# 4.4 Biological Resources

This section describes the biological resources along the IC Project Alignment. Potential impacts to biological resources during construction and operation of the IC Project and its Alternatives are also discussed.

#### 4.4.1 Methods

The following sections describe the methods used to conduct vegetation mapping and special-status plant and wildlife surveys along the 358-mile length of the IC Project Alignment, covering approximately 6,993 acres.

#### 4.4.1.1 Literature and Database Review

Biological resources data for the IC Project Alignment were obtained through a review of biological literature and databases. A desktop review was conducted to determine the potential for special-status plant and wildlife species to occur along the IC Project Alignment. To generate a list of potentially occurring special-status species along the IC Project Alignment, a database search of the California Natural Diversity Database (CNDDB) was conducted for U.S. Geological Survey 7.5-minute quadrangles that intersect the IC Project Alignment. The U.S. Fish and Wildlife Service Information for Consultation and Planning (IPaC) system was also queried for a list of federally-listed threatened, endangered, or candidate species that have the potential to occur in the vicinity of the IC Project Alignment.

The IC Project Alignment intersects 88 USGS quadrangles, which were queried for sensitive resource data: Alvord Mtn. East, Alvord Mtn. West, Baker, Barstow, Bartlett, Big Pine, Bishop, Blackrock, Bird Spring, Blackwater Mine, Boron, Boron NE, Boron NW, Camp Rock Mine, Castle Peaks, Cave Mountain, Cima Dome, Clark Mtn., Coso Junction, Cronese Lakes, Crystal Lake, Daggett, Dunn, East of Kingston Spring, East of Kingston Peak, East of Langford Well, El Paso Peaks, Fish Springs, Freeman Junction, Fremont Peak, Galileo Hill, Garlock, Haiwee Reservoirs, Harvard Hill, Hinkley, Horse Thief Springs, Independence, Indian Spring, Inyokern, Inyokern SE, Ivanpah, Ivanpah Lake, Johannesburg, Kingston Peak, Klinker Mountain, Kramer Hills, Kramer Junction, Lane Mountain, Leuhman Ridge, Little Lake, Lockhart, Lone Pine, Manix, Manzanar, Mescal Range, Mesquite Lake, Mineral Hill, Minneola, Mud Hills, Nebo, Newberry Springs, Nine-mile Canyon, Olancha, Owens Peak, Pachalka Springs, Pearsonville, Pinto Valley, Poleta Canyon, Red Mountain, Ridgecrest North, Ridgecrest South, Saddleback Mountain, Soda Lake North, Solomons Knob, State Line Pass, The Buttes, Tinemaha Reservoir, Troy Lake, Turquoise Mtn., Twelve Gauge Lake, Union Wash, Valley Wells, Valyermo, Vermillion Canyon, Walker Pass, West of Soda Lake, Williams Well, and Yermo.

The USFWS Critical Habitat Portal website Environmental Conservation Online System (ECOS; USFWS 2018) was reviewed. Additional literature and databases that were reviewed include the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (CNPS); the CalFlora Database (CalFlora); eBird website (Cornell University); California Fish Species website (UC 2018); California Herps: A Guide to the Amphibians and Reptiles of California website (CalHerps); California Wildlife Habitat Relationships software (CWHR); and BLM Sensitive plant and animal lists (BLM).

# 4.4.1.2 Field Survey Methods

Using the desktop results, field visits were conducted to assess biological resources along the IC Project Alignment. Biological reconnaissance surveys along the IC Project Alignment were conducted in spring and summer 2017 to document observations of biological resources, to map the vegetation present along the IC Project Alignment, and to evaluate the potential presence of habitat that might support special-

status plant and wildlife species. Additional targeted vegetation mapping and reconnaissance surveys for special-status wildlife species was completed in spring and summer 2018. Biological resources were documented, along with resources at known pulling/tensioning sites, laydown areas, and potential access routes. Reference sites for sensitive plant species were visited to verify phenology, potential presence, habitat, and diagnostic features. For additional information on methods utilized during the biological surveys, please see the TLRR Sensitive Species and Habitat Report: Ivanpah-Coolwater-Kramer-Inyokern 115 kV Subtransmission Line Project and the TLRR Sensitive Species and Habitat Report Control—Haiwee 115 kV Subtransmission Line Project in Appendix G to this PEA document.

