
2010 Rare Plant Survey Report
for the
East County Substation Project

Prepared for:



Prepared by:



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1 – INTRODUCTION

This Rare Plant Survey Report describes the current distribution of rare plant species within the East County (ECO) Substation Project (Proposed Project) area. This report also provides a summary of the Proposed Project, describes the botanical survey methods utilized, and summarizes the results of previous botanical surveys conducted of the Proposed Project area. In addition, a list of rare plant species that could potentially be present and the results of the 2010 rare plant field surveys are provided.

2 – PROJECT SUMMARY

The Proposed Project is located in the southeastern portion of San Diego County, California. An overview of the Proposed Project area is provided in Figure 1: Project Overview Map and Figure 2: USGS Topographical Quadrangle Based Overview Map. The Proposed Project involves the following components:

- Building a new, approximately 58-acre 500/230/138 kilovolt (kV) substation (ECO Substation), with a loop-in from the existing Southwest Powerlink (SWPL) 500 kV transmission line, just south of United States (U.S.) Interstate 8, approximately four miles east of the community of Jacumba
- Rebuilding the existing Boulevard Substation located within the community of Boulevard
- Constructing a new, approximately 13.5-mile-long, 138 kV transmission line between the new ECO Substation and the rebuilt Boulevard Substation

3 – BACKGROUND

An extensive literature search, including a California Natural Diversity Database (CNDDDB) search, and several general biological surveys of the Proposed Project area were conducted in 2008 and 2009 for the preparation of the Proposed Project's Proponent's Environmental Assessment (PEA) for submittal to the California Public Utilities Commission (CPUC). In addition, a focused rare plant survey of the three parcels (approximately 377 acres) on which the ECO Substation and SWPL loop-in structures will be constructed and the area surrounding the existing Boulevard Substation was conducted in the spring of 2008. In the spring of 2009, a second focused rare plant survey was conducted of these three parcels as well as the area surrounding the existing Boulevard Substation and the Boulevard Substation rebuild site. In addition, rare plant surveys were conducted along a 300-foot-wide corridor centered on the proposed transmission line, proposed new access roads, fly yards, pull sites, temporary work areas, staging yards, and areas where existing roads will be widened or re-graded. The results of the 2008 rare plant survey were incorporated into PEA Section 4.4 Biological Resources. A summary of the results of the 2008 and 2009 rare plant survey is provided in this document in Section 5 Previous Rare Plant Surveys.

4 – EXISTING CONDITIONS

The locations of the ECO Substation, SWPL loop-in structures, 138 kV transmission line, and Boulevard Substation rebuild are all in the far southeastern portion of San Diego County, within a desert transition region of Southern California. This area receives an average of 12.67 inches of rainfall per year, with the majority of all precipitation falling between November and May. Rainfall between June and October averages 0.40 inches per month. Precipitation decreases to the east, with the average annual rainfall measuring 2.42 inches per year in Coyote Wells, located approximately 16 miles northeast of the ECO Substation site.

The Proposed Project area is situated from approximately 2,600 feet to over 3,500 feet above mean sea level (msl). All habitats and vegetation communities that are located within the ECO Substation and Boulevard Substation rebuild footprints or crossed by the 138 kV transmission line right-of-way (ROW) are described in the following sections. Plant community descriptions are characterized according to R.F. Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California, California Department of Fish and Game's (CDFG) Guide to Wildlife Habitats in California and California Wildlife Habitat Relationship System, and James Lightner's San Diego County Native Plants.

4.0 VEGETATION COMMUNITIES

Seven natural vegetation communities were determined to occur within the Proposed Project area during the general biological surveys conducted during the preparation of the PEA. These include chamise-redshank chaparral, coastal oak woodland, juniper woodland, mixed desert scrub, riparian scrub, shadscale scrub, and fresh emergent wetland. A description of each plant community and its location within the Proposed Project area follow.

4.0.0 Chamise-Redshank Chaparral

Chamise-redshank chaparral is most common on south- and west-facing slopes with thin soils and little accumulation of organic material. This plant community is typically found in Mediterranean-type climates with annual precipitation of 12 to 15 inches per year and with less than 20 percent of total precipitation occurring in summer. Typical plant species found within chamise-redshank chaparral include chamise (*Adenostoma fasciculatum*), redshank (*Adenostoma sparsifolium*), ceanothus (*Ceanothus* spp.), manzanita (*Arctostaphylos* spp.), laurel sumac (*Rhus laurina*), and sugar bush (*Rhus ovata*). Chamise-redshank chaparral occurs throughout the western portion of the 138 kV transmission line corridor from approximately the Boulevard Substation Rebuild site to steel pole (SP) 52 (with a few small breaks of oak woodland and residential areas) and from SP 63 to SP 66.

4.0.1 Oak Woodland

Oak woodlands are extremely variable with an overstory of deciduous and evergreen hardwoods and an equally variable understory. Oak woodlands occupy a variety of Mediterranean-type climates that vary from north to south and west to east, where precipitation occurs in the milder winter months followed by hot, dry summers.

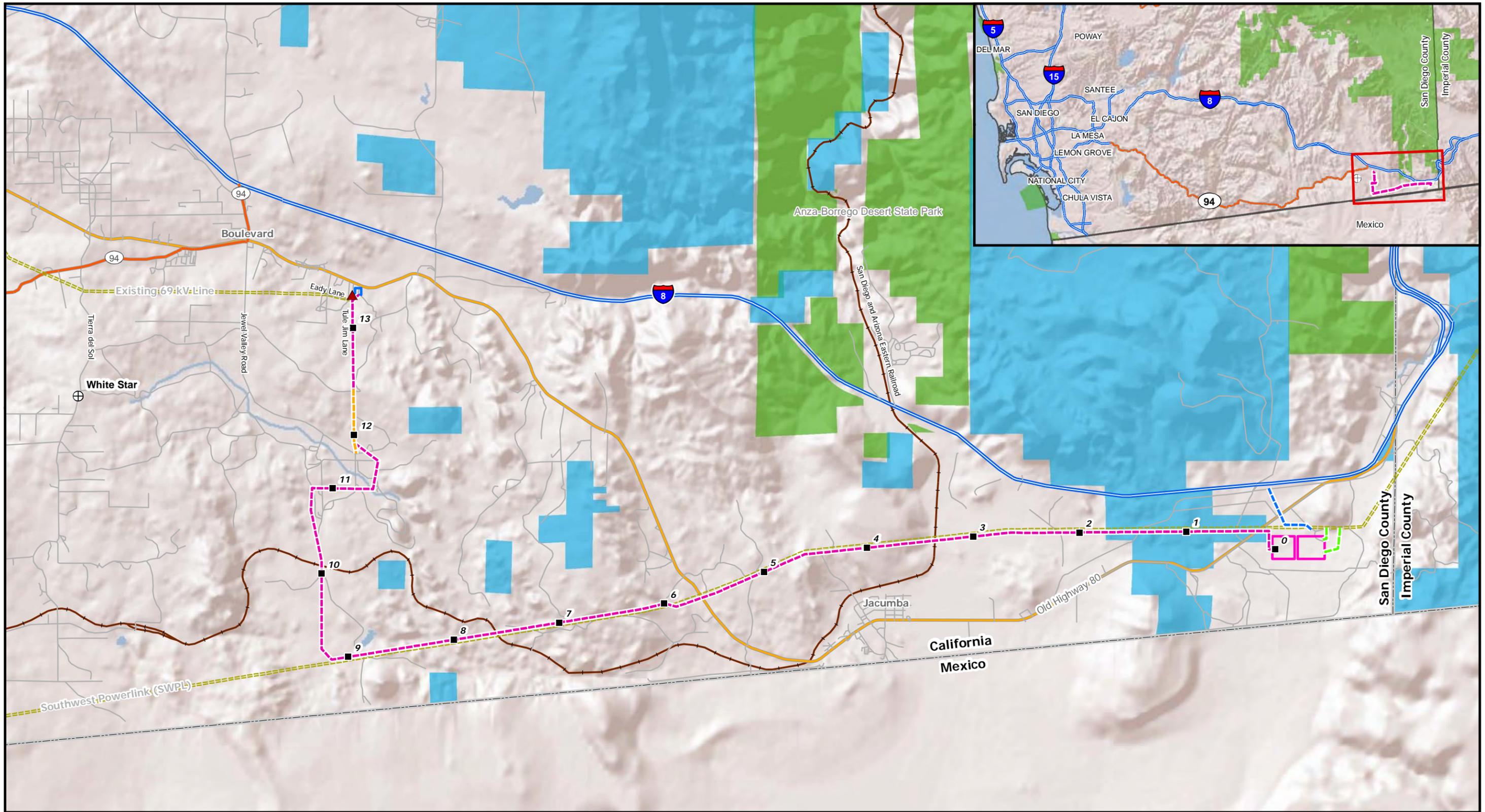


Figure 1: Project Location Map

East County Substation Project



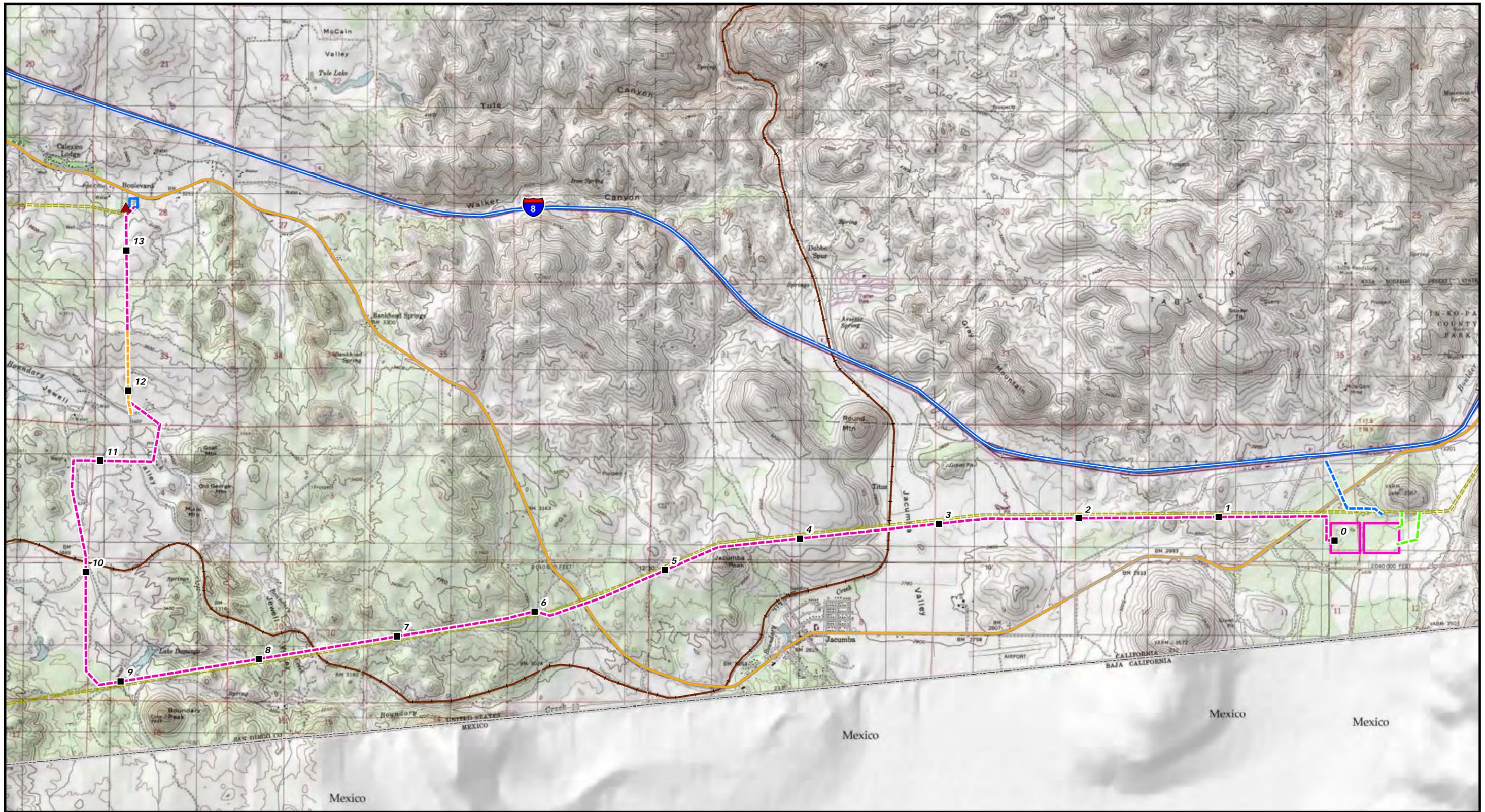


Figure 2: USGS Topographical Quadrangle-Based Overview Map

East County Substation Project

- | | | |
|---|-------------------------------|------------|
| Proposed SWPL Loop-In | Proposed ECO Substation | Interstate |
| Proposed 138 kV Line | Boulevard Substation Rebuild | Highway |
| Proposed 12 kV Temporary Distribution Tap | Existing Boulevard Substation | Local Road |
| 445 Circuit Collocated with 138 kV Line | Proposed 138 kV Line Milepost | Major Road |
| Existing Transmission Line | Communication Facility | Railroad |



1:42,000



Oak woodlands generally occur on moderately to well-drained soils that are moderately deep and have low to medium fertility.

Composition of both overstory and understory of oak woodland varies, and reflects the environmental diversity over which this habitat occurs. On drier, interior sites, such as the Proposed Project area, interior live oak (*Quercus agrifolia oxyadenia*) dominates and contains an understory of chaparral species, grasses, and forbs. Oak woodland occupies four small areas of the transmission line corridor, including near SP 18, SP 16, between SP 45 and SP 46, and between SP 48 and SP 49.

4.0.2 Juniper Woodland

Juniper woodlands are characterized as open to dense aggregations of California junipers (*Juniperus californica*) in the form of tree-like shrubs or small trees. Dispersion of junipers ranges from small clumps to widely scattered single plants. Denser stands are commonly associated with a grassy understory, whereas a shrub understory is found where junipers are more open. Shrub species typically associated with juniper habitats in the Proposed Project area include cholla cactus (*Opuntia* spp.), flat-top buckwheat (*Eriogonum fasciculatum*), Mormon tea (*Ephedra californica*), and desert agave (*Agave deserti*). Typical forbs and grasses include Kentucky bluegrass (*Poa pratensis*), California goldfields (*Lasthenia californica*), and curve-nut combseed (*Pectocarya recurvata*). Juniper woodland occupies areas in the eastern portion of the transmission line corridor, from approximately SP 101 to SP 108, and the western portion of the ECO Substation and SWPL loop-in survey area.

