is located outside of the range of the California black rail, and suitable habitat is absent. There are no recent or historic CNDDDB or NNHP occurrence records of this species within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
California condor	<i>Gymnogyps californianus</i>	FE CE DRECP	California condor was historically found throughout much of the western U.S. Currently, this species is found in three distinct populations: a reintroduced population in Southern and central-coast California, a reintroduced area in the Grand Canyon area of Arizona, and a reintroduced population in Baja California, Mexico. Condors are primarily cavity nesters, and can be found on steep rock formations or in burned-out hollows of coast redwood (<i>Sequoia sempervirens</i>) and giant sequoia trees (<i>Sequoiadendron giganteum</i>).	California condor has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species is located approximately 95 miles west of the western portion of the BRSA in the Tehachapi Mountains. This species was included for analysis in this document due to its inclusion in the DRECP and the IPaC list.	California condor occurs within the Tehachapi Mountains east of I-5 and portions of the Los Padres National Forest west of I-5. The BRSA is located outside of this species' current range in California and Nevada. There are no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Crissal thrasher	<i>Toxostoma crissale</i>	SSC	Crissal thrasher inhabits desert washes, riparian thickets, brushy plains, foothill scrub, or occasionally pinyon-juniper woodlands where there is a shrubby understory. This species ranges from a small portion of southeastern California, the most southern tip of Nevada, and into Arizona and Mexico.	Crissal thrasher has two historic CNDDDB occurrence records documented within 5 miles of the BRSA. There are no recent or historic NNHP occurrence records of this species within 5 miles of the BRSA.	The BRSA is located within the range of Crissal thrasher in California and Nevada. However, limited suitable habitat may be present in the BRSA. No recent or historic CNDDDB or NNHP records were documented within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Gila woodpecker	<i>Melanerpes uropygialis</i>	BLM CE DRECP	Gila woodpecker is a desert species, occurring mainly in desert riparian and desert wash habitats, but also in some orchard-vineyard and urban areas. This species requires suitable sites for nesting cavities, including mature cottonwood trees (<i>Populus</i> sp.), large mesquites or willows, California fan palms (<i>Washingtonia filifera</i>), giant cacti (<i>Carnegiea gigantean</i>), and large snags.	Gila woodpecker has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species is located approximately 9 miles southeast of the eastern portion of the BRSA.	The BRSA is located outside of the range of the Gila woodpecker in California and Nevada. Suitable habitat for this species is absent from the BRSA. There are no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Golden eagle	<i>Aquila chrysaetos</i>	FP BLM DRECP BGEPA	Golden eagle generally inhabits open country, prairies, tundra, open coniferous forest, and barren areas, especially in hilly or mountainous regions. This species typically nests in high locations, and the breeding range extends across the western U.S. into Canada and Mexico.	Golden eagle has two recent CNDDDB occurrence records within 0.25 mile of the BRSA. These records identified a nest in a transmission tower and three inactive nests nearby. A golden eagle pair fledged young from the nest in the transmission tower in 2008. In addition, numerous CNDDDB records identify three nests within 1 mile of the BRSA. All three nests were reported to be in active in 2009 and 2011. Many additional, recent CNDDDB and NNHP occurrence records are documented within 1 and 5 miles of the BRSA.	Suitable foraging and nesting habitat for golden eagle is present within the BRSA in California and Nevada in the form of dry, open areas and transmission towers. This species is documented within 0.25 mile of the BRSA. Likely to Occur in CA Likely to Occur in NV