The field survey area was a 150-foot-wide corridor spanning 75 feet on each side of the centerline for the entire IC Project Alignment, unless otherwise specified in the following sections. Table 4.4-1 summarizes the field surveys conducted along the IC Project Alignment.

Table 4.4-1: Biological Surveys Conducted along the IC Project Alignment

Type of Survey	Year	Date(s)	Segments
Vegetation Mapping	2017	April 3 – 18	2, 3N, 3S, and 4
Vegetation Mapping	2017	May 8 – 12	1
Vegetation Mapping	2018	April 2 – 6	2, 3N, 3S, and 4
Vegetation Mapping	2018	May $3-4$	1
Special-status Plants and Wildlife	2017	April 3 – 18	2, 3N, 3S, and 4
Surveys and Vegetation Mapping			
Special-status Plants and Wildlife	2017	May 8 – 12	1
Surveys and Vegetation Mapping			
Special-status Plants and Wildlife	2018	June 4 – 6	1
Surveys and Vegetation Mapping			
Special-status Plants and Wildlife	2018	July 16 – 17	1
Surveys and Vegetation Mapping			
Special-status Plants and Wildlife	2018	September 11	2, 3N, 3S, and 4
Surveys and Vegetation Mapping			
Burrowing Owl	2017	April 3 – 18	2, 3N, 3S, and 4
Burrowing Owl	2017	May 8 – 12	1
Burrowing Owl	2018	April 2 – 6	2, 3N, 3S, and 4
Desert Tortoise	2017	April 3 – 18	2, 3N, 3S, and 4
Desert Tortoise	2017	May 8 – 12	1
Desert Tortoise	2018	April 2 – 6	2, 3N, 3S, and 4
Mohave Ground Squirrel	2017	April 3 – 18	2, 3N, 3S, and 4
Mohave Ground Squirrel	2017	May 8 – 12	1
Mohave Ground Squirrel	2018	April 2 – 6	2, 3N, 3S, and 4

## 4.4.1.2.1 Vegetation Mapping

Vegetation mapping followed the CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment (CNPS 2016) and the California Manual of Vegetation, Second Edition (Sawyer, Keeler-Wolfe, and Evens 2009), including the updated California State Natural Communities List, also called the List of Vegetation Alliances and Associations. (CDFW 2018d) Vegetation mapping was conducted concurrently with special-status plant surveys. Botanical nomenclature follows the Jepson Manual: Vascular Plants of California, Second Edition (Baldwin et al. 2012); in addition, pertinent volumes of the Flora of North America (Flora of North America Editorial Committee, eds. 1993+) were utilized for plant identification.

## 4.4.1.2.2 Special-Status Plant Surveys

Botanical surveys for special-status plants were conducted during the appropriate blooming season for target special-status plant species that had a moderate or high potential to be present along the IC Project Alignment. When observed, potential special-status plant species were positively identified with technical keys and photographed. GPS data for each observation were collected using hand-held devices (Trimble R1 units and tablets or cell phones coupled with Fulcrum and TerraFlex, or ArcGIS Collector apps). Teams also recorded the number of individuals for each observation and phenology (blooming status, etc.). When feasible, reference sites of special-status plant species were visited prior to or during special-status plant surveys to assess blooming status, as well as to review plant characteristics to enhance field identification during surveys.

# 4.4.1.2.3 Special-Status Wildlife Surveys

Wildlife surveys included searching for and identifying species' diagnostic signs, including audible calls, prints, scat, nests, skeletal remains, burrows, and habitat features (i.e. rock or debris piles, cavities, and rock outcrops) that could support special-status species. Biologists walked parallel transects spaced approximately 33 feet apart at a pace of 1-1.5 mph along the entire IC Project Alignment. GPS data for each observation were collected using hand-held devices (Trimble R1 units and tablets or cell phones coupled with Fulcrum and TerraFlex, or ArcGIS Collector apps). Natural communities mapped during the field surveys were evaluated for suitability to support listed special-status wildlife species and habitat, along with elevation, topography, and other environmental variables. In most cases, special-status wildlife surveys were conducted concurrently.