4.0.3 Mixed Desert Scrub

Mixed desert scrub habitats are typically open, scattered assemblages of broadleaved or deciduous microphyll shrubs, usually between 1.5 and 6.5 feet in height. Canopy cover is generally less than 50 percent, often with bare ground between plants. Mixed desert scrub is characterized by relatively evenly spaced, medium- to large-sized shrubs, shrub-sized succulents, and cacti. This habitat type within the Proposed Project area is not dominated by one or a few species; rather, dominance is shared by a number of species, including Mormon tea, cholla cactus, jojoba (*Simmondsia chinensis*), California juniper, and desert agave. Mixed desert scrub occupies vast areas of the western portion of the 138 kV transmission line study area from approximately SP 53 to SP 63, SP 66 to SP 83, and SP 88 to SP 101. In addition, mixed desert scrub occurs throughout the eastern portion of the ECO Substation and SWPL loop-in survey area.

4.0.4 Riparian Scrub

Riparian scrub communities are often comprised of mulefat (*Baccharis salicifolia*) and broom baccharis (*Baccharis sarothroides*) within intermittent stream channels with fairly coarse substrate and moderate depth to the water table. Riparian trees species common to riparian scrub include, willow (*Salix* spp.), Fremont cottonwood (*Populus fremontii*), and California sycamore (*Plantanus racemosa*). The riparian scrub areas located within the Proposed Project area are dominated by mulefat, willows, and catclaw acacia. The understory is composed of primarily rushes (*Carex* sp.), monkeyflower (*Mimulus* sp.), and waterweed (*Baccharis sergiloides*).

Riparian scrub occurs in four locations along the 138 kV transmission line study corridor. Two areas occur near SP 18 and SP 49, where Boundary Creek crosses the ROW. The other two areas occur near SP 46, which is within an unnamed drainage/wash, and east of SP 83, which is within Carrizo Wash.

4.0.5 Shadscale Scrub

Shadscale scrub is comprised of dominant colonies of saltbush (*Atriplex* spp.) with little or no understory. It is often found on poorly drained flats with heavy, somewhat alkaline soil, and adjacent to mixed desert scrub communities. The total cover is often high, with little bare ground between the shrubs. This vegetation community is abundant in desert sinks and flats below 3,500 feet in elevation. Shadscale scrub occurs in the form of a small, pure stand of desert four-winged saltbush (*Atriplex canescens* var. *canescens*). Shadscale scrub occurs in only one location within the Proposed Project area—along the 138 kV transmission line ROW from approximately SP 86 to SP 88.

4.0.6 Fresh Emergent Wetland

Fresh emergent wetland habitats can occur on nearly all exposures and slopes as long as a basin or depression is saturated or at least periodically flooded. However, they are most common on level to gently rolling topography. They are found in various landscape depressions or at the edge of rivers or lakes. Fresh emergent wetlands are characterized by erect, rooted herbaceous hydrophytes. Dominant vegetation generally consists of perennial monocots measuring approximately four feet tall. All emergent wetlands are flooded frequently, enough so that the roots of the vegetation prosper in an anaerobic environment. Vegetation associated with the fresh emergent wetland within the Proposed Project area includes tamarisk (*Tamarisk ramosissima*), honey mesquite (*Prosopis glandulosa* var. *torreyana*), and cheesebush (*Ambrosia salsola*). One fresh emergent wetland is located along the 138 kV transmission line ROW, east of SP 83.

5 – PREVIOUS RARE PLANT SURVEYS

Insignia Environmental botanists Nick Fisher and Roy Buck conducted special-status plant species surveys of the three parcels (approximately 377 acres) on which the ECO Substation site and SWPL loop-in structure sites will be located and the area surrounding the existing Boulevard Substation from April 2 through April 4, 2008. The surveys for special-status plant species were conducted by walking 50- to 100-foot-wide transects of the survey areas. At each survey area, dominant habitat characteristics, general soil characteristics, slope, and aspect were recorded. Surveys were floristic in nature and were conducted during the period when most of the special-status plant species are expected to bloom. The 138 kV transmission line corridor was not surveyed for rare plants in 2008 due to a lack of access during the correct phenological period for the target plant species. One sensitive plant species—Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*)—was observed near the existing Boulevard Substation during the 2008 survey effort.

Jim Rocks, Cynthia Jones Daverin, Margie Mulligan, and Jon Rebman conducted rare plant surveys of the entire Proposed Project area—including the 138 kV transmission line corridor—in

the spring of 2009. Four sensitive plant species—Jacumba milk-vetch, sticky geraea (*Geraea viscida*), slender-leaved ipomopsis (*Ipomopsis tenuifolia*), and desert beauty (*Linanthus bellus*)—were observed within the Proposed Project area during the 2009 survey.

6 – METHODOLOGY

6.0 LITERATURE SEARCH

In preparation for the 2010 rare plant surveys, a target list of sensitive plant species that may occur within or adjacent to the survey area was developed from several sources including Table 4.4-1: Sensitive Species with the Potential to Occur within Section 4.4 Biological Resources of the PEA, and the 2009 SDG&E ECO Substation Project Rare Plant Report prepared by Rocks Biological Consulting. Other sources of information included 2010 searches of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants of California and the CNDDDB. A CNDDDB search of all U.S. Geological Survey (USGS) quadrangle maps within the Proposed Project and surrounding areas was conducted to identify all species occurrence records. The quadrangle maps included Tierra del Sol, Live Oak Springs, Jacumba, In-Ko-Pah Gorge, Mount Laguna, Cameron Corners, Campo, Sombrero Peak, Sweeny Pass, and Carrizo Mountain. The search results within one mile of the Proposed Project area are depicted in Attachment A: CNDDDB Occurrences Maps.

6.1 RARE PLANT SURVEY METHODOLOGY

The 2010 rare plant surveys were conducted of the 377-acre area that encompasses the ECO Substation and the SWPL loop-in structure sites, a 300-foot-wide corridor centered on the transmission line, the Boulevard Substation rebuild site, and the immediate area around the existing Boulevard Substation. In addition, all existing and proposed access roads, pull sites, fly yards, temporary work areas, and staging yards were surveyed. From April 5 through April 12, 2010, Insignia Environmental botanists Jeffry Coward and Roy Buck performed botanical surveys—in accordance with the CNPS Botanical Survey Guidelines—of the 377-acre area that encompasses the ECO Substation and the SWPL loop-in structure sites; a 300-foot-wide corridor centered on the transmission line from SP 4 to SP 108; and all existing and proposed access roads, pull sites, fly yards, temporary work areas, and staging yards. Insignia Environmental botanists Jeffry Coward and Danielle Muir completed the botanical survey of the Proposed Project area from April 19 through April 20, 2010, including a 300-foot-wide corridor centered on the transmission line from SP 1 to SP 4, the existing Boulevard Substation site, and the Boulevard Substation rebuild site. Surveys were conducted during the appropriate phenological period for plants that are known to occur or have a high potential to occur in the Proposed Project area. The surveyors walked 50- to 100-foot-wide transects of all survey areas.

Plant species were identified using The Jepson Manual: Higher Plants of California, The Jepson Desert Manual: Vascular Plants of Southeastern California, and the San Diego County Native Plants List. Plant names follow the Jepson Manual: Higher Plants of California.

All sensitive¹ plant species that were identified during the survey were photographed and recorded in the surveyor's field notes. Geographical positioning system (GPS) waypoints were recorded with a sub-meter Geo-TX Trimble GPS unit at the location of each sensitive plant or population of sensitive plants. In addition, all individual sensitive plants or populations of sensitive plants were flagged in the field using 23-inch-tall white pin flags, which were left in place after the surveys were completed. All rare plant data was then mapped on aerial-based maps.

7 – 2010 RARE PLANT SURVEY RESULTS

7.0 POTENTIAL SENSITIVE PLANT SPECIES

The literature search and previous field surveys produced a list of four sensitive plant species that are known to occur within the Proposed Project area (identified within Table 1: Potential Special-Status Plant Species as Present) and 21 sensitive plant species that could potentially be found within the Proposed Project area. A list of these plants is provided in Table 1: Potential Special-Status Plant Species. Of the 21 species, 11 were considered to have a low potential to occur, nine were considered to have a moderate potential to occur, and one was considered to have a high potential to occur.

7.1 FIELD SURVEY RESULTS

During the 2010 rare plant surveys, a total of four rare plant species—Jacumba milk-vetch, sticky geraea, slender-leaved ipomopsis, and desert beauty—were observed. A complete list of all plant species observed during the 2010 rare plant surveys is provided in Attachment B: 2010 Rare Plant Survey Species List. Maps displaying the locations of sensitive plant species observed during the 2010 rare plant surveys are provided in Attachment C: 2010 Rare Plant Survey Species Occurrences Maps. A brief description of each of the observed rare plant species and their locations is provided in the following subsections.

7.1.0 Jacumba Milk-Vetch

Jacumba milk-vetch is a stout perennial herb within the Fabaceae family, with a relatively small range within the U.S. This species is restricted to eastern and southeastern San Diego County, California, primarily near the communities of Bankhead Springs, Campo, Jacumba, and Boulevard. Jacumba milk-vetch also occurs in Baja California, Mexico. This species typically occurs in sandy or sandy/gravelly openings often within or adjacent to oak woodland, chamise/red shank chaparral, and/or ephemeral drainages. Jacumba milk-vetch occurs between 2,800 feet to 4,600 feet above msl.

¹ Sensitive plant species include any species that are listed as threatened or endangered by the U.S. Fish and Wildlife Service and the CDFG. In addition, any plant species that is a CNPS List 1 or List 2 plant was considered sensitive.

Table 1: Potential Special-Status Plant Species

| Species Name | Listing Status ² | Blooming Period | Potential to Occur |
|--|-----------------------------|-------------------------|--------------------|
| Jacumba milk-vetch (<i>Astragalus douglasii</i> var. <i>perstrictus</i>) | 1B.2 | April through June | Present |
| California ayenia (<i>Ayenia compacta</i>) | 2.3 | March through April | Moderate |
| Pink fairy-duster (<i>Calliandra eriophylla</i>) | 2.3 | January through March | Low |
| Delicate clarkia (<i>Clarkia delicata</i>) | 1B.3 | April through June | Low |
| Dunn's mariposa-lily (<i>Calochortus dunnii</i>) | 1B.2 | April through June | Low |
| Tecate tarplant (<i>Deinandra floribunda</i>) | 1B.2 | August through October | High |
| Mount Laguna aster (<i>Dieteria asteroides</i> var. <i>lagunensis</i>) | 2.1 | July through August | Low |
| Sticky geraea (<i>Geraea viscida</i>) | 2.3 | May through June | Present |
| San Diego gumplant (<i>Grindelia hirsutula</i> var. <i>hallii</i>) | 1B.2 | July through October | Low |
| Curly herissantia (<i>Herissantia crispa</i>) | 2.3 | April through September | Low |

² Explanation of state and federal listing codes

California Native Plant Society lists:

1B.1: Rare, threatened, or endangered in California or elsewhere; seriously threatened in California

1B.2: Rare, threatened, or endangered in California or elsewhere; fairly threatened in California

1B.3: Rare, threatened, or endangered in California or elsewhere; not very threatened in California

2.1: Rare, threatened, or endangered in California only; seriously threatened in California

2.2: Rare, threatened, or endangered in California only; fairly threatened in California

2.3: Rare, threatened, or endangered in California only; not very threatened in California

| Species Name | Listing Status ² | Blooming Period | Potential to Occur |
|--|-----------------------------|-----------------------|--------------------|
| San Diego sunflower (<i>Hulsea californica</i>) | 1B.3 | April through June | Low |
| Mexican hulsea (<i>Hulsea Mexicana</i>) | 2.3 | April through June | Low |
| Slender-leaved ipomopsis (<i>Ipomopsis tenuifolia</i>) | 2.3 | March through May | Present |
| Robinson's pepper-grass (<i>Lepidium virginicum</i> var. <i>robinsonii</i>) | 1B.2 | January through July | Low |
| Desert beauty (<i>Linanthus bellus</i>) | 2.3 | April through May | Present |
| Pygmy lotus (<i>Lotus haydonii</i>) | 1B.3 | January through June | Moderate |
| Mountain Springs bush lupine (<i>Lupinus excubitus</i> var. <i>medius</i>) | 1B.3 | March through May | Moderate |
| Parish's desert-thorn (<i>Lycium parishii</i>) | 2.3 | March through April | Moderate |
| Hairy stickleaf (<i>Mentzelia hirsutissima</i>) | 2.3 | March through May | Low |
| Creamy blazing star (<i>Mentzelia tridentate</i>) | 1B.3 | March through May | Moderate |
| Desert spike moss (<i>Selaginella eremophila</i>) | 2.2 | May through July | Moderate |
| Chaparral ragwort (<i>Senecio aphanactis</i>) | 2.2 | January through April | Moderate |
| Southern jewel-flower (<i>Streptanthus campestris</i>) | 1B.3 | May through July | Moderate |
| Southern mountains skullcap (<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i>) | 1B.2 | June through August | Low |
| Parry's tetracoccus (<i>Tetracoccus dioicus</i>) | 1B.2 | April through May | Moderate |

Jacumba milk-vetch was observed throughout the Proposed Project area; however, all occurrences were located west of where the 138 kV transmission line crosses Old Highway 80. Observations of Jacumba milk-vetch within the Proposed Project area included the following:

- A large population of approximately 90 individuals located south, west, and east of the existing Boulevard Substation
- Approximately 20 individuals located within the Boulevard Substation rebuild site
- Approximately 25 individuals located east of Tule Jim Lane between SP 2 and SP 3
- Approximately 11 individuals located between SP 6 and SP 9
- One individual located along an existing access road between SP 45 and SP 46
- Approximately six individuals located north and south of the transmission line, between SP 48 and SP 49, along the western edge of Boundary Creek
- A large population of approximately 20 individuals located south of the 138 kV transmission line at SP 49, along an existing access road

The 2010 rare plant surveys confirmed the locations of all Jacumba milk-vetch populations discovered within the survey area during the 2008 and 2009 rare plant surveys. However, additional locations of this species were observed during the 2010 rare plant surveys. Maps depicting the locations of Jacumba milk-vetch individuals observed within the Proposed Project area during the 2010 survey effort are provided in Attachment C: 2010 Rare Plant Survey Species Occurrences Maps. Representative photographs of Jacumba milk-vetch are provided in Attachment D: Representative Photographs.

7.1.1 Sticky Gerarea

Sticky gerarea is a short-lived perennial within the Asteraceae family, with a limited range in the U.S. This species is restricted to southeastern San Diego County, with only a few occurrences in Imperial County. It is also known to occur in Baja California, Mexico. The typical habitat of sticky gerarea is comprised of openings in chaparral or desert transition scrub with deep, coarse, granitically derived, sandy soils, often with finer material below. Sticky gerarea occurs at elevations between 1,480 feet and 5,580 feet above msl.