Common Name	Scientific Name	Listing Status ¹⁵	Habitat and Life History	Known Locations	Potential to Occur
Gray vireo	<i>Vireo vicinior</i>	BLM SSC	Gray vireo inhabits mixed juniper/piñon and oak scrub associations and/or chaparral in hot, arid mountains and high plains scrubland. This species occurs in the mountains and piñon-juniper woodlands of the Mojave Desert.	Gray vireo has three historic CNDDDB occurrence records documented within 5 miles of the BRSA. There are no recent or historic NNHP occurrence records of this species within 5 miles of the BRSA.	The BRSA is located within the breeding range of gray vireo in California and Nevada. Suitable habitat for this species occurs in the mountainous areas of the BRSA in Nevada. No recent or historic CNDDDB or NNHP occurrence records were documented within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Greater sandhill crane	<i>Grus canadensis tabida</i>	BLM CT DRECP	Sandhill crane is primarily found in open grasslands, wet meadows, and freshwater marshes and bogs in the Central Valley, northeastern regions of California, and the southern portion of the Salton Sea. This species is common to agricultural fields during migration. Historically, greater sandhill crane wintered throughout Southern California.	Greater sandhill crane has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species is located approximately 67 miles southeast of the eastern portion of the BRSA.	The BRSA is located outside of the range of greater sandhill crane in California and Nevada. Suitable habitat for this species is absent from the BRSA. There are no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Least Bell's vireo	<i>Vireo bellii pusillus</i>	FE CE DRECP	Least Bell's vireo is a rare and local summer visitor from mid-March to the end of August. This species ranges from sea level in coastal areas to 1,500 feet in the interior areas. Least Bell's vireo breeds locally in willow riparian thickets with good overstory and understory vegetation, preferably where flowing water is present. This species typically inhabits structurally diverse woodlands along watercourses, including oak woodlands, mule fat scrub, and cottonwood-willow forests. Little is known about least Bell vireo's winter habitat, but it is not exclusively dependent on riparian woodland. In winter, least Bell's vireos primarily occur in mesquite scrub vegetation in arroyos, but some also use palms. Breeding typically occurs from late March to late August.	Least Bell's vireo has no recent or historic CNDDDB or NNHP occurrence records documented within 5 miles of the BRSA. There is only one occurrence of least Bell's vireo documented east of the City of Barstow in San Bernardino County, with the majority of occurrences documented west of the San Bernardino Mountains.	The BRSA is located within the breeding range of least Bell's vireo in California and Nevada. This species was not observed during focused surveys in 2016. Limited riparian habitat is present in small, isolated stands within the BRSA in the southwestern portion of San Bernardino County. One small stand of riparian scrub was identified within the Mojave River, and a few small, isolated stands occur within drainages located approximately 5 miles east of the Mojave River. No recent or historic CNDDDB or NNHP records were documented within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Long-eared owl	<i>Asio otus</i>	SSC	Long-eared owl occurs throughout California outside of the Central Valley. This species nests in conifer, oak, riparian, pinyon-juniper, and desert woodlands. It requires open land for prey, dense areas for cover, and old nests or nesting platforms for breeding.	Long-eared owl has no recent CNDDDB occurrence records documented within 5 miles of the BRSA. One historic CNDDDB occurrence record was documented within 1 mile of the BRSA. This species also has one historic CNDDDB occurrence record within 5 miles of the BRSA. There are no recent or historic NNHP occurrence records of this species within 5 miles of the BRSA.	The BRSA is located within the wintering range of long-eared owl in California and Nevada. However, no suitable habitat for this species occurs within the BRSA. No recent CNDDDB or NNHP occurrence records were documented within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Mountain plover	<i>Charadrius montanus</i>	BLM SSC DRECP	Mountain plover occurs in short grass prairie habitats or other habitat that is flat and nearly devoid of vegetation. This species is strongly associated with sites of heavy grazing pressure and is attracted to man-made landscapes (e.g., sod farms and cultivated fields) that mimic the natural habitat associations or sites with grassland characteristics (e.g., alkali flats). In the winter and during migration, mountain plovers typically congregate in flocks of up to 1,200 birds. This species does not breed in California, but it is found in California from September to mid-March, with peak numbers occurring from December through February.	Mountain plover has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species is located approximately 15 miles north of the eastern portion of the BRSA. This species was included for analysis in this document due to its inclusion in the DRECP.	The BRSA is located outside of the range of mountain plover in California and Nevada. Suitable habitat for this species is not present in the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV

Common Name	Scientific Name	Listing Status ¹⁵	Habitat and Life History	Known Locations	Potential to Occur
Peregrine falcon	<i>Falco peregrinus</i>	BLM FP EB	Peregrine falcon utilizes a broad array of habitats, including urban areas. This species nests on cliff faces and other high, vertical surfaces, including skyscrapers in metropolitan areas.	Peregrine falcon has no recent or historic CNDDDB occurrence records within 5 miles of the BRSA. This species has one recent NNHP occurrence within 5 miles of the BRSA.	Marginal nesting habitat (low cliffs) exists in the mountainous areas of the BRSA. Foraging or itinerant individuals may also occur in the vicinity. No recent or historic CNDDDB occurrence records of this species exist within 5 miles of the BRSA. There is one recent NNHP occurrence record within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	FE CE EB DRECP	Southwestern willow flycatcher winters in Mexico, Central America, and northern South America. It usually breeds in patchy to dense riparian habitats along streams or other wetlands, near or adjacent to surface water or in areas underlain by saturated soil. Common tree and shrub species comprising nesting habitat include willows, mule fat, box elder (<i>Acer negundo</i>), stinging nettle (<i>Urtica</i> spp.), blackberry (<i>Rubus</i> spp.), cottonwood (<i>Populus</i> spp.), arrowweed (<i>Tessaria sericea</i>), tamarisk (<i>Tamarix ramosissima</i>), and Russian olive (<i>Eleagnus angustifolia</i>). Breeding sites for this species usually consist of dense vegetation with small openings, open water, or shorter/sparser vegetation, creating a mosaic that is not uniformly dense. In almost all cases, slow-moving or still surface water and/or saturated soil is present at or near the breeding sites during wet years. This species has been found at elevations from sea level to over 8,500 feet, but is primarily found in lower-elevation riparian habitats. This species breeds from mid-May to late August.	Southwestern willow flycatcher has no recent or historic CNDDDB occurrence records documented within 5 miles of the BRSA. This species has one historic NNHP occurrence record located approximately 5.4 miles southeast of the eastern portion of the BRSA. This species was included for analysis in this document due to its inclusion in the DRECP and the IPaC species list.	Southwestern willow flycatcher was not observed during focused surveys in 2016. USFWS-designated critical habitat for this species is located approximately 1.5 miles south of the BRSA in California. Riparian stands documented within the BRSA are very small (less than 0.5 acre in size), and discontinuous. This species has a low potential to occur based on evidence suggesting that it occurs east of the San Bernardino Mountains and only within larger, intact riparian habitats; however, only small, isolated riparian stands occur within the BRSA. One historic occurrence record of this species is located approximately 5.4 miles southeast of the BRSA in Nevada. Unlikely to Occur in CA Unlikely to Occur in NV
Swainson's hawk	<i>Buteo swainsoni</i>	CT	Swainson's hawk breeds in the western U.S. and Canada and winters in South America. This species breeds in trees within mature riparian forests and oak groves, and in mature roadside trees in close proximity to large, open expanses of suitable foraging habitat. Over 85 percent of documented Swainson's hawk nest trees are found in riparian systems. Suitable foraging habitat includes native grassland or lightly grazed dryland pasture, alfalfa and other hay crops, and row crops. Swainson's hawk does not forage in vineyards, orchards, or cotton fields because prey is not available in these areas during most of the breeding season.	Swainson's hawk has one historic CNDDDB occurrence record documented within 0.25 mile of the BRSA and is presumed to be extant. There are no recent or historic NNHP occurrence records of this species within 5 miles of the BRSA.	The BRSA is located within the breeding range of Swainson's hawk in California and Nevada. However, suitable nesting habitat is absent from the BRSA. One historic CNDDDB occurrence record was documented within 0.25 mile of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Tricolored blackbird (Nesting colony)	<i>Agelaius tricolor</i>	CCE BLM SSC DRECP	Tricolored blackbird is a highly colonial species, largely endemic to California and most numerous in the Central Valley region. This species prefers freshwater marsh, swamps, and wetlands with open water.	Tricolored blackbird has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species was documented approximately 19 miles north of the central portion of the BRSA. This species was included for analysis in this document due to its inclusion in the DRECP.	The BRSA is located outside of the range of tricolored blackbird in California and Nevada. Suitable foraging and colonial breeding habitat is absent from the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV

Common Name	Scientific Name	Listing Status ¹⁵	Habitat and Life History	Known Locations	Potential to Occur
Western burrowing owl	<i>Athene cunicularia</i>	SSC DRECP	Western burrowing owl is found in dry, open habitats (e.g., grasslands and prairies with low-growing or no vegetation), where it occupies underground burrows, typically those of the California ground squirrel (<i>Otospermophilus beecheyi</i>). It can also occur in open areas of farmland, levee banks, and other disturbed or managed habitats where burrows or burrow-like refuges (e.g., small-diameter pipes, rock piles with voids, or similar hollow spaces) are present. The species breeds from February 1 through August 30. Young are capable of full flight at six weeks of age and are fed by parents for approximately one year. Western burrowing owl is generally found at elevations from 200 to 5,000 feet.	Western burrowing owl has numerous recent CNDDDB occurrence records within 5 miles of the BRSA. There are no recent or historic NNHP occurrence records of this species within 5 miles of the BRSA.	The BRSA is located within the breeding range of western burrowing owl in California and Nevada. Suitable habitat is present throughout the BRSA, and recent CNDDDB occurrences were documented within 5 miles of the BRSA in California. An active burrow was incidentally observed near the BRSA near the community of Ludlow during special-status plant surveys conducted in the spring of 2016. Likely to Occur in CA Likely to Occur in NV
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	BLM FT CE DRECP	The western subspecies of the yellow-billed cuckoo has disappeared over much of the western U.S. and now occurs as a rare breeder in California, Arizona, New Mexico, and west Texas. It prefers riparian forests in flood bottoms of larger river systems for nesting. Nests are often placed in willows along streams and rivers, with nearby cottonwoods serving as foraging sites. This species requires multi-story habitat for foraging.	Western yellow-billed cuckoo has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species was documented approximately 9 miles southeast of the eastern portion of the BRSA in California. This species was included for analysis in this document due to its inclusion in the DRECP and the IPaC species list.	No suitable habitat for western yellow-billed cuckoos is present in the BRSA in California. The known range of this species occurs within the Nevada portion of the BRSA, but it contains no suitable nesting or foraging habitat. No recent or historic CNDDDB or NNHP occurrence records were documented within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Yellow warbler	<i>Setophaga petechia</i>	SSC	Yellow warbler occurs as a migrant and summer resident in California. This species generally occupies riparian vegetation in close proximity to water along streams and wet meadows. It is often associated with willow and cottonwood trees in riparian areas. Breeding generally occurs from April to late July.	Yellow warbler has one historic CNDDDB occurrence record documented within 0.25 mile of the BRSA. There are no recent or historic NNHP occurrence records of this species within 5 miles of the BRSA.	A portion of the BRSA is located within the breeding range of this species. However, suitable habitat for this species is not present near the BRSA, and this species has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Yuma clapper rail	<i>Rallus obsoletus yumanensis</i> (= <i>Rallus longirostris yumanensis</i>)	FE CT FP DRECP EB	Yuma clapper rail inhabits freshwater and brackish marshes. This species breeds from mid-March to July and requires mature stands of cattail (<i>Typha</i> spp.) and bulrush (<i>Scirpus</i> spp.) for foraging and nesting. Yuma clapper rail occupies portions of Arizona, California, and Nevada. This species has been documented in the Lower Colorado River from the southern Mexico boundary to the upper end of Lake Mead; in the Virgin River in Nevada; in the lower Gila River, from its confluence with the lower Colorado River to the vicinity of the City of Phoenix, Arizona; and in the Imperial Valley/Salton Sea area in California.	Yuma clapper rail has no recent or historic CNDDDB or NNHP occurrence records documented within 5 miles of the BRSA. The closest occurrence of this species is located approximately 18 miles southeast of the easternmost portion of the BRSA. This species was included for analysis in this document due to its inclusion in the DRECP and the IPaC species list.	The BRSA is not located within the range of Yuma clapper rail in California or Nevada. No suitable foraging and breeding habitat for this species is present within the BRSA. In addition, no recent or historic CNDDDB occurrence records are documented within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV

Common Name	Scientific Name	Listing Status ¹⁵	Habitat and Life History	Known Locations	Potential to Occur
Mammals					
American badger	<i>Taxidea taxus</i>	SSC	American badger occurs primarily in grasslands, parklands, farms, and other treeless areas with friable soil and a supply of rodent prey. The species is also found in forest glades and meadows, marshes, brushy areas, hot deserts, and mountain meadows. It is sometimes found at elevations up to 12,000 feet, but is usually found at elevations lower and warmer than those characterized by coniferous forests. American badgers are occasionally found in open chaparral (with less than 50-percent plant cover) and riparian zones. American badgers create burrows for sleeping and concealment, protection from weather, and natal dens. Burrows typically range from 4 to 10 feet in depth and 4 to 6 feet in width. Breeding generally occurs between December and February, and cubs are born between March and April.	American badger has one recent and one historic CNDDDB occurrence record within 5 miles of the BRSA. This species has no NNHP occurrence records within 5 miles of the BRSA.	The BRSA is located within the range of American badger. Suitable habitat for this species occurs throughout the BRSA, and recent occurrences have been documented within 5 miles of the BRSA in California. Likely to Occur in CA Unlikely to Occur in NV
California leaf-nosed bat	<i>Macrotus californicus</i>	BLM SM DRECP	California leaf-nosed bat inhabits desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm oasis habitats. Roost sites for this species include tunnels, rock shelters, mines, caves, buildings, and bridges.	California leaf-nosed bat has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. The closest occurrence of this species is located approximately 15 miles south of the central portion of the BRSA. This species was included for analysis in this document due to its inclusion in the DRECP.	The BRSA is located within the range of this species in California. However, suitable roosting habitat is limited. This species has no recent or historic CNDDDB or NNHP occurrence records within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Desert bighorn sheep	<i>Ovis canadensis nelsoni</i>	BLM FP DRECP	Desert bighorn sheep inhabits rocky, steep, and open terrain encompassing plateaus and springs. This species occurs in a large number of desert mountain ranges in eastern California, much of Nevada, northwestern Arizona, New Mexico, southern Utah, southern Colorado, and Mexico.	Desert bighorn sheep was observed within the BRSA in Nevada. In California, this species has two historic CNDDDB occurrence records within 0.25 mile of the BRSA.	A pair of desert bighorn sheep were observed within the BRSA in the Newberry Mountains in Nevada near SR-163 during botanical surveys in May 2016. Suitable habitat for this species exists in mountainous areas throughout the BRSA in California and Nevada, and recent CNDDDB occurrences exist within 0.25 mile of the BRSA. Likely to Occur in CA Occurs in NV
Mohave ground squirrel	<i>Xerospermophilus mohavensis</i>	BLM CT DRECP	The Mohave ground squirrel occupies all major desert scrub habitats in the western Mojave Desert. This species is generally found in flat to moderately sloped terrain, most frequently in sandy and alluvial soils, but occasionally in gravelly and rocky soils. The Mohave ground squirrel is endemic to the western Mojave Desert, and has been found at elevations as high as 5,600 feet.	Mohave ground squirrel has no recent occurrence records documented within 5 miles of the BRSA. One historic CNDDDB occurrence record exists within 0.25 mile, and three historic occurrence records exist within 5 miles of the BRSA. This species has no recent or historic NNHP occurrence records within 5 miles of the BRSA.	The BRSA is not located in the current range of the Mohave ground squirrel. A small portion of the BRSA crosses the historic range of the species near the community of Lucerne Valley, California. Although Mohave ground squirrel has not been recently documented in this portion of the range, suitable habitat is present within the area. Unlikely to Occur in CA Unlikely to Occur in NV
Pallid bat	<i>Antrozous pallidus</i>	SSC BLM PM DRECP	Pallid bat inhabits deserts, grasslands, shrublands, woodlands, and forests. It is generally found at elevations from 100 to 7,000 feet. It is most commonly found in open, dry habitats with rocky areas for roosting. The species roosts in rocky outcrops, snags, and abandoned man-made structures. Pallid bat mating may occur as early as October and continues through February.	Pallid bat has one recent CNDDDB occurrence record within 5 miles of the BRSA. No NNHP occurrences were recorded within 5 miles of the BRSA.	The BRSA is located within the range of pallid bat in California and Nevada. Suitable habitat for foraging and roosting pallid bats is present within the BRSA. Pallid bat has one recent CNDDDB occurrence record and no recent NNHP occurrence records within 5 miles of the BRSA. Likely to Occur in CA Unlikely to Occur in NV