## 4.4.1.2.4 Desert Tortoise Surveys

Protocol-level desert tortoise (*Gopherus agassizii*) surveys were performed along the IC Project Alignment in suitable habitat. Protocol-level desert tortoise surveys followed the survey methodology described in the Pre-project Field Survey Protocol (USFWS 2010), with a slight modification: with USFWS agreement, additional belt transects beyond the survey area were limited to a single 60-foot transect beyond the survey area perimeter. The surveys provided 100 percent visual coverage of the survey areas by spacing surveyors at 33-foot intervals in "belt transects," along the entire length of the 150-foot-wide survey corridor and anticipated disturbance areas, including tower locations, pulling and tensioning sites, and laydown yards (where known). All desert tortoise sign (e.g., live tortoises, burrows, scat, carcasses, and fragments thereof) were documented with GPS data collection and photographs.

### 4.4.1.2.5 Mohave Ground Squirrel Surveys

Mohave ground squirrel (*Xerospermophilus mohavensis*) surveys were conducted as part of the protocol desert tortoise surveys. Potential Mohave ground squirrel habitat occurs along the IC Project Alignment north and west of Barstow. Pedestrian surveys were conducted by spacing surveyors at 30-foot intervals to achieve 100 percent coverage for all project areas, including the 150-foot wide line corridor and anticipated disturbance areas including tower locations (100-foot radius area), pulling and tensioning sites, and laydown yards (where known). Surveyors examined potential burrows for presence and sign of Mohave ground squirrel presence and activity.

### 4.4.1.2.6 Burrowing Owl Surveys

Burrowing owl (*Athene cunicularia*) surveys were conducted as part of the general sensitive wildlife surveys. Pedestrian surveys were conducted by spacing surveyors at 30-foot intervals to achieve 100 percent coverage of the survey areas, including the 150-foot wide line corridor and anticipated

disturbance areas including tower locations (100-foot radius area), pulling and tensioning sites, and laydown yards (where known). Surveyors documented burrowing owl sightings, burrows, and burrowing owl sign (e.g. whitewash, pellets, feathers, etc.).

Details on the methodology for biological surveys are provided in Appendix G to this PEA document.

## 4.4.2 Environmental Setting

The IC Project Alignment is located primarily in the Owens Valley and the Mojave Desert in eastern California, passing through a range of elevations and habitats along its 358-mile extent. The IC Project Alignment is divided into five Segments (Figure 3.1-1):

- Segment 1 includes the Control-Coso-Haiwee-Inyokern 115 kV circuit and the Control-Haiwee-Inyokern 115 kV circuit. Segment 1 spans approximately 126 miles from the existing Control Substation in the north to the existing Inyokern Substation in the south.
- Segment 2 includes the Kramer-Inyokern-Randsburg No.1 115 kV circuit. Segment 2 spans approximately 48 miles from the existing Inyokern Substation in the north to the existing Kramer Substation in the south and includes the existing Randsburg Substation between the two.
- Segment 3 North (3N) includes the Kramer-Coolwater 115 kV circuit. Segment 3N spans approximately 44 miles from the existing Kramer Substation in the west to the existing Coolwater Substation in the east.
- Segment 3 South (3S) includes the Kramer-Tortilla 115 kV circuit and a portion of the Coolwater-SEGS2-Tortilla 115 kV circuit. Segment 3S spans approximately 44 miles from the existing Kramer Substation in the west to the existing Coolwater Substation in the east and includes the existing Tortilla Substation between the two.
- Segment 4 includes the Ivanpah-Baker-Coolwater-Dunn Siding-Mountain Pass 115 kV circuit. Segment 4 spans approximately 96 miles from the existing Coolwater Substation in the west to the existing Ivanpah Substation in the east, and includes the existing Dunn Siding, Baker, and Mountain Pass substations between the two.

### **4.4.2.1** Segment 1

Segment 1 extends from the Control Substation at the edge of Bishop Creek just southwest of Bishop in the Sierra Nevada foothills, and extends south down the Owens Valley to Little Lake and then south into the Indian Wells Valley where the Inyokern Substation is located.

### 4.4.2.1.1 Geography and Topography

Most of Segment 1 occurs on the lower slopes or on the valley floor of the Owens Valley, a north-south trending valley that extends from the headwaters of the Owens River north of the Mammoth Lakes area (north of the IC Project Alignment) south to the Little Lake area; it is bordered by the Sierra Nevada to the west and the White and Inyo mountain ranges to the east. At the Control Substation the elevation is approximately 4,400 feet, and it slowly drops as the IC Project Alignment descends the Owens Valley to the south.