Sticky gerarea was observed throughout the Proposed Project area, including within the ECO Substation survey area, the 138 kV transmission line corridor, and just south of the Boulevard Substation site. Observations of sticky gerarea within the survey area included the following:

- Scattered, small clusters of approximately five to ten individuals each, located south of the existing Boulevard Substation, near SP 1, and along the existing access road
- A small cluster of approximately five individuals located along the eastern side of the access road, between SP 5 and SP 6

- A large population of hundreds of individuals scattered throughout the 138 kV transmission line ROW between SP 6 and SP 9
- Approximately nine individuals observed near wood pole (WP) 6 and WP 7
- Approximately 15 individuals located just north of SP 10
- Five individuals located just east of the proposed fly yard near SP 16
- Two individuals located between SP 19 and SP 20
- Two individuals located southeast of SP 22
- A large population of approximately 40 individuals located between SP 33 and SP 34
- Approximately 11 individuals located east of the proposed pull site near SP 38
- Two individuals located between SP 38 and SP 39
- One individual located between SP 42 and SP 43
- Three individuals located south of the 138 kV transmission line at SP 49, along an existing access road
- Five individuals located along the access road southeast of SP 50
- Approximately 16 individuals located near SP 52
- Ten individuals located between SP 52 and SP 53
- Three individuals located between SP 55 and SP 56
- Nine individuals located between SP 60 and SP 61
- A large population of approximately 40 individuals located near SP 63
- A large population of approximately 30 individuals located east of SP 64
- Three individuals located north and east of SP 64
- One individual located between SP 60 and SP 70
- Two individuals located between SP 72 and SP 73
- Approximately eight individuals located south of SP 73
- A loosely scattered population of approximately 16 individuals located north and west of SP 93

- A loosely scattered population of approximately 12 individuals located between SP 94 and SP 95
- One individual located within the southern portion of the ECO Substation survey area

The 2010 rare plant surveys confirmed the locations of all sticky geraea populations discovered within the survey area during the 2009 rare plant surveys. However, additional locations of sticky geraea were observed during the 2010 rare plant surveys. Maps depicting the locations of sticky geraea observed within the Proposed Project area in 2010 are provided in Attachment C: 2010 Rare Plant Survey Species Occurrences Maps. Representative photographs of sticky geraea are provided in Attachment D: Representative Photographs.

7.1.2 Slender-leaved Ipomopsis

Slender-leaved ipomopsis is a perennial sub-shrub within the Polemoniaceae family that, within the U.S., is restricted to the Southern California counties of San Diego, Imperial, Riverside, and Los Angeles. Slender-leaved ipomopsis also occurs in Baja California, Mexico. This species occurs between 330 feet and 4,000 feet above msl. The typical habitat of this species consists of dry granitic substrates in desert scrub vegetation, often within cracks or at the base of large boulder outcrops. One population of slender-leaved ipomopsis was found within the survey area. Approximately 15 individuals were observed in clusters of two to five individuals, growing amongst the large boulders west and south of SP 99. This is the same population that was observed during the 2009 rare plant surveys. Maps depicting the locations of slender-leaved ipomopsis populations observed within the Proposed Project area in 2010 are provided in Attachment C: 2010 Rare Plant Survey Species Occurrences Maps. Representative photographs of slender-leaved ipomopsis are provided in Attachment D: Representative Photographs.

7.1.3 Desert Beauty

Desert beauty is a small, annual plant that occupies a small range within southeastern San Diego County at elevations of between 3,280 feet and 4,600 feet above msl. Desert beauty also occurs in Baja California, Mexico. The typical habitat of this tiny annual consists of broad sandy openings within desert scrub and chaparral communities, often along, and within, ephemeral drainages.

Desert beauty was observed in several locations along the 138 kV transmission line ROW, including the following:

- Several large populations of hundreds of individuals located throughout the 138 kV transmission line ROW between SP 2 and SP 5
- A population of approximately 60 individuals located north of SP 21
- Two populations of approximately 100 individuals located between SP 50 and SP 51
- Three populations of approximately 90 individuals located south of SP 52
- Two populations of approximately 120 individuals located between SP 64 and SP 65

- Three populations of approximately 80 individuals located northeast of SP 65
- Two individuals located between SP 69 and SP 70

The 2010 rare plant surveys confirmed the locations of all desert beauty populations discovered within the survey area during the 2009 rare plant surveys. However, additional locations of desert beauty were observed during the 2010 rare plant surveys due to the high level of precipitation that the Proposed Project area received during the winter of 2009/2010. Maps depicting the locations of desert beauty populations observed within the Proposed Project area in 2010 are provided in Attachment C: 2010 Rare Plant Survey Species Occurrences Maps. Representative photographs of desert beauty are provided in Attachment D: Representative Photographs.

8 – SURVEY RESULT SUMMARY

During the 2009 and 2010 rare plant surveys, four sensitive plant species—Jacumba milk-vetch, sticky geraea, slender-leaved ipomopsis, and desert beauty—were observed within the Proposed Project area. The western portion of the 138 kV transmission line corridor and the Boulevard Substation site area contains the highest density of sensitive plant species within the Proposed Project area. Jacumba milk-vetch was observed scattered throughout the Proposed Project area from SP 49 westward to the Boulevard Substation site, with high densities occurring around the existing Boulevard Substation, between SP 2 and SP 3, and south of SP 49. Sticky geraea was observed throughout the Proposed Project area including the ECO Substation site and scattered along the 138 kV transmission line corridor. Large populations of sticky geraea were observed scattered between SP 1 and SP 10, between SP 33 and SP 34, near SP 52, between SP 63 and SP 64, and between SP 93 and SP 94. One population of slender-leaved ipomopsis was found within the survey area. Approximately 15 individuals were observed in clusters of two to five individuals, growing amongst the large boulders west and south of SP 99. Desert beauty was observed in several locations within the western portion the 138 kV transmission line ROW, with large populations observed between SP 2 and SP 5, SP 50 and SP 52, SP 64 and SP 65, and SP 69 and SP 70.

9 – REFERENCES

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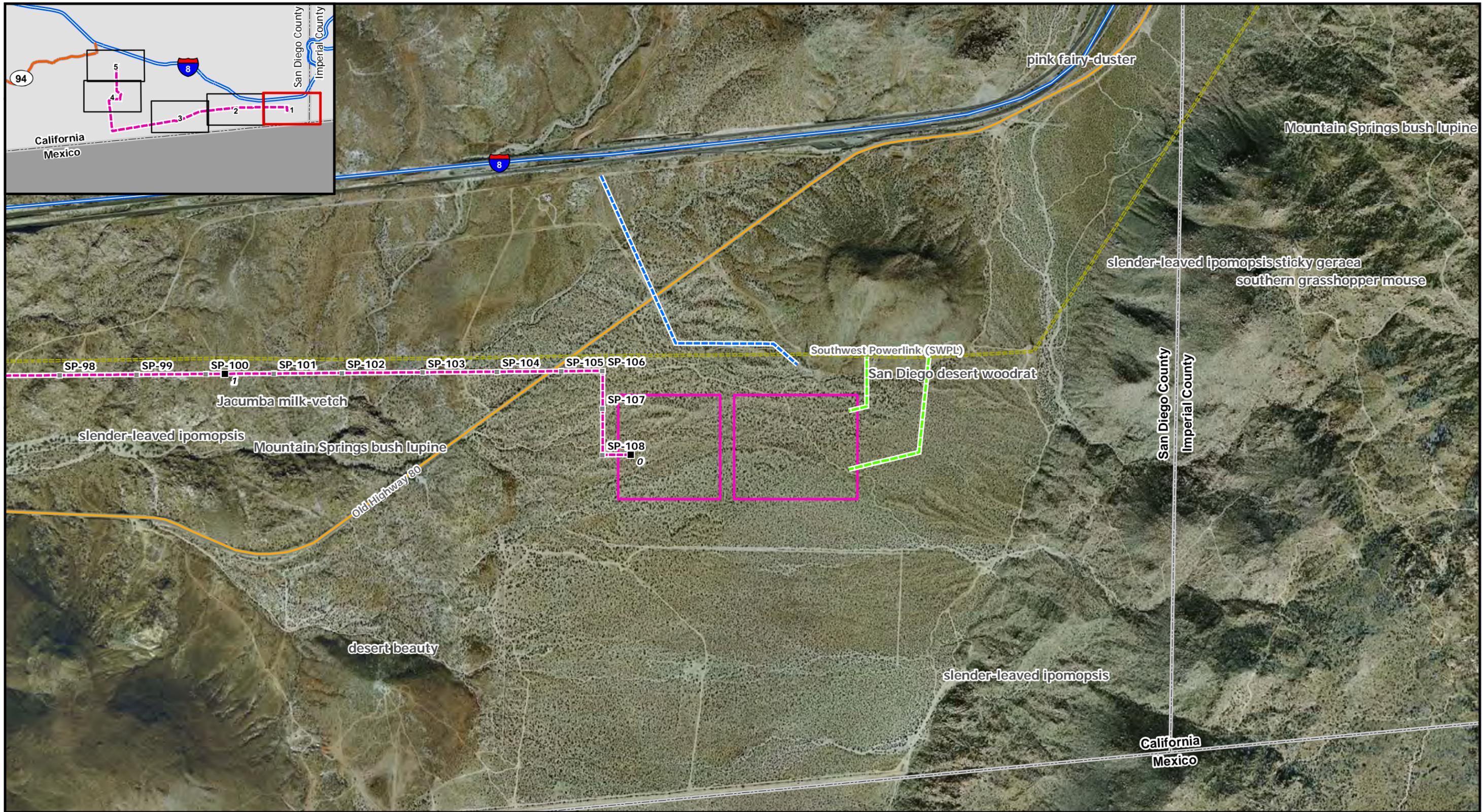
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- USGS. In-Ko-Pah Gorge, California. 7.5-minute series (topographic). 1987.
- USGS. Jacumba, California. 7.5-minute series (topographic). 1977.
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ATTACHMENT A: CNDDDB OCCURRENCES MAPS

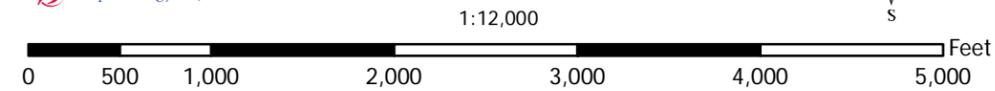


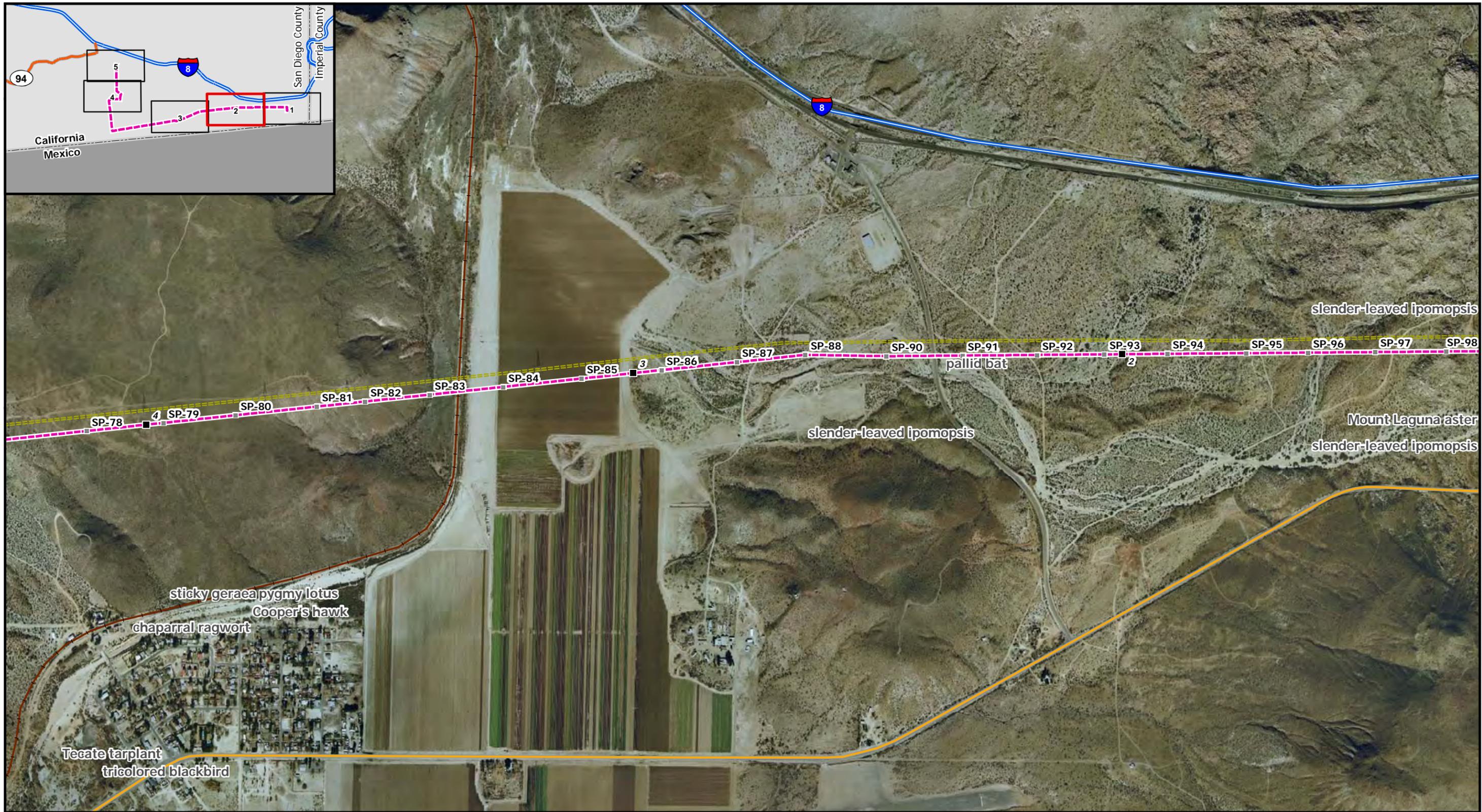
Attachment A: CNDDDB Occurrence Map 1 of 5

East County Substation Project

- Proposed SWPL Loop-In
- Proposed 138 kV Line
- Proposed 12 kV Temporary Distribution Tap
- 445 Circuit Collocated with 138 kV Line
- Existing Transmission Line
- Proposed ECO Substation
- Boulevard Substation Rebuild
- ▲ Existing Boulevard Substation
- Proposed 138 kV Tower
- Proposed 138 kV Line Milepost
- Interstate
- Highway
- Major Road
- Railroad

All CNDDDB records are within 1 mile. There are no CNDDDB results in areas of the Proposed Project not depicted in this Attachment.