Common Name	Scientific Name	Listing Status ¹⁵	Habitat and Life History	Known Locations	Potential to Occur
Pallid San Diego pocket mouse	<i>Chaetodipus fallax pallidus</i>	SSC	Pallid San Diego pocket mouse is found in the arid desert border areas of San Diego County; in Riverside County southwest of the City of Palm Springs; in San Bernardino County from the Cactus Flat OHV staging area to the community of Oro Grande; and east to the City of Twentynine Palms. Its elevation range is from sea level to 6,000 feet.	Pallid San Diego pocket mouse has three historic CNDDDB occurrence records documented within 0.25 mile of the BRSA. Three additional historic CNDDDB records were documented within 5 miles of the BRSA. All records are presumed extant. This species has no recent or historic NNHP occurrence records within 5 miles of the BRSA.	A small portion of the western end of the BRSA is located within the range of the pallid San Diego pocket mouse in California. Suitable habitat for pallid San Diego pocket mouse occurs within the BRSA, and historic CNDDDB occurrence records are documented within 0.25 mile of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	BLM SSC SM DRECP	Townsend's big-eared bat is found in montane riparian, desert succulent scrub, and pinyon-juniper habitats in California and Nevada. It is known to roost in mines, caves, and buildings.	Townsend's big-eared bat has four historic occurrence records and one recent CNDDDB occurrence record documented within 5 miles of the BRSA. This species has one recent NNHP occurrence record within 5 miles of the BRSA. All records are presumed extant.	The BRSA is located within the range of this species in California and Nevada. However, limited suitable roosting habitat occurs in the BRSA. This species has two recent occurrence records within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV
Western mastiff bat	<i>Eumops perotis californicus</i>	SSC BLM	Western mastiff bat occupies many open, semi-arid to arid habitats at elevations from 100 to 4,000 feet. These habitats include coniferous and deciduous woodland, coastal scrub, grassland, palm oases, chaparral, desert scrub, and urban habitats. This species primarily roosts in crevices in vertical cliffs—usually granite or consolidated sandstone—and in broken terrain with exposed rock faces. It is also found occasionally in high buildings, trees, and tunnels. Foraging habitat includes broad, open areas in chaparral, coastal scrub, grasslands, floodplains, oak woodland, ponderosa pine forest, dry desert wash, meadows, and agricultural areas. Due to its large size, this species needs vertical faces to drop from in order to take flight. Western mastiff bat nursery roosts can be found in tight rock crevices. Breeding likely occurs from April through September.	Western mastiff bat has one historic CNDDDB occurrence record within 5 miles of the BRSA. This record is presumed to be extant. This species has no recent or historic NNHP occurrence records within 5 miles of the BRSA.	The BRSA is located within the range of western mastiff bat. Potentially suitable roosting habitat occurs in the mountainous areas of the BRSA, and suitable foraging habitat occurs throughout the BRSA. However, no recent CNDDDB or NNHP occurrence records have been documented within 5 miles of the BRSA. Unlikely to Occur in CA Unlikely to Occur in NV

Sources: CDFW 2018a, USFWS 2018a, CDFW 2018c, NNHP 2018.