The northern portion of the Owens Valley is located within the southwestern portion of the Great Basin Desert, a large basin and range "cold desert" that covers a large region between the Sierra Nevada and the Rocky Mountains that is typified by internally-draining watersheds, cold winters and dry hot summers, and a lack of shrublands dominated by creosote bush (*Larrea tridentata*). The Great Basin Desert region extends south from the Control Substation to the Owens (Dry) Lake area within the Owens Valley, with mean low elevations of 4,000 feet and mountain tops commonly exceeding 10,000 feet.

South of Owens Lake, creosote bush scrub becomes increasingly common along upland portions of the alignment, and this area falls within the northwestern reach of the Mojave Desert. The Mojave Desert is a mid-elevation desert confined to southeastern California and the southern tip of Nevada, with small extensions into northwestern Arizona and southwestern Utah. In California, the Mojave Desert is bounded to the northwest by the southern Sierra Nevada and the lowland portions of several mountain ranges (Inyo, Panamint, White Mountains, and others), to the west by the Tehachapi Mountains, to the southwest by the San Bernardino and San Gabriel mountains, and to the east by the lower Colorado River valley. The southern portion of Segment 1 enters the Mojave Desert at 3,600 feet amsl (above mean sea level) and drops to 2,290 feet at the southern terminus of Segment 1 at the Inyokern Substation.

## 4.4.2.1.2 Geology and Soils

The Owens Valley is a long narrow valley bordered by the towering granitic escarpment of the eastern Sierra Nevada to the west and the mosaic of sedimentary, metamorphic and volcanic rocks that form the Inyo and White mountains to the east. Evidence of past volcanic flows are frequent along Segment 1, including the Bishop Volcanic Tableland, Crater Mountain, Red Mountain, the Poverty Hills, the Alabama Hills, and Red Hill near Little Lake, among others. Because Segment 1 lays mostly to the west of the Owens River, granitic and volcanic alluvial and colluvial materials arising from the Sierra Nevada contributed a disproportionate quantity of sediments along the alignment. These soils vary from gravels and sands to granitic boulders, metamorphic rocks, limestone, and alluvial silts and clays, as well as sediments derived from lava, ash, pumice, and tuffs. (Hollett et al. 1991) Soils along the IC Project Alignment vary in water holding capacity, chemistry, nutrient content, texture, and other variables, which affect the species composition of a given vegetation type at a given location.

## **4.4.2.1.3** Hydrology

The Owens River is fed by many tributaries with headwaters in the adjacent mountain ranges, and several lakes, marshes, and playas dot the IC Project Alignment intermittently from the Control Substation south to Little Lake. Along much of the Owens River drainage, aquifers are replenished annually from runoff originating in the Sierra Nevada as well as from precipitation, and groundwater is often near the soil surface. (Hollett et al. 1991) South of Little Lake to the Inyokern Substation, where runoff quantities are minimal, precipitation provides most of the annual water budget for native vegetation; the Indian Wells Valley is bisected by numerous ephemeral washes but no permanent drainages or water bodies (Danskin 1998).

#### 4.4.2.1.4 Climate

In Bishop, at the north end of the IC Project Alignment, yearly precipitation averages 5.2 inches. Precipitation in winter often falls as snow; most months record some precipitation, which can average as low as 0.13 inches between June and October. (Western Regional Climate Center 2018) Temperatures in the Bishop area exhibit seasonal extremes, with a mean annual temperature of 56.4° Fahrenheit (°F), an average maximum July temperature of 98°F, and an average January minimum temperature of 22°F. An average of 97 days reach temperatures above 90°F each year, with average yearly temperatures below freezing recorded for 143 days. (Western Regional Climate Center 2018)

### 4.4.2.2 Segments 2, 3N, 3S, and 4

The entirety of Segments 2, 3N, 3S, and 4 between the Inyokern Substation and the Ivanpah Substation lie within the Mojave Desert (see Figure 3.1-1).