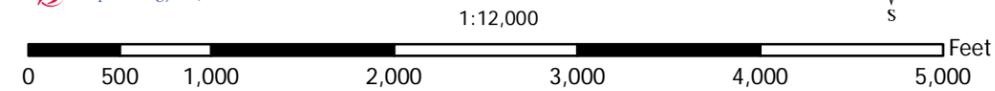


Attachment A: CNDDDB Occurrence Map 2 of 5

East County Substation Project

- Proposed SWPL Loop-In
- Proposed 138 kV Line
- Proposed 12 kV Temporary Distribution Tap
- 445 Circuit Collocated with 138 kV Line
- Existing Transmission Line
- Proposed ECO Substation
- Boulevard Substation Rebuild
- ▲ Existing Boulevard Substation
- Proposed 138 kV Tower
- Proposed 138 kV Line Milepost
- Interstate
- Highway
- Major Road
- Railroad

All CNDDDB records are within 1 mile. There are no CNDDDB results in areas of the Proposed Project not depicted in this Attachment.





Attachment A: CNDDDB Occurrence Map 3 of 5

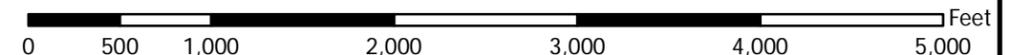
East County Substation Project

- Proposed SWPL Loop-In
- Proposed 138 kV Line
- Proposed 12 kV Temporary Distribution Tap
- 445 Circuit Collocated with 138 kV Line
- Existing Transmission Line
- Proposed ECO Substation
- Boulevard Substation Rebuild
- ▲ Existing Boulevard Substation
- Proposed 138 kV Tower
- Proposed 138 kV Line Milepost
- Interstate
- Highway
- Major Road
- Railroad

All CNDDDB records are within 1 mile. There are no CNDDDB results in areas of the Proposed Project not depicted in this Attachment.



1:12,000





Attachment A: CNDDDB Occurrence Map 4 of 5

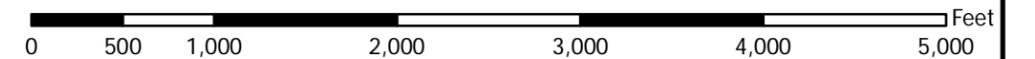
East County Substation Project

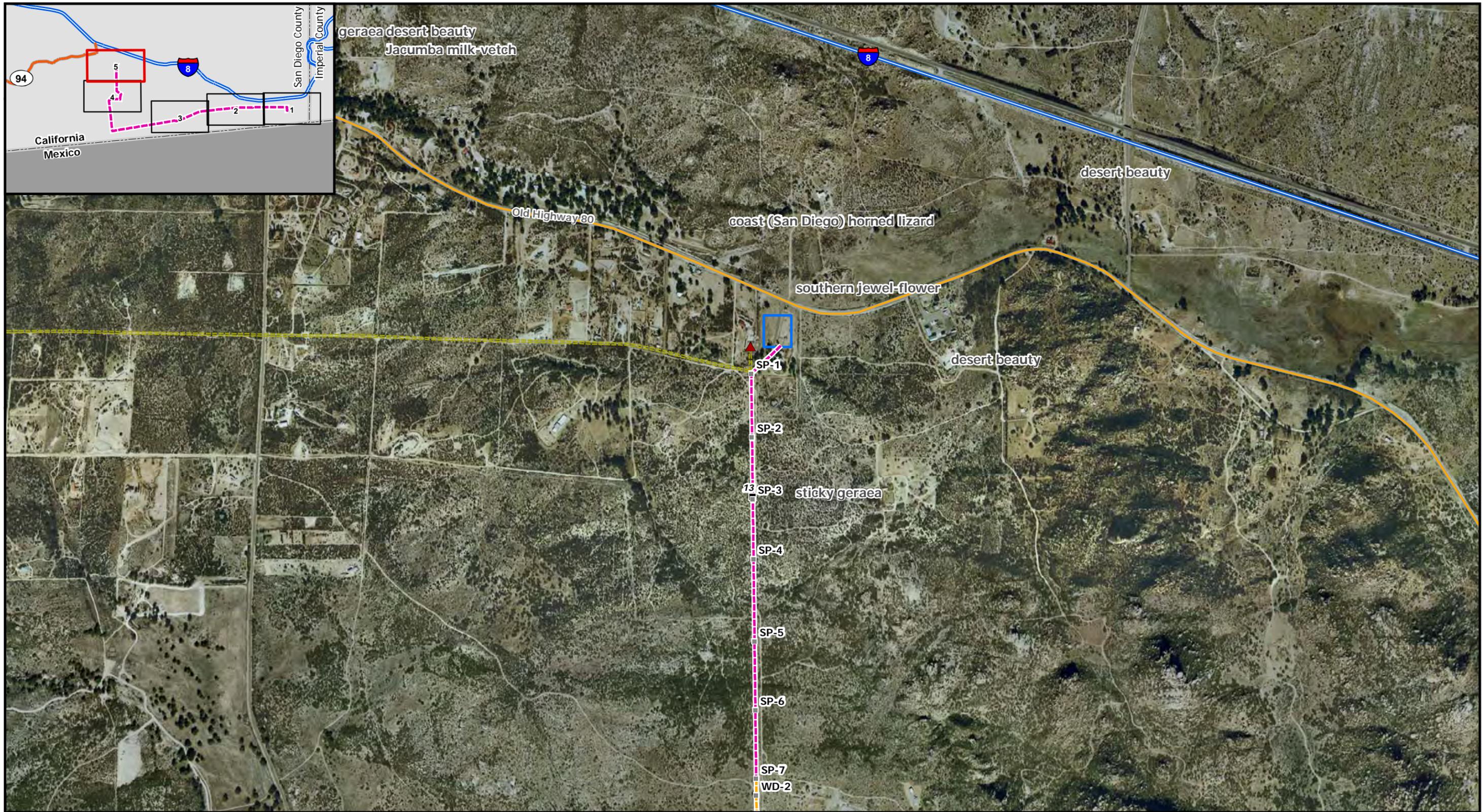
- Proposed SWPL Loop-In
- Proposed 138 kV Line
- Proposed 12 kV Temporary Distribution Tap
- 445 Circuit Collocated with 138 kV Line
- Existing Transmission Line
- Proposed ECO Substation
- Boulevard Substation Rebuild
- ▲ Existing Boulevard Substation
- Proposed 138 kV Tower
- Proposed 138 kV Line Milepost
- Interstate
- Highway
- Major Road
- Railroad

All CNDDDB records are within 1 mile. There are no CNDDDB results in areas of the Proposed Project not depicted in this Attachment.



1:12,000



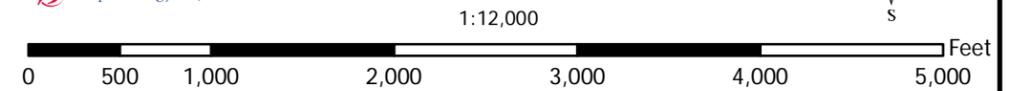


Attachment A: CNDDDB Occurrence Map 5 of 5

East County Substation Project

- Proposed SWPL Loop-In
- Proposed 138 kV Line
- Proposed 12 kV Temporary Distribution Tap
- 445 Circuit Collocated with 138 kV Line
- Existing Transmission Line
- Proposed ECO Substation
- Boulevard Substation Rebuild
- ▲ Existing Boulevard Substation
- Proposed 138 kV Tower
- Proposed 138 kV Line Milepost
- Interstate
- Highway
- Major Road
- Railroad

All CNDDDB records are within 1 mile. There are no CNDDDB results in areas of the Proposed Project not depicted in this Attachment.



ATTACHMENT B: 2010 RARE PLANT SURVEY SPECIES LIST

| Species | | Native | Non-Native |
|---|--------------------------|--------|------------|
| Scientific Name | Common Name | | |
| Ferns and Fern Allies | | | |
| Dryopteridaceae Family | | | |
| <i>Dryopteris arguta</i> | coastal wood fern | X | |
| Pteridaceae Family | | | |
| <i>Pellaea mucronata</i> var. <i>mucronata</i> | bird's foot fern | X | |
| Cone-Bearing Plants (Gymnospermae) | | | |
| Cupressaceae Family | | | |
| <i>Juniperus californica</i> | California juniper | X | |
| Ephedraceae Family | | | |
| <i>Ephedra californica</i> | California jointfir | X | |
| <i>Ephedra nevadensis</i> | Nevada jointfir | X | |
| <i>Ephedra viridis</i> | mormon tea | X | |
| Flowering Plants (Angiospermae Dicotyledoneae) | | | |
| Adoxaceae Family | | | |
| <i>Sambucus mexicana</i> | blue elderberry | X | |
| Anacardiaceae | | | |
| <i>Rhus ovata</i> | sugar sumac | X | |
| <i>Rhus trilobata</i> | skunkbrush | X | |
| Apiaceae Family | | | |
| <i>Lomatium mohavense</i> | Mojave wild parsely | X | |
| <i>Tauschia arguta</i> | southern umbrellawort | X | |
| <i>Yabea microcarpa</i> | California hedge parsley | X | |
| Asteraceae Family | | | |
| <i>Acourtia microcephala</i> | sacapellote | X | |
| <i>Adenophyllum porophylloides</i> | San Felipe dogweed | X | |
| <i>Ambrosia cf. acanthicarpa</i> | annual bursage | X | |
| <i>Ambrosia dumosa</i> | burro weed | X | |
| <i>Ambrosia salsola</i> | burrobrush | X | |
| <i>Anisocoma acaulis</i> | scale bud | X | |

Attachment B: Plant Species List

| Species | | Native | Non-Native |
|---|--------------------------|--------|------------|
| Scientific Name | Common Name | | |
| <i>Artemisia dracunculus</i> | wild tarragon | X | |
| <i>Artemisia tridentata ssp. tridentata</i> | big sagebrush | X | |
| <i>Baccharis sergiloides</i> | desert baccharis | X | |
| <i>Bahiopsis parishii</i> | parish goldeneye | X | |
| <i>Chaenactis fremontii</i> | Fremont pincushion | X | |
| <i>Chaenactis glabriuscula var. glabriuscula</i> | common yellow pincushion | X | |
| <i>Cirsium cf. occidentale var. californicum</i> | California thistle | X | |
| <i>Coreopsis californica var. californica</i> | California tickseed | X | |
| <i>Corethrogyne filaginifolia var. filaginifolia</i> | common sandaster | X | |
| <i>Encelia actoni</i> | Acton's encelia | X | |
| <i>Encelia farinosa</i> | brittlebush | X | |
| <i>Ericameria brachylepis</i> | boundary goldenbush | X | |
| <i>Ericameria cuneata var. spathulata</i> | cliff goldenbush | X | |
| <i>Ericameria linearifolia</i> | linear leaved goldenbush | X | |
| <i>Eriophyllum confertiflorum var. confertiflorum</i> | golden yarrow | X | |
| <i>Eriophyllum wallacei</i> | Wallace's woolly daisy | X | |
| <i>Geraea viscida</i> | sticky geraea | X | |
| <i>Gutierrezia sp.</i> | matchweed | X | |
| <i>Lasthenia gracilis</i> | needle goldfields | X | |
| <i>Layia glandulosa</i> | yellow rayed layia | X | |
| <i>Layia platyglossa</i> | common tidy tips | X | |
| <i>Malacothrix californica</i> | California dandelion | X | |
| <i>Malacothrix sp.</i> | California dandelion | X | |
| <i>Pseudognaphalium canescens</i> | Wright's cudweed | X | |
| <i>Rafinesquia neomexicana</i> | New Mexico plumseed | X | |

| Species | | Native | Non-Native |
|---|-----------------------------|--------|------------|
| Scientific Name | Common Name | | |
| <i>Senecio californicus</i> | California ragwort | X | |
| <i>Stebbinsoseris heterocarpa</i> | grassland stebbinsoseris | X | |
| <i>Stylocline cf. psilocarphoides</i> | baretwig neststraw | X | |
| <i>Uropappus lindleyi</i> | silver puffs | X | |
| Bignoniaceae Family | | | |
| <i>Chilopsis linearis</i> | desert willow | X | |
| Boraginaceae Family | | | |
| <i>Amsinckia menziesii</i> var. <i>intermedia</i> | common fiddleneck | X | |
| <i>Amsinckia tessellata</i> | bristly fiddleneck | X | |
| <i>Cryptantha angustifolia</i> | Narrow-leaved forget me not | X | |
| <i>Cryptantha intermedia</i> | clearwater cryptantha | X | |
| <i>Cryptantha pterocarya</i> | wing nut forget me not | X | |
| <i>Cryptantha simulans</i> | pine cryptantha | X | |
| <i>Harpagonella palmeri</i> | Palmer's grapplinghook | X | |
| <i>Pectocarya linearis</i> ssp. <i>ferocula</i> | sagebrush combseed | X | |
| <i>Pectocarya penicillata</i> | sleeping combseed | X | |
| <i>Pectocarya recurvata</i> | curvenut combseed | X | |
| <i>Pectocarya setosa</i> | moth combseed | X | |
| <i>Plagiobothrys</i> sp. | popcorn flower | X | |
| Brassicaceae Family | | | |
| <i>Arabis</i> sp. | Rock cress | X | |
| <i>Athysanus pusillus</i> | common sandweed | X | |
| <i>Brassica tournefortii</i> | Asian mustard | | X |
| <i>Caulanthus heterophyllus</i> var. <i>heterophyllus</i> | San Diego wild cabbage | X | |
| <i>Descurainia pinnata</i> | western tansymustard | X | |
| <i>Descurainia sophia</i> | flix weed | | X |
| <i>Draba cuneifolia</i> | wedge leaved draba | X | |
| <i>Guillenia lasiophylla</i> | California mustard | X | |

| Species | | Native | Non-Native |
|--|-----------------------------|--------|------------|
| Scientific Name | Common Name | | |
| <i>Hirschfeldia incana</i> | Mediterranean hoary mustard | | X |
| <i>Lepidium nitidum var nitidum</i> | shining peppergrass | X | |
| <i>Sisymbrium altissimum</i> | tall tumbledustard | | X |
| <i>Sisymbrium irio</i> | London rocket | | X |
| <i>Thysanocarpus curvipes</i> | hairy lacepod | X | |
| Cactaceae Family | | | |
| <i>Cylindropuntia californica var. parkeri</i> | brownsined pricklypear | X | |
| <i>Cylindropuntia ganderi var. ganderi</i> | Gander's buckhorn cholla | X | |
| <i>Echinocereus engelmannii</i> | Engelmann's hedgehog cactus | X | |
| <i>Ferocactus cylindraceus var. lecontei</i> | barrel cactus | X | |
| <i>Mammillaria dioica</i> | fish hook cactus | X | |
| <i>Opuntia chlorotica</i> | pancake prickly pear | X | |
| <i>Opuntia phaeacantha</i> | tulip pricklypear | X | |
| Chenopodiaceae Family | | | |
| <i>Atriplex canescens</i> | shadscale | X | |
| <i>Chenopodium californicum</i> | California goosefoot | X | |
| Crassulaceae Family | | | |
| <i>Crassula connata</i> | pygmy weed | X | |
| <i>Dudleya pulverulenta</i> | chalk dudleya | X | |
| <i>Dudleya sp.</i> | liveforever | X | |
| Cucurbitaceae Family | | | |
| <i>Marah macrocarpus var. macrocarpus</i> | southern wild cucumber | X | |
| Ericaceae Family | | | |
| <i>Arctostaphylos pungens</i> | Mexican manzanita | X | |
| Euphorbiaceae Family | | | |
| <i>Chamaesyce albomarginata</i> | rattlesnake weed | X | |