5.3.2 Species Likely to Occur in the BRSA

American Badger

The American badger is a California SSC that occupies a diversity of habitats, including drier, open stages of most shrub, forest, and herbaceous habitats. The principal requirements of the badger are sufficient food; friable soils; and relatively open, uncultivated ground. It is sometimes found at elevations up to 12,000 feet but it is more common in warmer and drier areas. American badgers are occasionally found in open chaparral (with less than 50-percent plant cover) and riparian zones. American badgers create burrows for sleeping and concealment, protection from weather, and natal dens. Burrows typically range from 4 to 10 feet in depth and 4 to 6 feet in width. Badgers prey primarily on burrowing rodents, such as gophers (*Thomomys* spp.), ground squirrels, and kangaroo rats (*Dipodomys* spp.).

The BRSA is located within the range of the American badger. American badger has one recent and one historic CNDDDB occurrence record within 5 miles of the BRSA. This species has no recent or historic NNHP occurrence records within 5 miles of the BRSA. These records are presumed to be extant. Suitable habitat for this species occurs throughout the BRSA.

Banded Gila Monster

Banded Gila monster is a BLM sensitive species and an SSC in California. Banded Gila monster inhabits rocky crevices and steep canyons associated with high-elevation desert mountain ranges. It utilizes desert washes and associated riparian vegetation for foraging, where it feeds on young mammals, birds, reptiles, and eggs. Although venomous, it is thought that the venom is used only for self-defense, rather than for subduing prey. Banded Gila monster generally winters at more elevated locations on rocky slopes, and spends summers in adjacent valleys or bajadas. Banded Gila monsters face some pressure from habitat loss, due to their restrictive habitat needs.

Habitat for banded Gila monster in the BRSA is limited to desert mountain ranges, including the Providence Mountains in California, and the Dead Mountains, the Newberry Mountains, the McCollough Range, and the Highland Range in Nevada.

Banded Gila monster has one historic CNDDDB occurrence record within 1 mile of the BRSA and numerous recent and historic occurrence records within 5 miles of the BRSA. This species has multiple historic NNHP occurrence records within 0.25 mile and 5 miles of the BRSA. A portion of the BRSA is located within the range of the banded Gila monster, and suitable habitat is present within the Dead Mountains of California and the McCollough Range in Nevada. Banded Gila monster also occurs within the MNP which intersects the eastern portion of the BRSA within California.

Bendire's Thrasher

Bendire's thrasher is a California SSC and a BLM sensitive species that is present in portions of San Bernardino County. This species inhabits open grassland, desert scrub, shrubland, or woodland with scattered trees. It is closely associated with plants of the *Yucca* and *Opuntia* genera, and it selectively occupies areas with higher densities of these plants. Bendire's thrasher typically avoids rocky outcrops or areas with steep slopes, apparently favoring flat areas with densely packed dirt. This species is known to inhabit elevations from 1,900 to 5,800 feet, but mostly occurs between 3,100 and

5,000 feet. Because of its close association with *Yucca* and *Opuntia*, Bendire's thrasher may be threatened by increasing development and removal of these plants in the western Mojave Desert.

Bendire's thrasher has two historic CNDDDB occurrence records documented within 0.25 mile of the BRSA. Numerous recent CNDDDB records are documented within 5 miles of the BRSA. All records are presumed extant. There are no recent or historic NNHP occurrence records of this species within 5 miles of the BRSA. Suitable habitat for Bendire's thrasher occurs within the BRSA in California and Nevada, and numerous recent records are documented within 5 miles of the BRSA.

Golden Eagle

Golden eagle is federally protected under the BGEPA and is also an FP species in California. This species is a large raptor found most commonly in western North America, from Alaska in the north to Mexico in the south. Adults are very large, standing 3 feet tall, with a large, hooked bill. This species is brown, with a golden sheen on its head and golden patches and highlights over its life molt. The golden eagle prefers mountainous or hilly terrain, and hunts over open spaces for small mammals, snakes, birds, or carrion. This species typically nests on rocky cliffs, steep hillsides, tall trees, and other high structures, including transmission towers. Juvenile golden eagles are known to migrate great distances from their natal nests. As adults, seasonal migration is not uniform. This species may vacate hot deserts during the summer months to nest in desert mountains, then return to winter in basin areas. In the desert, an individual's territory may extend as far as 119 square miles. Direct or indirect human activities (e.g., collisions with vehicles, power lines, or other structures; electrocution; gunshot; and poisoning) have been estimated to cause up to 70 percent of recorded golden eagle deaths. Populations are also threatened by habitat degradation and nest disturbance (Kochert et al. 2002).

Golden eagle has two recent CNDDDB occurrence records within 0.25 mile of the BRSA. These records identified a nest in an electric transmission tower in 2008. In addition, numerous CNDDDB records identify three nests within 1 mile of the BRSA. All three nests were reported to be inactive in 2009 and 2011. Many additional CNDDDB and NNHP occurrence records were recently documented within 1 and 5 miles of the BRSA. Suitable foraging and nesting habitat for golden eagle is present within the BRSA in California and Nevada in the form of dry, open areas and transmission towers.