## 4.4.2.2.1 Geography and Topography

Like the Great Basin Desert, the Mojave Desert also includes basin and range topography, but the basins are broad and often filled with alluvial deposits from the eroding north-south trending mountains that rise above the landscape. Mountain ranges tend to be shorter in length than the elongate Sierra Nevada or Inyo Mountains, and are less aligned than those in the Great Basin Desert. The western Mojave Desert, west of Yermo, consists of a fairly flat triangular plain, bordered south of Barstow by the Mojave River to the east; the Mojave River enters the Barstow area from its headwaters in the San Bernardino Mountains. At Barstow, the Mojave River turns east and flows generally east-northeast towards its eastern inland terminus at Soda Lake south of Baker.

Segment 2 passes through the Rand and El Paso mountains south of the Inyokern Substation in the Indian Wells Valley and terminates at the Kramer Substation. Segments 3N and 3S both originate at the Kramer Substation. Segment 3N passes along the southern edge of Harper (Dry) Lake through the Waterman Hills before it turns south, crosses the Mojave River, and terminates at the Coolwater Substation. Segment 3S crosses the Mojave River just south of Hinkley, and passes through the northeastern foothills of Daggett Ridge and the Newberry Mountains, where it reaches the Coolwater Substation. Segment 4 crosses the Mojave River, follows the Mojave River drainage east of the Coolwater Substation, passes through small portions of the Cady and Soda mountains as well as through the Silurian Valley at Baker, and passes through smaller ridges and mountains before reaching the Shadow Valley, the Clark Mountains, and the Ivanpah Valley, where the Ivanpah Substation is located. Elevations vary but average approximately 3,000 feet; the highest elevation along the eastern IC Project Alignment is approximately 5,400 feet in the Clark Mountains near Mountain Pass.

## 4.4.2.2.2 Geology and Soils

This region is characterized by rugged block-faulted mountain ranges separated by broad basins. Mountains are often formed from granitic bedrock, and volcanic fields and cinder cones occur in places, along with complex other rock types, including those containing limestone, rare earth minerals, silver, and other minerals and rock types. The lowest basins contain ephemeral lakes, or playas, with either clay or saline beds. Soils vary from gravels and sands to granitic boulders, limestone, and alluvial silts and clays. These soils vary in water holding capacity, chemistry, nutrient content, texture, and other variables, which affect the species composition of any given vegetation type.

### **4.4.2.2.3** Hydrology

Like those in Segment 1, rivers and drainages along Segments 2, 3N, 3S, and 4 never reach the sea, but terminate in dry lakes or basins. The Mojave River is generally dry at all four locations where it overlaps the IC Project Alignment in the Barstow/Hinkley/Daggett area. During intense storms, Mojave River surface waters can temporarily overflow and fill East Cronese Lake. The Mojave River currently appears dry in many places, with deep pervious sands except where impervious granite outcroppings near the surface allows for surface flows such as in Afton Canyon. (Norris and Webb 1990) With the exception of the intermittent flows of the Mojave River and several smaller ephemeral streams, most drainages consist of ephemeral dry washes that only hold water for a short duration resulting from seasonal precipitation.

### 4.4.2.2.4 Climate

Yearly precipitation in Barstow averages 4.4 inches. The highest rainfall is recorded during the winter months (December to March), when frontal systems bring about 0.5 to 0.75 inches to the area each month. Summer thundershowers deliver an average of 0.25 inches between July and October. May and June are the driest months (0.08 to 0.13 inches monthly; Western Regional Climate Center 2018).

Temperatures in the Barstow area exhibit seasonal extremes, with a mean annual temperature of 63.9°F, an average maximum July temperature of 102.4°F, and an average January minimum temperature of 31.2°F. An average of 130 days reach temperatures above 90°F each year, with average yearly temperatures below freezing recorded for 60.3 days. (Western Regional Climate Center 2018)

# 4.4.3 Biological Resources

This section describes the biological resources that occur or have the potential to occur along the IC Project Alignment. The following subsections describe the general vegetation community types, sensitive natural communities, and wildlife populations and movement patterns along the IC Project Alignment, as well as special-status plant and wildlife species that are either known to occur or have the potential to occur.

Surveys were conducted within the IC Project Alignment to evaluate and inventory biological resources. Details on the biological surveys and existing conditions can be found in Appendix G to this PEA document.