| Species | | Native | Non-Native |
|--|----------------------------------|--------|------------|
| Scientific Name | Common Name | | |
| Fabaceae Family | | | |
| <i>Acacia greggii</i> | catclaw acacia | X | |
| <i>Astragalus coccineus</i> | scarlet milk-vetch | X | |
| <i>Astragalus didymocarpus</i> var. <i>dispermus</i> | dwarf white milk-vetch | X | |
| <i>Astragalus douglasii</i> var. <i>perstrictus</i> | Jacumba milk-vetch | X | |
| <i>Astragalus palmeri</i> | Palmer's milk-vetch | X | |
| <i>Lathyrus splendens</i> | pride of California | X | |
| <i>Lotus argophyllus</i> var. <i>argophyllus</i> | southern California silver lotus | X | |
| <i>Lotus strigosus</i> | hairy lotus | X | |
| <i>Lotus procumbens</i> var. <i>procumbens</i> | silky California broom | X | |
| <i>Lotus scoparius</i> var. <i>brevialatus</i> | western bird's foot trefoil | X | |
| <i>Lotus wrangelianus</i> | Chilean bird's foot trefoil | X | |
| <i>Lupinus bicolor</i> | miniature lupine | X | |
| <i>Lupinus concinnus</i> | scarlet lupine | X | |
| <i>Lupinus formosus</i> var. <i>formosus</i> | summer lupine | X | |
| <i>Lupinus truncatus</i> | collared annual lupine | X | |
| <i>Pediomelum californicum</i> | California Indian breadroot | X | |
| <i>Trifolium albopurpureum</i> var. <i>albopurpureum</i> | rancheria clover | X | |
| <i>Trifolium gracilentum</i> var. <i>gracilentum</i> | pinpoint clover | X | |
| <i>Trifolium willdenovii</i> | tomcat clover | X | |
| Fagaceae Family | | | |
| <i>Quercus agrifolia</i> | coast live oak | X | |
| <i>Quercus cornelius-mulleri</i> | desert scrub oak | X | |
| Garryaceae Family | | | |
| <i>Garrya veatchii</i> | canyon silktassel | X | |
| Geraniaceae Family | | | |

| Species | | Native | Non-Native |
|---|-------------------------|--------|------------|
| Scientific Name | Common Name | | |
| <i>Erodium cicutarium</i> | redstem filaree | | X |
| Grossulariaceae Family | | | |
| <i>Ribes quercetorum</i> | rock gooseberry | X | |
| Hydrophyllaceae Family | | | |
| <i>Emmenanthe penduliflora</i> var. <i>penduliflora</i> | whispering bells | X | |
| <i>Eriodictyon trichocalyx</i> var. <i>lanatum</i> | hairy yerba santa | X | |
| <i>Nama</i> sp. | purplemat | X | |
| <i>Nemophila spatulata</i> | Sierra nemophila | X | |
| <i>Phacelia distans</i> | wild heliotrope | X | |
| <i>Phacelia minor</i> | California bluebell | X | |
| <i>Phacelia vallis-mortae</i> | Death Valley phacelia | X | |
| <i>Phacelia</i> sp. (<i>magellanica</i> complex) | rock phacelia | X | |
| <i>Pholistoma membranaceum</i> | white fiesta flower | X | |
| Lamiaceae Family | | | |
| <i>Salvia apiana</i> | white sage | X | |
| <i>Salvia carduacea</i> | thistle sage | X | |
| <i>Salvia columbariae</i> | chia sage | X | |
| Loasaceae Family | | | |
| <i>Mentzelia</i> sp. | blazing star | X | |
| Malvaceae Family | | | |
| <i>Sphaeralcea ambigua</i> var. <i>ambigua</i> | mountain apricot mallow | X | |
| Nyctaginaceae Family | | | |
| <i>Mirabilis laevis</i> var. <i>retrorsa</i> | wishbone bush | X | |
| Onagraceae Family | | | |
| <i>Camissonia californica</i> | California primrose | X | |
| <i>Camissonia pallida</i> ssp. <i>pallida</i> | pale sun cup | X | |
| <i>Camissonia strigulosa</i> | strigose sun cup | X | |

| Species | | Native | Non-Native |
|---|----------------------------|--------|------------|
| Scientific Name | Common Name | | |
| Orobanchaceae Family | | | |
| <i>Castilleja exserta ssp. exserta</i> | purple owl's clover | X | |
| <i>Castilleja foliolosa</i> | Texas paintbrush | X | |
| Papaveraceae | | | |
| <i>Eschscholzia californica</i> | California poppy | X | |
| <i>Eschscholzia minutiflora</i> | pygmy poppy | X | |
| <i>Eschscholzia cf. parishii</i> | Parish's poppy | | |
| <i>Platystemon californicus</i> | cream cups | X | |
| Paeoniaceae Family | | | |
| <i>Paeonia californica</i> | California peony | X | |
| Phrymaceae Family | | | |
| <i>Mimulus aridus</i> | low bush monkeyflower | X | |
| <i>Mimulus guttatus</i> | common yellow monkeyflower | X | |
| Plantaginaceae Family | | | |
| <i>Keckiella antirrhinoides var. antirrhinoides</i> | chaparral beard tongue | X | |
| <i>Penstemon centranthifolius</i> | scarlet bugler | X | |
| <i>Penstemon clevelandii var. clevelandii</i> | Cleveland's beardtongue | X | |
| <i>Penstemon cf. spectabilis var. spectabilis</i> | showy penstemon | X | |
| Polemoniaceae Family | | | |
| <i>Eriastrum densifolium ssp. elongatum</i> | giant eriastrum | X | |
| <i>Gilia clokeyi</i> | Clokey's gilia | X | |
| <i>Gilia sp.</i> | Blue field gilia | v | |
| <i>Ipomopsis tenuifolia</i> | slender leaved ipomopsis | X | |
| <i>Linanthus bellus</i> | desert beauty | X | |
| <i>Linanthus aff. jonesii</i> | Jones' linanthus | X | |
| <i>Linanthus sp.</i> | No common name | X | |

Attachment B: Plant Species List

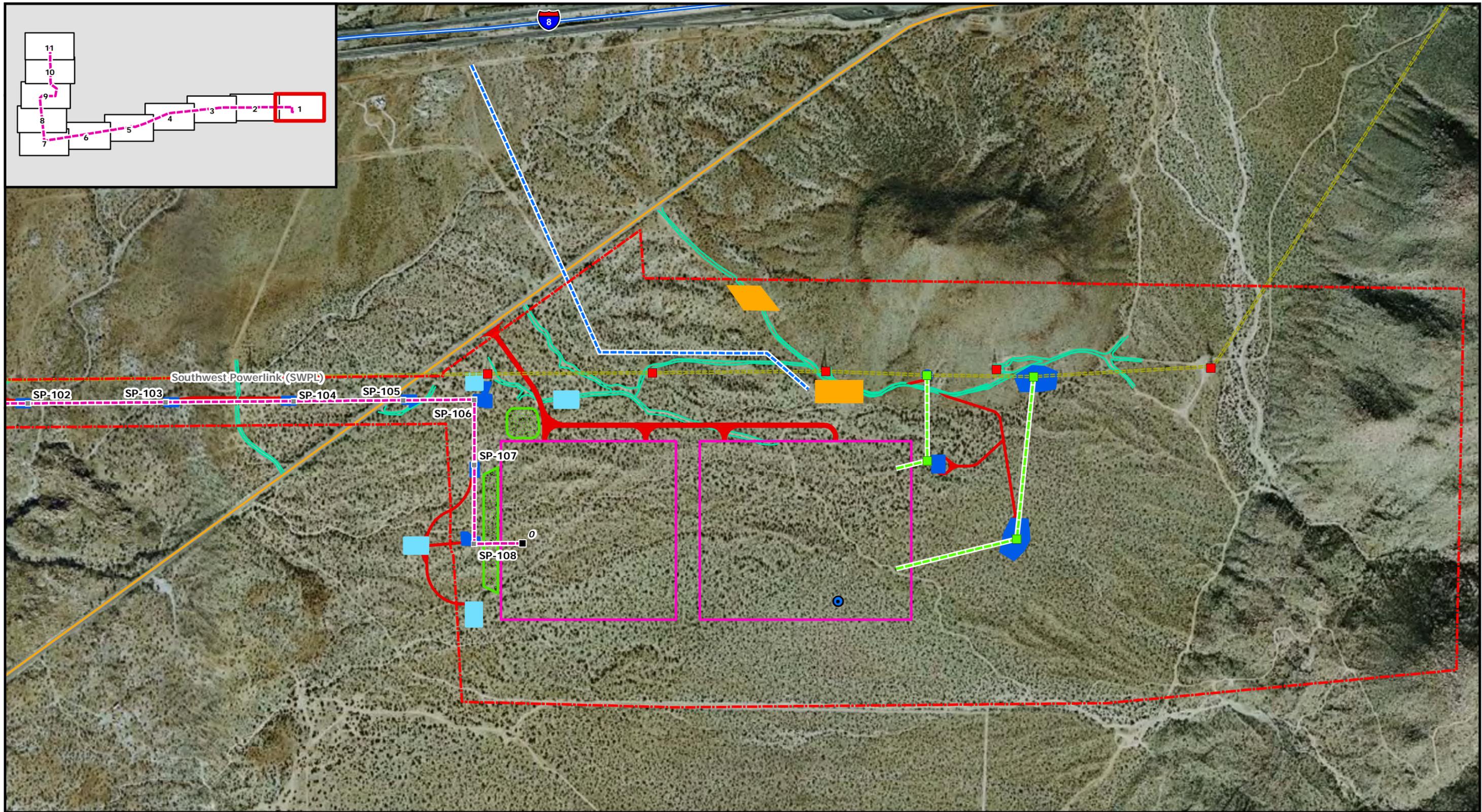
| Species | | Native | Non-Native |
|---|--------------------------|--------|------------|
| Scientific Name | Common Name | | |
| <i>Navarretia sp.</i> | No common name | X | |
| <i>Phlox gracilis</i> | slender phlox | X | |
| Polygonaceae Family | | | |
| <i>Chorizanthe brevicornu var. brevicornu</i> | brittle spineflower | X | |
| <i>Chorizanthe fimbriata var. laciniata</i> | lace fringed spineflower | X | |
| <i>Chorizanthe sp.</i> | No common name | X | |
| <i>Eriogonum elongatum var. elongatum</i> | long stemmed buckwheat | X | |
| <i>Eriogonum fasciculatum var. polifolium</i> | California buckwheat | X | |
| <i>Eriogonum cf. gracile</i> | slender woolly buckwheat | X | |
| <i>Eriogonum wrightii var. membranaceum</i> | Wright's buckwheat | X | |
| <i>Pterostegia drymarioides</i> | fairy mist | X | |
| Portulacaceae Family | | | |
| <i>Calandrinia ciliata</i> | red maids | X | |
| <i>Calyptridium monandrum</i> | pussy paws | X | |
| <i>Claytonia cf. exigua ssp. viridis</i> | little spring beauty | X | |
| <i>Claytonia parviflora ssp. parviflora</i> | miner's lettuce | X | |
| Ranunculaceae Family | | | |
| <i>Anemone tuberosa</i> | tuber anemone | X | |
| <i>Clematis pauciflora</i> | small leaved clematis | X | |
| <i>Delphinium parishii ssp. subglobosum</i> | oceanblue larkspur | X | |
| Rhamnaceae Family | | | |
| <i>Ceanothus greggii var. perplexans</i> | desert ceanothus | X | |
| <i>Ceanothus leucodermis</i> | chaparral whitethorn | X | |
| <i>Ziziphus parryi var. parryi</i> | Parry's jujube | X | |

| Species | | Native | Non-Native |
|--|------------------------------|--------|------------|
| Scientific Name | Common Name | | |
| Rosaceae Family | | | |
| <i>Adenostoma fasciculatum</i> | chamise | X | |
| <i>Adenostoma sparsifolium</i> | red shank | X | |
| <i>Cercocarpus betuloides</i> var. <i>betuloides</i> | birch leaf mountain mahogany | X | |
| <i>Prunus fremontii</i> | desert apricot | X | |
| <i>Prunus ilicifolia</i> ssp. <i>ilicifolia</i> | hollyleaf cherry | X | |
| <i>Purshia tridentata</i> var. <i>glandulosa</i> | desert bitterbrush | X | |
| Rubiaceae Family | | | |
| <i>Galium andrewsii</i> ssp. <i>andrewsii</i> | phlox leaved bedstraw | X | |
| Rutaceae | | | |
| <i>Thamnosma montana</i> | turpentine broom | X | |
| Salicaceae Family | | | |
| <i>Salix</i> cf. <i>laevigata</i> | red willow | X | |
| <i>Salix lasiolepis</i> | arroyo willow | X | |
| Simmondsiaceae | | | |
| <i>Simmondsia chinensis</i> | jojoba | X | |
| Solanaceae | | | |
| <i>Datura</i> cf. <i>wrightii</i> | jimsonweed | X | |
| <i>Lycium andersonii</i> | Anderson's desert thorn | X | |
| <i>Nicotiana obtusifolia</i> | desert tobacco | X | |
| Tamaricaceae Family | | | |
| <i>Tamarix</i> cf. <i>ramosissima</i> | tamarisk | X | |
| Urticaceae Family | | | |
| <i>Urtica dioica</i> ssp. <i>holosericea</i> | giant creek nettle | X | |
| Violaceae Family | | | |
| <i>Viola purpurea</i> ssp. <i>quercetorum</i> | goosefoot yellow violet | X | |
| Viscaceae Family | | | |
| <i>Phoradendron californicum</i> | desert mistletoe | X | |

| Species | | Native | Non-Native |
|---|----------------------------|--------|------------|
| Scientific Name | Common Name | | |
| Zygophyllaceae Family | | | |
| <i>Larrea tridentata</i> | creosote bush | X | |
| Flowering Plants (Angiospermae Monocotyledoneae) | | | |
| Agavaceae Family | | | |
| <i>Agave deserti</i> | desert agave | X | |
| <i>Yucca schidigera</i> | Mojave yucca | X | |
| <i>Yucca whipplei</i> | chaparral yucca | X | |
| Juncaceae Family | | | |
| <i>Juncus balticus</i> | wire rush | X | |
| Poaceae Family | | | |
| <i>Achnatherum speciosum</i> | desert needlegrass | X | |
| <i>Avena barbata</i> | slender wild oats | | X |
| <i>Avena fatua</i> | wild oats | | X |
| <i>Bromus diandrus</i> | ripgut brome | | X |
| <i>Bromus madritensis ssp. rubens</i> | foxtail grass | | X |
| <i>Bromus tectorum</i> | downy brome | | X |
| <i>Distichlis spicata</i> | salt grass | X | |
| <i>Hordeum murinum ssp. leporinum</i> | foxtail barley | | X |
| <i>Melica imperfecta</i> | small flowered melica | X | |
| <i>Poa secunda ssp. secunda</i> | Sandberg's bluegrass | X | |
| <i>Poa sp.</i> | one sided blue grass | X | |
| <i>Schismus barbatus</i> | common Mediterranean grass | | X |
| <i>Vulpia microstachys var. pauciflora</i> | Pacific fescue | X | |
| <i>Vulpia myuros var. myuros</i> | rattail fescue | | X |
| Themidaceae Family | | | |
| <i>Dichelostemma capitatum ssp. capitatum</i> | wild hyacinth | X | |

| Species | | Native | Non-Native |
|---|-------------------------|--------|------------|
| Scientific Name | Common Name | | |
| <i>Dichelostemma capitatum ssp. pauciflorum</i> | few flowered blue dicks | X | |