Mojave Fringe-Toed Lizard

Mojave fringe-toed lizard is a California SSC. This species has very specific habitat restrictions. Individuals burrow and nest in fine, loose-packed sand. Mojave fringe-toed lizards are restricted in range to sparsely vegetated, windblown (aeolian) sections of dunes, flats, riverbanks, and washes. This species hibernates and is inactive during extreme cold and heat. Mojave fringe-toed lizards feed primarily on insects and spiders, but have been known to consume flowers as well. Mojave fringe-toed lizard faces pressure from habitat loss, due mostly to its restrictive habitat needs.

Mojave fringe-toed lizard has numerous recently documented CNDDDB occurrence records within 0.25 and 1 mile of the BRSA. This species has no recent or historic NNHP occurrence records within 5 miles of the BRSA. The BRSA is located in suitable habitat for Mojave fringe-

toed lizard in California, especially in the vicinity of the Kelso Dunes. The BRSA is not located within the range of this species in Nevada.

Pallid Bat

Pallid bat is a California SSC and BLM sensitive species that inhabits low desert shrublands, juniper woodlands, grasslands, and cottonwood-riparian zones throughout western North America. It is generally found at elevations between 100 and 7,000 feet. This species needs open, dry areas with rocky areas for roosting. Pallid bat may also roost in abandoned, man-made structures. This species forages mostly on the ground for insects, and is a poor flier when compared to smaller bats. Because of its foraging habits, pallid bat is vulnerable to injury and terrestrial predators, including snakes (Suborder *Serpentes*), cats (Family *Felidae*), coyotes (*Canis latrans*), and raccoons (*Procyon lotor*). Mating occurs as early as October and may continue through April. This species is susceptible to minor disturbances, which may cause a colony to abandon its roost.

The BRSA is located within the range of pallid bat in California and Nevada. Pallid bat has one recent CNDDDB occurrence record within 5 miles of the BRSA. This record is presumed extant. There are no recent or historic NNHP recorded occurrences of this species within 5 miles of the BRSA. The closest known occurrence of this species is located approximately 8.3 miles east of the easternmost portion of the BRSA.

Western Burrowing Owl

The western burrowing owl is a California SSC and is found in dry, open habitats (e.g., grasslands and prairies) with low-growing or no vegetation, where it occupies underground burrows, and typically those of the California ground squirrel. It can also occur in open areas of farmland, levee banks, and other disturbed or managed habitats where burrows or burrow-like refuges (e.g., small-diameter pipes, rock piles with voids, or similar hollow spaces) are present. The species breeds from February 1 through August 30. Young are capable of full flight at six weeks of age and are fed by parents for approximately one year.

Western burrowing owl has numerous recent CNDDDB occurrence records within 5 miles of the BRSA. There are no recent or historic NNHP occurrence records of this species within 5 miles of the BRSA. The BRSA is located within the breeding range of western burrowing owl in California and Nevada. Suitable habitat is present throughout the BRSA, and recent CNDDDB occurrences were documented within 5 miles of the BRSA in California. An active burrow was incidentally observed near the BRSA near the community of Ludlow during special-status plant surveys in the spring of 2016.

5.4 CRITICAL HABITAT

Under the FESA, and to the extent prudent and determinable, the USFWS is required to designate critical habitat for endangered and threatened species (16 U.S.C. § 1533 [a][3]). Critical habitat is defined as areas of land, water, and airspace containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or migration,

feeding, roosting, cover, and shelter. The critical habitat designation delineates all suitable habitat, occupied or not, that is essential to the survival and recovery of the species.

Approximately 194 acres of designated critical habitat for desert tortoise is located within the BRSA, as presented in Figure 4: Desert Tortoise Critical Habitat Map in Attachment A: Figures. Portions of the Ord-Rodman, Fenner, Piute, and Eldorado Critical Habitat Units are within the BRSA.

Specifically, critical habitat for desert tortoise is located along large sections of the Eldorado-Mohave and Lugo-Mohave 500 kV Transmission Lines, as well as a large section north of the Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines near the Rodman Mountains.

Critical habitat for the following six additional species is located within 5 miles of the BRSA:

- Cushenbury buckwheat
- Cushenbury oxytheca
- Arroyo toad
- Razorback sucker
- Bonytail chub
- Southwestern willow flycatcher

5.5 WILDLIFE MIGRATION CORRIDORS

Wildlife corridors are defined as areas that connect suitable habitat for a species in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features (e.g., canyon drainages, ridgelines, or areas with vegetation cover) provide corridors for wildlife travel. Wildlife corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high-population-density areas; and facilitate gene flow between populations. Wildlife corridors are considered sensitive by resource and conservation agencies.