### 4.4.3.1 Natural Communities and Land Cover

Fifty-nine alliances and 48 associations were identified during the 2017 and 2018 surveys; the identified alliances include 9 woodland alliances, 35 shrubland alliances, and 15 herbaceous alliances. A summary of vegetation alliances identified is presented in Table 4.4-2. Eight additional vegetation types were also mapped that address agricultural and landscape plantings, open water, barren areas, developed areas, and disturbed areas. Figureset 4.4-1 shows the vegetation alliances along the IC Project Alignment.

Table 4.4-2: Natural Communities and Land Cover Types Mapped along the IC Project Alignment

Vegetation Alliance	Vegetation Association	Total Acres Mapped on IC Project Alignment	Area Mapped within Anticipated IC Project Work Areas (acres) 1	California State Rarity Ranking
Fremont cottonwood forest	Populus fremontii Woodland Alliance	9.0	5.3	S3.2
remont cottonwood forest	Yucca brevifolia Woodland Alliance	27.7	15.4	S3.2
	Yucca brevifolia / Coleogyne ramosissima Association	56.1	0	S3.2
Joshua tree woodland	Yucca brevifolia / Larrea tridentata - Ambrosia dumosa Association	94.2	8.9	S3.2
	Yucca brevifolia / Larrea tridentata - Yucca schidigera Association	70.2	9.6	S3.2
	Yucca brevifolia / Larrea tridentata / Pleuraphis rigida Association	4.8	1.2	S3.2
Shining willow groves	Salix lucida Woodland Alliance	0.7	0.2	S3.2
Utah juniper woodland	Juniperus osteosperma / Coleogyne ramosissima Association	12.8	0	S3.2
Black willow thickets	Salix gooddingii Woodland Alliance	3.1	0.1	S3
Desert-willow - smoketree wash	Chilopsis linearis Association	1.7	0	S3
woodland	Chilopsis linearis / Ambrosia salsola Association	1.5	0.6	S3
Mesquite thickets	Prosopis glandulosa var. torreyana Alliance	7.1	0.9	S3
Red willow thickets	Salix laevigata Woodland Alliance	2.6	1.7	S3
Singleleaf pinyon - Utah juniper woodlands  Pinus monophylla - Juniperus osteosperma / Coleogyne ramosissima Association		10.2	0	Yes <sup>2</sup>
Total Acres Woodland Vegetation	n	301.7	43.9	

Table 4.4-2: Natural Communities and Land Cover Types Mapped along the IC Project Alignment

Vegetation Alliance	Vegetation Association	Total Acres Mapped on IC Project Alignment	Area Mapped within Anticipated IC Project Work Areas (acres) <sup>1</sup>	California State Rarity Ranking
Water birch thicket	Betula occidentalis Shrubland Alliance	0.2	0.1	S2.2
Smokebush desert scrub <sup>3</sup>	Psorothamnus polydenius Provisional Association	44.5	31.1	S2
Basket bush - river hawthorn - desert olive patches	Forestiera pubescens Provisional Association	0.2	0.2	S3.2
	Prunus fasciculata - Salazaria mexicana Association	0.9	0	S3.3
Desert almond - Mexican	Prunus fasciculata Association	4.3	0.5	S3.3
bladdersage scrub	Salazaria mexicana Association	0.8	0	S3.3
	Salvia dorrii Wash Association	7.5	0.8	S3.3
Acton's and Virgin River brittle brush - net-veined goldeneye scrub	Encelia actoni Association	3.5	1.1	S3
Bitter brush scrub	Purshia tridentata Shrubland Alliance	2.0	0.8	S3
Bush seepweed scrub	Suaeda nigra [moquinii] Shrubland Alliance	1.5	0	S3
Parry's saltbush scrub	Atriplex parryi Shrubland Alliance	0.5	0	S3
Scalebroom scrub	Lepidospartum squamatum Shrubland Alliance	6.4	0	S3
Spiny menodora scrub	Menodora spinescens Shrubland Alliance	3.7	0.8	S3
Winterfat scrubland	Krascheninnikovia lanata Shrubland Alliance	4.6	0.9	S3
Sandbar willow thickets	Salix exigua Shrubland Alliance	9.3	3.1	S4.2
Shadscale scrub	Atriplex confertifolia Shrubland Alliance	262.7	103.2	S4.2
Shauscale setub	Atriplex confertifolia Sparse Playa Association	9.5	3.3	S4.2
Spinescale scrub	Atriplex spinosa Shrubland Alliance	245.8	106.2	S4.2
	Atriplex polycarpa Shrubland Alliance Atriplex polycarpa - Ambrosia salsola		234	S4
Allscale scrub	Association	9.5	3.1	S4
	Atriplex polycarpa Sparse Playa Association	30.4	13	S4
Arroyo willow thickets	Salix lasiolepis - Salix lucida Association	0.1	0	S4
Black brush scrub	Coleogyne ramosissima Shrubland Alliance	192.9	63.4	S4
Brittle bush scrub	Encelia farinosa Shrubland Alliance	6.0	0	S4
California joint-fir - longleaf joint-fir scrub	Ephedra californica Association	5.3	0.6	S4
Catalana and 1 11 1	Senegalia greggii Wash Association	3.6	0.6	S4
Catclaw acacia - desert lavender - chuparosa scrub	Senegalia greggii - Ambrosia salsola Association	14.3	1.8	S4
	Ambrosia salsola – Bebbia juncea Shrubland Alliance	0.9	0	S4
Cheesebush - sweetbush scrub	Ambrosia salsola Association	33.9	13.8	S4
	Ambrosia salsola – Atriplex confertifolia Association	52.1	24.5	S4