ATTACHMENT C: 2010 RARE PLANT SURVEY SPECIES OCCURRENCES MAPS



Attachment C: Rare Plant Species Occurrences Map 1 of 11

East County Substation Project

- | | | | |
|---|---------------------------------|---------------------|--|
| Proposed SWPL Loop-In | Proposed ECO Substation | Retention Pond | 2010 Rare Plant Survey Area |
| Proposed 138 kV Line | Boulevard Substation Rebuild | New Access Road | Desert Beauty (CNPS List 2.3) |
| Proposed 12 kV Temporary Distribution Tap | Proposed 138 kV Line Milepost | Fly Yard | Jacumba milk-vetch (CNPS List 1B.2) |
| 445 Circuit Collocated with 138 kV Line | Proposed 138 kV Tower | Pull Site | Sticky Gerarea (CNPS List 2.3) |
| Existing Transmission Line | Existing SWPL Structure | Temporary Work Area | Slender-leaved ipomopsis (CNPS List 2.3) |
| Existing Access Road | Proposed SWPL Loop-In Structure | Staging Yard | |

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0 250 500 1,000 1,500 2,000 2,500 Feet



Attachment C: Rare Plant Species Occurrences Map 2 of 11

East County Substation Project

| | | | |
|---|---------------------------------|---------------------|--|
| Proposed SWPL Loop-In | Proposed ECO Substation | Retention Pond | 2010 Rare Plant Survey Area |
| Proposed 138 kV Line | Boulevard Substation Rebuild | New Access Road | Desert Beauty (CNPS List 2.3) |
| Proposed 12 kV Temporary Distribution Tap | Proposed 138 kV Line Milepost | Fly Yard | Jacumba milk-vetch (CNPS List 1B.2) |
| 445 Circuit Collocated with 138 kV Line | Proposed 138 kV Tower | Pull Site | Sticky Gerarea (CNPS List 2.3) |
| Existing Transmission Line | Existing SWPL Structure | Temporary Work Area | Slender-leaved ipomopsis (CNPS List 2.3) |
| Existing Access Road | Proposed SWPL Loop-In Structure | Staging Yard | |

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Attachment C: Rare Plant Species Occurrences Map 3 of 11

East County Substation Project

- | | | | |
|---|---------------------------------|---------------------|--|
| Proposed SWPL Loop-In | Proposed ECO Substation | Retention Pond | 2010 Rare Plant Survey Area |
| Proposed 138 kV Line | Boulevard Substation Rebuild | New Access Road | Desert Beauty (CNPS List 2.3) |
| Proposed 12 kV Temporary Distribution Tap | Proposed 138 kV Line Milepost | Fly Yard | Jacumba milk-vetch (CNPS List 1B.2) |
| 445 Circuit Collocated with 138 kV Line | Proposed 138 kV Tower | Pull Site | Sticky Gerarea (CNPS List 2.3) |
| Existing Transmission Line | Existing SWPL Structure | Temporary Work Area | Slender-leaved ipomopsis (CNPS List 2.3) |
| Existing Access Road | Proposed SWPL Loop-In Structure | Staging Yard | |

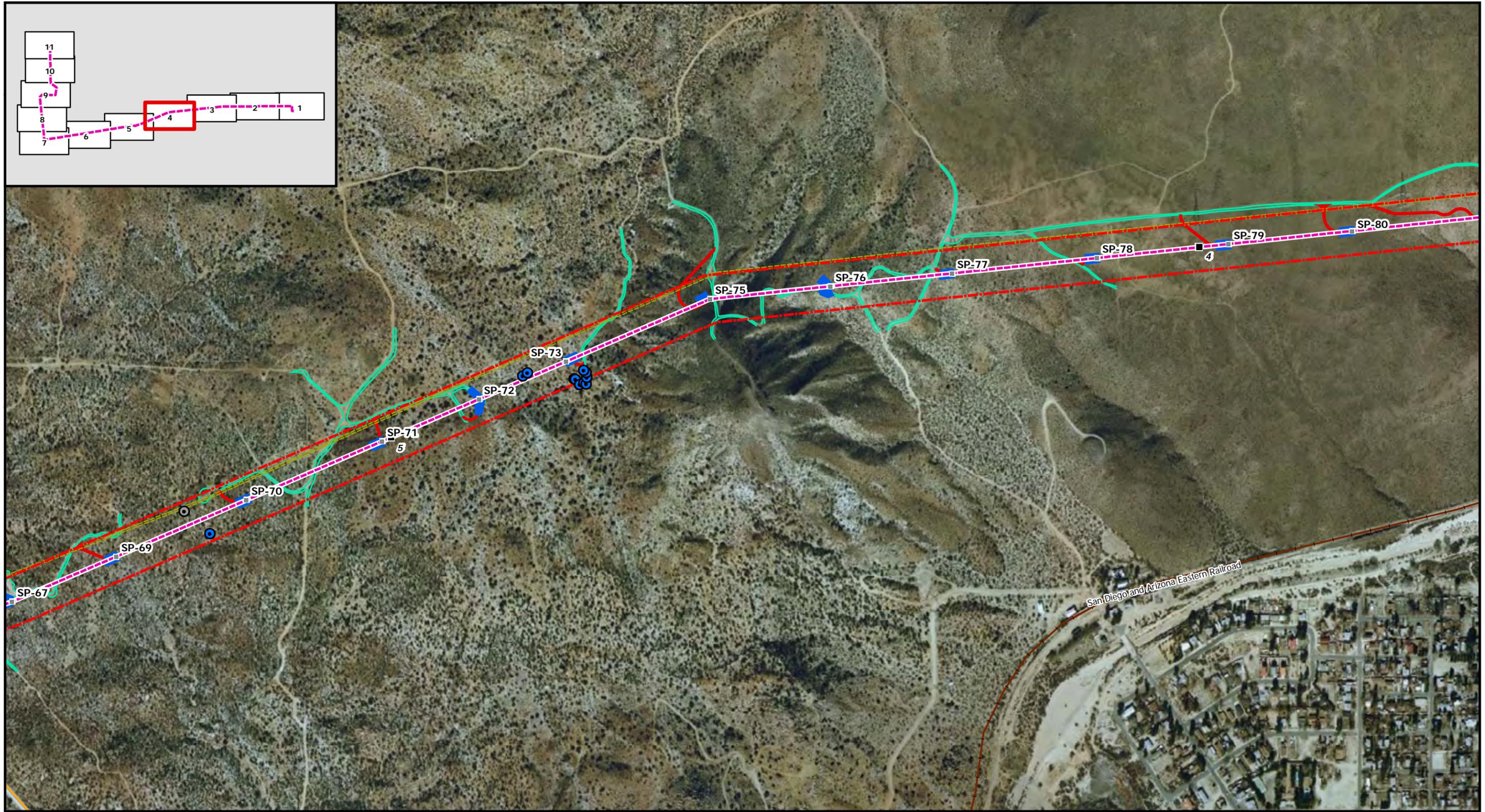
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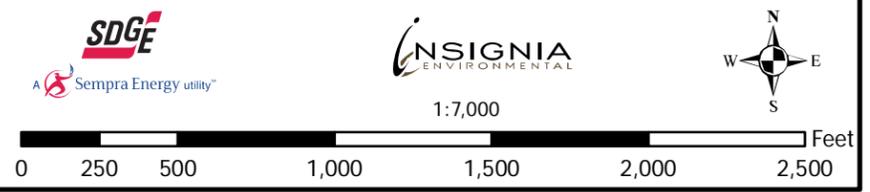
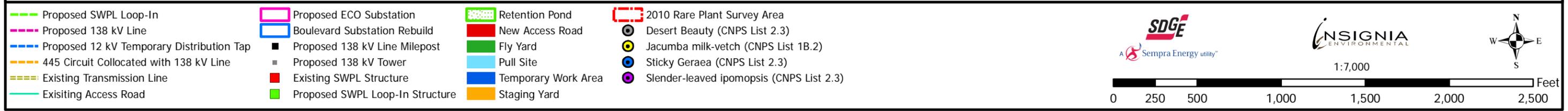
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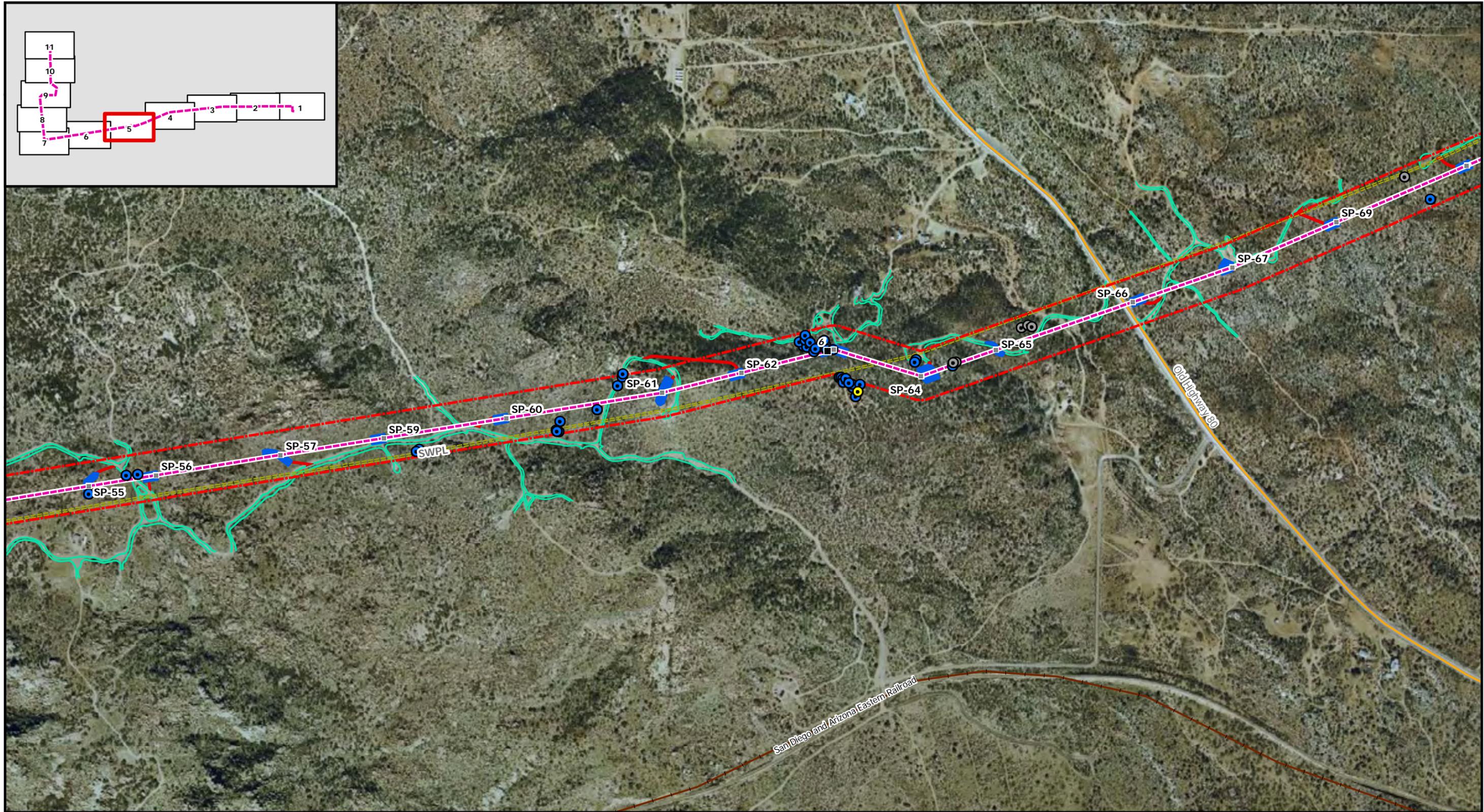
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Attachment C: Rare Plant Species Occurrences Map 4 of 11

East County Substation Project





Attachment C: Rare Plant Species Occurrences Map 5 of 11

East County Substation Project

- | | | | |
|---|---------------------------------|---------------------|--|
| Proposed SWPL Loop-In | Proposed ECO Substation | Retention Pond | 2010 Rare Plant Survey Area |
| Proposed 138 kV Line | Boulevard Substation Rebuild | New Access Road | Desert Beauty (CNPS List 2.3) |
| Proposed 12 kV Temporary Distribution Tap | Proposed 138 kV Line Milepost | Fly Yard | Jacumba milk-vetch (CNPS List 1B.2) |
| 445 Circuit Collocated with 138 kV Line | Proposed 138 kV Tower | Pull Site | Sticky Gerarea (CNPS List 2.3) |
| Existing Transmission Line | Existing SWPL Structure | Temporary Work Area | Slender-leaved ipomopsis (CNPS List 2.3) |
| Existing Access Road | Proposed SWPL Loop-In Structure | Staging Yard | |