Terrestrial wildlife species tend to travel along natural drainages or stretches of land that simultaneously provide protective cover from predators and a foraging source. Due to the length of the Proposed Project, the BRSA crosses many minor drainages and dry washes. The majority of the BRSA covers remote desert terrain that would allow for relatively uninhibited, local wildlife migrations. Scrub vegetation communities are located within the BRSA, which have direct connectivity to larger stretches of similar habitat. This could provide local migration corridors for birds, mammals, and reptiles while providing foraging opportunities. The BRSA may also cross desert bighorn sheep migration corridors at higher elevations. Desert bighorn sheep require habitat connectivity to move uninhibited from steep and rugged topography used as shelter from predators at higher elevations to water sources and forage habitat at lower elevations.

The Proposed Project is located within the Pacific Flyway, a major north-south avian migratory corridor that extends along the West Coast of North and South America from Alaska to Patagonia, and provides suitable foraging habitat for many resident and migratory avian species. The Pacific Flyway links breeding grounds in the north to more southerly wintering areas, and therefore is utilized by an abundance of bird species during migration. Migratory birds often use wetlands as a stopover during migration. One small wetland area is located within the BRSA and covers approximately 0.24 acre. In addition, Silverwood Lake, located in the San Bernardino

Mountains, is approximately 3.10 miles south of the BRSA. Similarly, the Colorado River is approximately 1.20 miles east of the BRSA at its closest point, near the unincorporated community of Laughlin, Nevada. These open waters may also server as stopovers for migratory birds.

5.6 HABITAT CONSERVATION PLAN/NATURAL COMMUNITY CONSERVATION PLAN

Based on a review of the USFWS Environmental Conservation Online System (USFWS 2018b) and the CDFW NCCP program (CDFW 2018b), it was determined that the Proposed Project crosses the following HCPs and NCCPs:

- West Mojave HCP and CDCAP Ammendment (proposed)
- DRECP (proposed)
- Clark County MSHCP

5.7 AQUATIC RESOURCES

Insignia biologists delineated 588 water features in the BRSA that are potentially under the jurisdiction of the USACE, RWQCB, NDEP, and CDFW. This included 582 ephemeral drainages and five intermittent drainages. In addition, one wetland was delineated, measuring approximately 0.2 acre. No perennial drainages occurred within the BRSA. CDFW-jurisdictional riparian vegetation was also mapped within the BRSA. Table 12: Potential Jurisdictional Waters within the BRSA provides the approximate cumulative acreage of the potentially jurisdictional water features delineated in BRSA.

Table 12: Potential Jurisdictional Waters within the BRSA

Feature Type	Linear Feet	USACE-, RWQCB-, and NDEP- Jurisdictional Area (Acres)	CDFW-Jurisdictional Area (Acres)
Ephemeral Drainages	233,778.7	252.3	296.2
Intermittent Drainages	2,054.0	8.0	8.4
Wetlands	N/A	0.2	0.2
Perennial Drainages	0.0	0.0	0.0
Riparian Vegetation	N/A	N/A ¹⁶	<0.1
Total	235,832.7	260.5	304.8

¹⁶ Riparian vegetation is not under the jurisdiction of the USACE, RWQCB, or NDEP, and therefore is not applicable.

6 – PERMITS AND AUTHORIZATIONS

Several regulatory approvals, authorizations, or permits are anticipated to be required for the Proposed Project, as provided in Table 13: Anticipated Biological Resource Permits and Authorizations. These approvals may include conditions that afford additional protection to species and/or their habitat. In addition to implementing the applicant-proposed measures for the Proposed Project, SCE would comply with all mitigation measures and permit conditions that result from these regulatory reviews and approvals.

Table 13: Anticipated Biological Resource Permits and Authorizations

Agency	Permit/Approval/Consultation	Jurisdiction/Purpose of Permit
Federal		
USACE	CWA Section 404 Nationwide Permit	Temporary or permanent fill of waters of the U.S.
USFWS	FESA Section 7 Consultation (under the 2013 Programmatic Biological Opinion [PBO] for Actions Proposed by the Southern Nevada District BLM Office and the 2017 PBO for Activities in the CDCA)	Construction activities, such as vegetation clearing or removal, which may affect federally listed species or their critical habitat.
California		
CDFW	California Fish and Game Code Section 1602 Streambed Alteration Agreement	Activities that would disturb the bed, bank, or riparian area of a jurisdictional waterbody.
	2081 ITP	Potential incidental take of the State-listed desert tortoise.
SWRCB	CWA Section 401 WQC	Temporary or permanent fill of waters of the State. Activities authorized by federal agencies that may affect State water quality.
Nevada		
NDEP	CWA Section 401 WQC	Temporary or permanent fill of waters of the State. Activities authorized by federal agencies that may affect State water quality.

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