Table 4.4-2: Natural Communities and Land Cover Types Mapped along the IC Project Alignment

Vegetation Alliance	Vegetation Association	Total Acres Mapped on IC Project Alignment	Area Mapped within Anticipated IC Project Work Areas (acres) <sup>1</sup>	California State Rarity Ranking
9	Senna armata - Ambrosia salsola Association	1.9	0	S4
	Ambrosia salsola / Stephanomeria pauciflora Provisional Association <sup>3</sup>	8.3	3.5	S4
Creosote bush - brittle bush scrub	Larrea tridentata – Encelia farinosa Shrubland Alliance	7.9	0	S4
n : 11 1 1	Atriplex canescens Shrubland Alliance	193.8	64.2	S4
Fourwing saltbush scrub	Atriplex canescens / herbaceous Provisional Association	1.9	0.5	Yes <sup>2</sup>
Greasewood scrub	Sarcobatus vermiculatus Shrubland Alliance	172.4	77.3	S4
Grease wood seruo	Sarcobatus vermiculatus Sparse Playa Provisional Association	8.7	5.3	S4
Mojave yucca scrub	Yucca schidigera / Larrea tridentata - Ambrosia dumosa Association	16.9	1.4	S4
Needleleaf rabbitbrush scrub	Ericameria teretifolia Shrubland Alliance	0.9	0.8	S4
Nevada joint fir - Anderson's boxthorn - spiny hop-sage scrub	Ephedra nevadensis – Lycium andersonii – Grayia spinosa Shrubland Alliance	41.9	19.9	S4
boxtnorn - spiny nop-sage scrub	Ephedra nevadensis – Ericameria teretifolia Provisional Association	14.4	7.7	S3 <sup>2</sup>
Cooper's Goldenbush Provisional Scrub <sup>3</sup>	Ericameria cooperi Provisional Shrubland Association	12.9	6.5	No
	Atriplex lentiformis Shrubland Alliance	0.7	0	S4
Quailbush scrub	Atriplex torreyi Provisional Association	116.5	45	Yes <sup>2</sup>
	Atriplex lentiformis/Sporobolus airoides Provisional Alliance	0.8	0.5	S4
Big sagebrush	Artemisia tridentata Shrubland Alliance	69.1	38.7	S5
	Larrea tridentata Shrubland Alliance	1,179.1	303.5	S5
	Larrea tridentata - Atriplex polycarpa Association	36.9	3.8	S5
	Larrea tridentata – Atriplex confertifolia Association	11.4	5.5	S5
Creosote bush scrub	Larrea tridentata – Ephedra nevadensis Association	0.2	0.1	S5
	Larrea tridentata / Pleuraphis rigida Association	22.5	0	S3
	Larrea tridentata / Senna armata Provisional Association	1.4	0	S5
	Larrea tridentata - Ambrosia dumosa Shrubland Alliance	1,884.7	339.2	S5
Creosote bush - white bursage scrub	Larrea tridentata - Ambrosia dumosa - (Ephedra nevadensis - Lycium andersonii) Association	4.2	0	S5
	Larrea tridentata - Ambrosia dumosa - Senna armata Association	23.7	0	S5