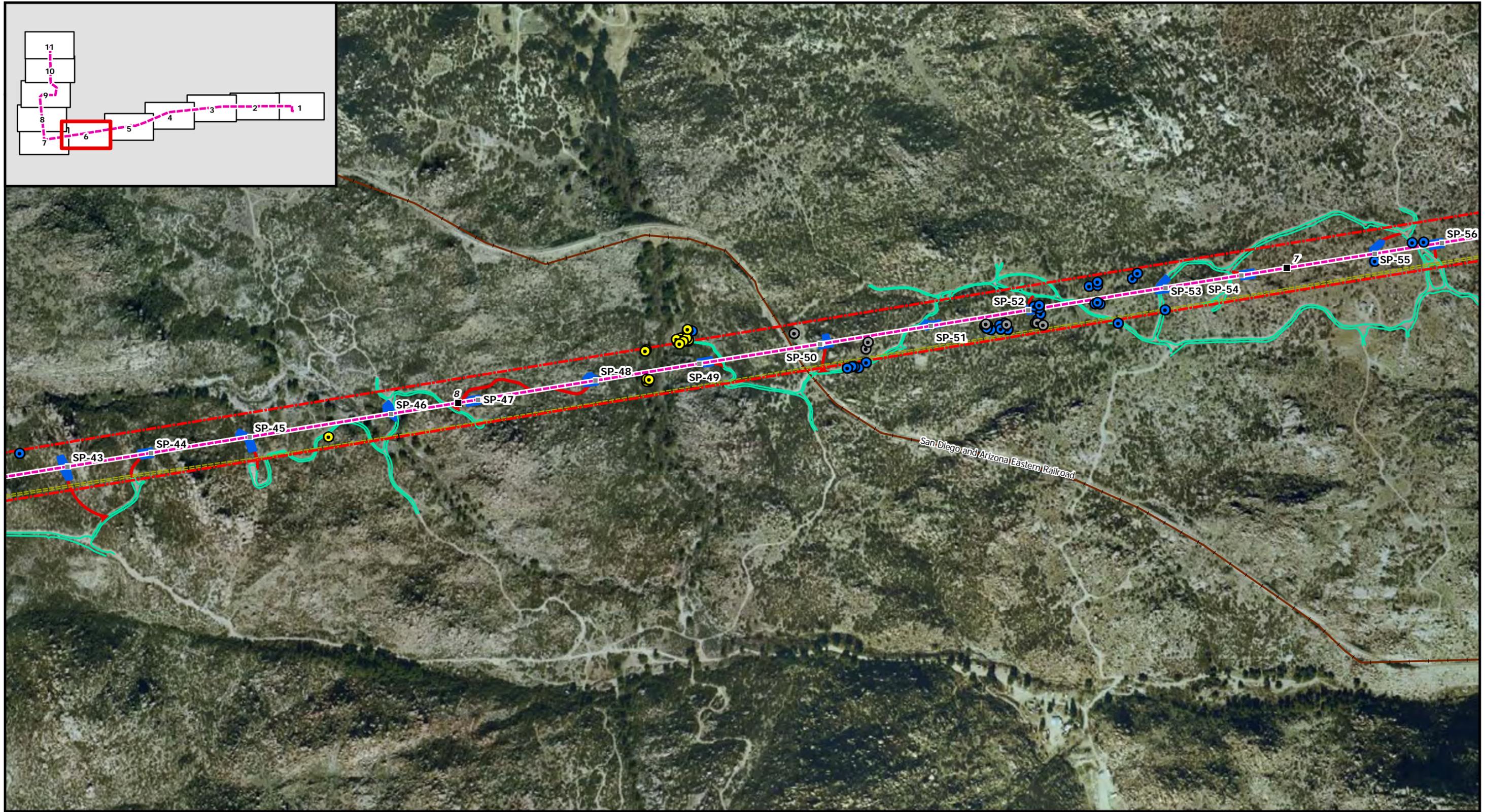
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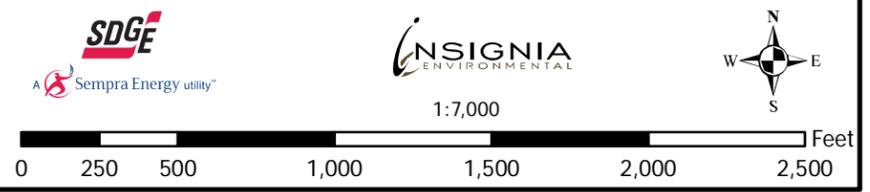
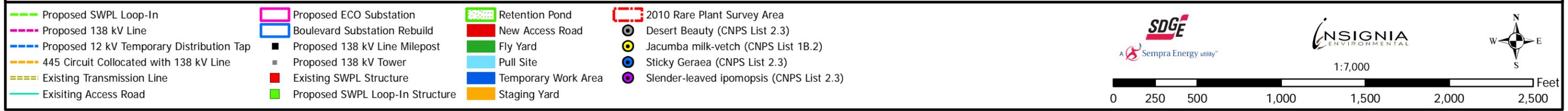
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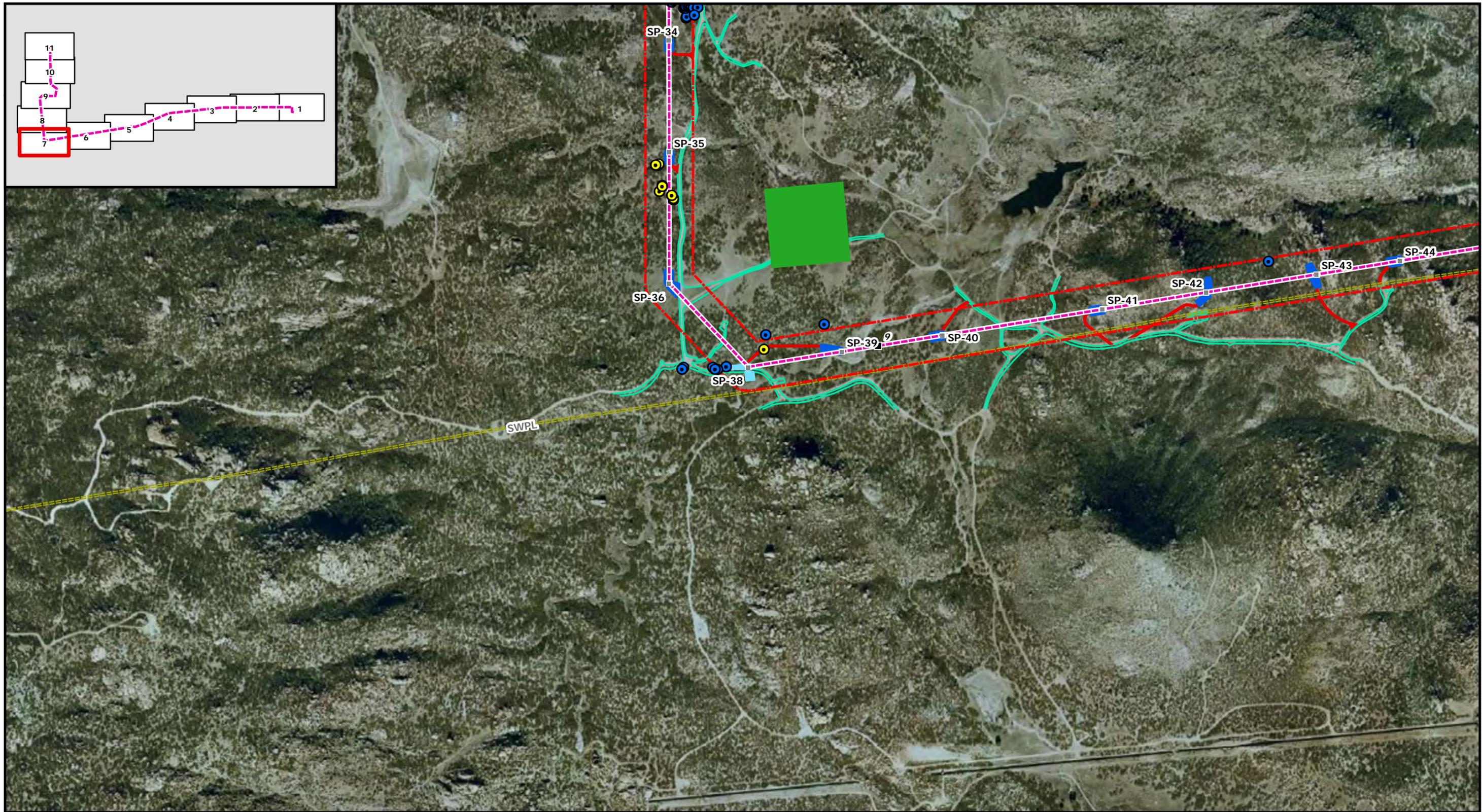
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Attachment C: Rare Plant Species Occurrences Map 6 of 11

East County Substation Project





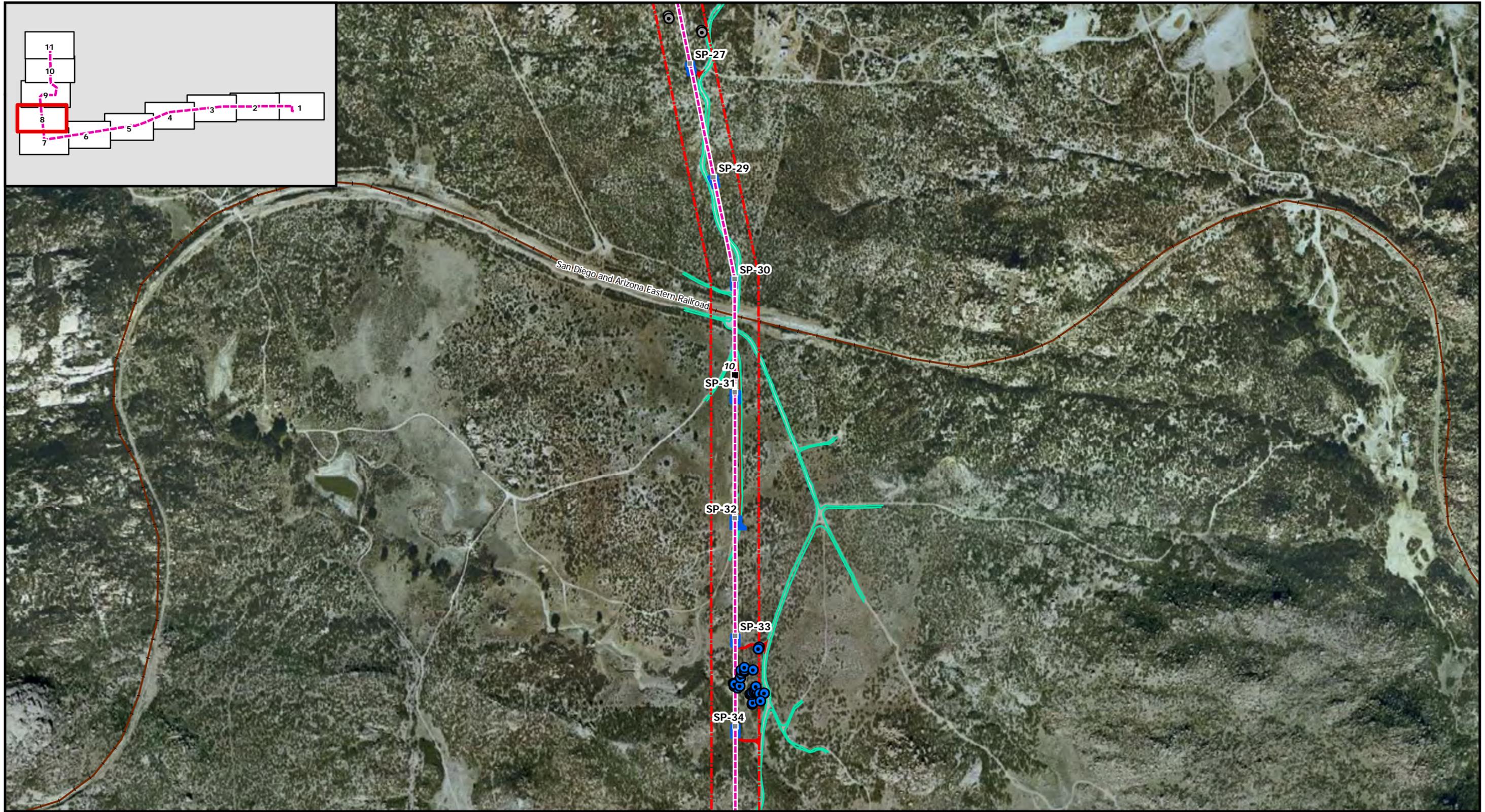
Attachment C: Rare Plant Species Occurrences Map 7 of 11

East County Substation Project

- | | | | |
|---|---------------------------------|---------------------|--|
| Proposed SWPL Loop-In | Proposed ECO Substation | Retention Pond | 2010 Rare Plant Survey Area |
| Proposed 138 kV Line | Boulevard Substation Rebuild | New Access Road | Desert Beauty (CNPS List 2.3) |
| Proposed 12 kV Temporary Distribution Tap | Proposed 138 kV Line Milepost | Fly Yard | Jacumba milk-vetch (CNPS List 1B.2) |
| 445 Circuit Collocated with 138 kV Line | Proposed 138 kV Tower | Pull Site | Sticky Gerarea (CNPS List 2.3) |
| Existing Transmission Line | Existing SWPL Structure | Temporary Work Area | Slender-leaved ipomopsis (CNPS List 2.3) |
| Existing Access Road | Proposed SWPL Loop-In Structure | Staging Yard | |

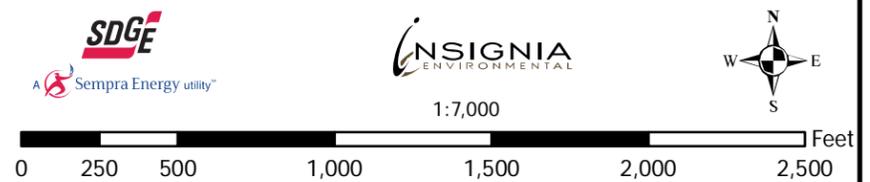
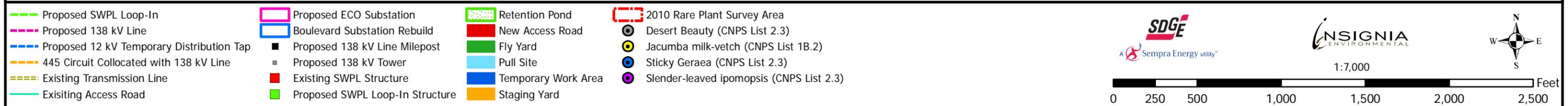
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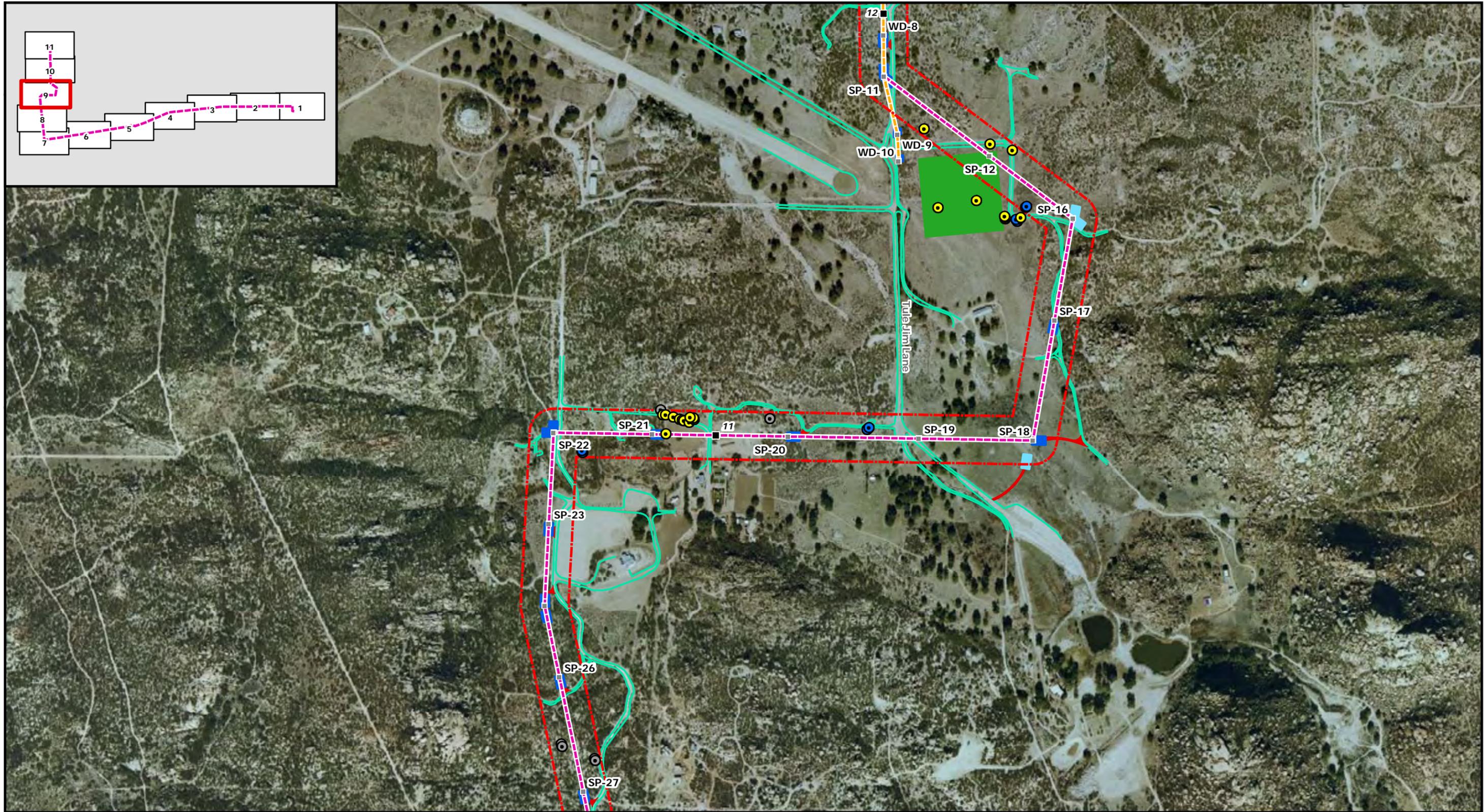
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Attachment C: Rare Plant Species Occurrences Map 8 of 11

East County Substation Project

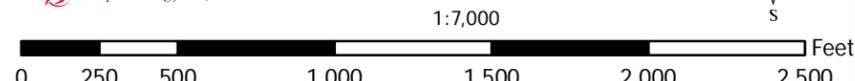


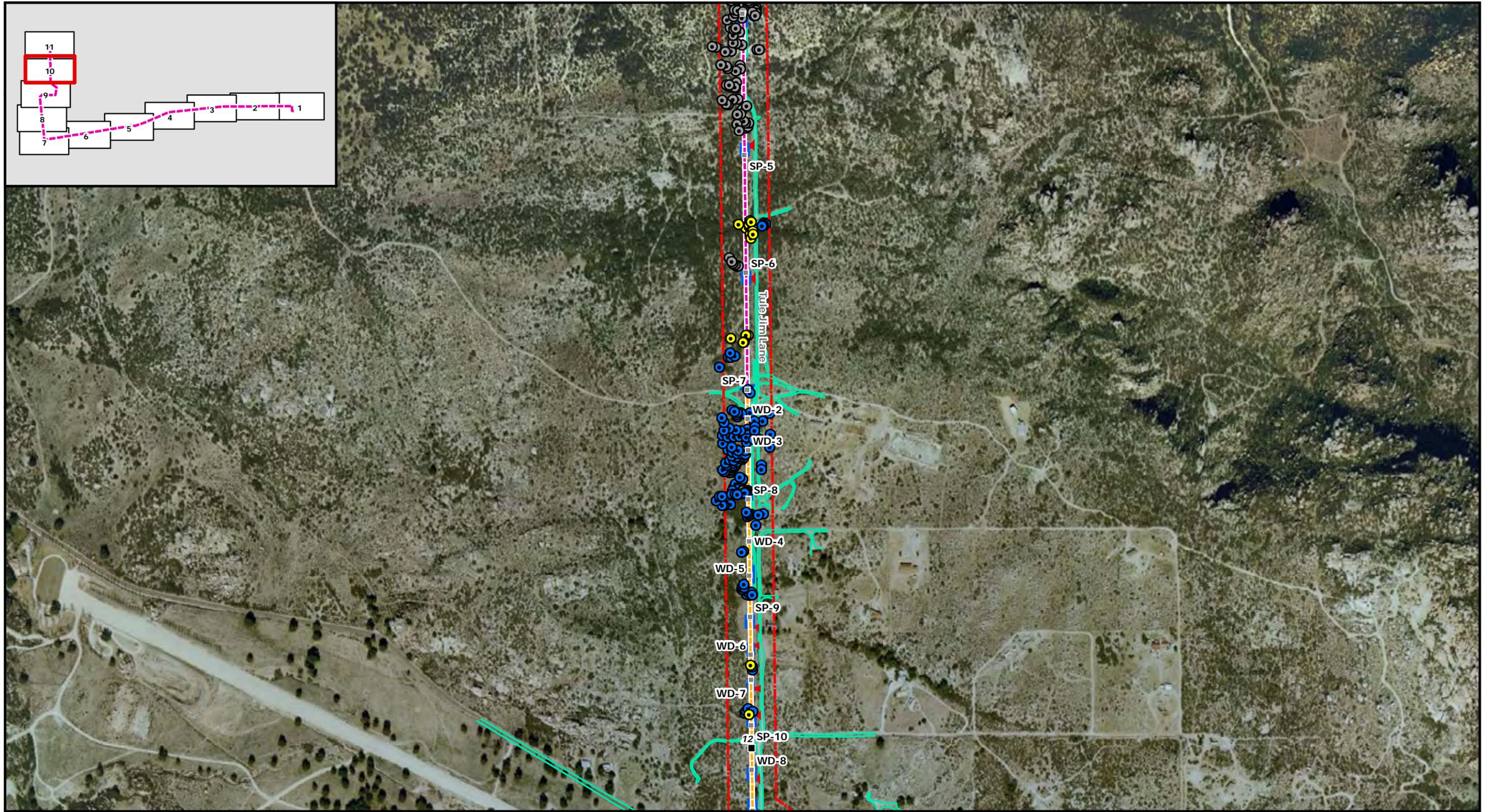


Attachment C: Rare Plant Species Occurrences Map 9 of 11

East County Substation Project

- | | | | |
|---|---------------------------------|---------------------|--|
| Proposed SWPL Loop-In | Proposed ECO Substation | Retention Pond | 2010 Rare Plant Survey Area |
| Proposed 138 kV Line | Boulevard Substation Rebuild | New Access Road | Desert Beauty (CNPS List 2.3) |
| Proposed 12 kV Temporary Distribution Tap | Proposed 138 kV Line Milepost | Fly Yard | Jacumba milk-vetch (CNPS List 1B.2) |
| 445 Circuit Collocated with 138 kV Line | Proposed 138 kV Tower | Pull Site | Sticky Gerarea (CNPS List 2.3) |
| Existing Transmission Line | Existing SWPL Structure | Temporary Work Area | Slender-leaved ipomopsis (CNPS List 2.3) |
| Existing Access Road | Proposed SWPL Loop-In Structure | Staging Yard | |



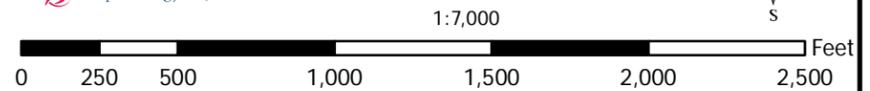


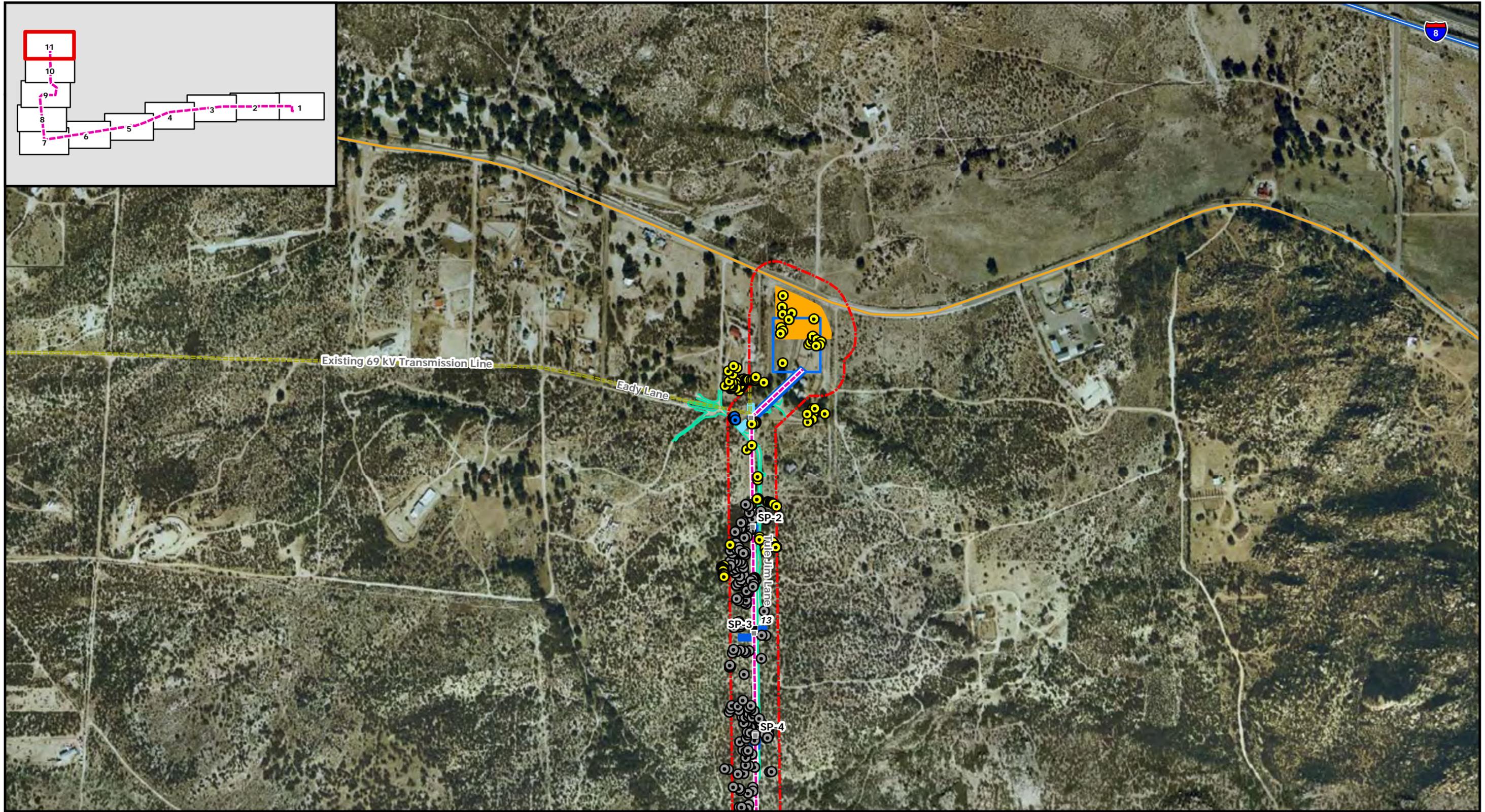
Attachment C: Rare Plant Species Occurrences Map 10 of 11

East County Substation Project

- Proposed SWPL Loop-In
- Proposed 138 kV Line
- Proposed 12 kV Temporary Distribution Tap
- 445 Circuit Collocated with 138 kV Line
- Existing Transmission Line
- Existing Access Road
- Proposed ECO Substation
- Boulevard Substation Rebuild
- Proposed 138 kV Line Milepost
- Proposed 138 kV Tower
- Existing SWPL Structure
- Proposed SWPL Loop-In Structure
- Retention Pond
- New Access Road
- Fly Yard
- Pull Site
- Temporary Work Area
- Staging Yard

- 2010 Rare Plant Survey Area
- ⊙ Desert Beauty (CNPS List 2.3)
- ⊙ Jacumba milk-vetch (CNPS List 1B.2)
- ⊙ Sticky Geræa (CNPS List 2.3)
- ⊙ Slender-leaved ipomopsis (CNPS List 2.3)





Attachment C: Rare Plant Species Occurrences Map 11 of 11

East County Substation Project

- | | | | |
|---|---------------------------------|---------------------|--|
| Proposed SWPL Loop-In | Proposed ECO Substation | Retention Pond | 2010 Rare Plant Survey Area |
| Proposed 138 kV Line | Boulevard Substation Rebuild | New Access Road | Desert Beauty (CNPS List 2.3) |
| Proposed 12 kV Temporary Distribution Tap | Proposed 138 kV Line Milepost | Fly Yard | Jacumba milk-vetch (CNPS List 1B.2) |
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| Existing Transmission Line | Existing SWPL Structure | Temporary Work Area | Slender-leaved ipomopsis (CNPS List 2.3) |
| Existing Access Road | Proposed SWPL Loop-In Structure | Staging Yard | |

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ATTACHMENT D: REPRESENTATIVE PHOTOGRAPHS



Photograph 1: Jacumba milk-vetch located along the access road, north of SP 21



Photograph 2: Jacumba milk-vetch located along the fence at the existing Boulevard Substation

Attachment D: Representative Photographs



Photograph 3: Sticky geraniums located along the access road south of SP 50



Photograph 4: Sticky geraniums flagged within an ephemeral drainage located near SP 52



Photograph 5: Slender-leaf ipomopsis located between SP 98 and SP 99



Photograph 6: Slender-leaf ipomopsis located between SP 98 and SP 99



Photograph 7: Two desert beauty individuals observed near SP 4



Photograph 8: A portion of a large population of desert beauty located near SP 3