Table 4.4-2: Natural Communities and Land Cover Types Mapped along the IC Project Alignment

Vegetation Alliance	Vegetation Association	Total Acres Mapped on IC Project Alignment	Area Mapped within Anticipated IC Project Work Areas (acres) <sup>1</sup>	California State Rarity Ranking
8	Larrea tridentata - Ambrosia dumosa / Pleuraphis rigida Association	18.3	0	S3
Rubber rabbitbrush scrub	Ericameria nauseosa Shrubland Alliance	135.1	57	S5
	Ambrosia dumosa Shrubland Alliance	239.6	86	S5
White bursage scrub	Ambrosia dumosa / Pleuraphis rigida Shrubland Alliance	3.5	0.5	
Tamarisk thickets	Tamarix spp. Thickets	59	15.4	None
Total Acres Shrubland Vegetation	n	5,874.9	1689.2	
Alkali sacaton grassland	Sporobolus airoides Herbaceous Alliance	38.1	16.2	S2.2
Big galleta shrub-steppe	Pleuraphis rigida/Atriplex canescens Association	2.6	0.6	S2.2
Yerba mansa - Nuttall's	Anemopsis californica Association	3.3	1.6	S2
sunflower - Nevada goldenrod alkaline wet meadows	Anemopsis californica – Juncus arcticus var. mexicanus Association	0.9	0.7	S2
American bulrush marsh	Schoenoplectus americanus Herbaceous Alliance	0.1	0.1	S3.2
Mojave-Sonoran desert dunes	Dicoria canescens – Abronia villosa - Panicum urvilleanum Sparsely Vegetated Alliance	0.9	0	S3.2
Brittle Spineflower - Field Suncup Provisional Desert Pavement Sparsely Vegetated Alliance <sup>3</sup>	Chorizanthe brevicornu – Camissonia campestris Provisional Desert Pavement Herbaceous Stands	2.1	0	S3
Wire Lettuce - Brittle Spineflower Lava Flows <sup>3</sup>	Stephanomeria pauciflora – Chorizanthe brevicornu Provisional Herbaceous Alliance	8.1	5.9	S3
Baltic and Mexican rush marshes	Juncus arcticus (var. balticus, mexicanus) Herbaceous Alliance	78.5	37	S4
Common reed marshes	Phragmites australis Herbaceous Alliance	1.1	0.2	S4
Hardstem bulrush marsh	Schoenoplectus acutus Herbaceous Alliance	0.9	0.5	S4
	Distichlis spicata Herbaceous Alliance	45.1	20.1	S4
Salt grass flats	Distichlis spicata - Sporobolus airoides Provisional Association <sup>3</sup>	1.3	0.4	S4
Cattail marshes	Typha (angustifolia, domingensis, latifolia) Herbaceous Alliance	1.1	0.4	S5
Canan marsics	Typha angustifolia – Distichlis spicata Association	1.5	1.5	S5
Cheatgrass - medusahead grassland	Bromus tectorum Association	37.3	24	None
Red brome or Mediterranean grass grasslands	Bromus rubens – Schismus (arabicus, barbatus) Semi-Natural Stands	14.5	0.6	None
Sparsely vegetated playa	Sparsely vegetated playa Sparsely Vegetated Playa/ Herbaceous Association		1.7	Unknown
Total Acres Herbaceous Vegetati	on	245.9	111.5	
Total Acres Native Vegetation		6,311.7	2,529.7	
Total Acres Non-native Vegetation	on .	110.8	51.4	
Total Acres All Vegetation		6,422.5	1844.6	

Table 4.4-2: Natural Communities and Land Cover Types Mapped along the IC Project Alignment

Vegetation Alliance	Vegetation Association	Total Acres Mapped on IC Project Alignment	Area Mapped within Anticipated IC Project Work Areas (acres) <sup>1</sup>	California State Rarity Ranking
Active Agriculture		25.6	6.9	None
Ornamental / Landscaped		9.9	4.5	None
Open Water		4.0	0.2	None
Disturbed (cleared area supporting ruderal vegetation, if any)	_	11	4	None
Barren		0.4	0.1	None
Unvegetated Wash or River Bottom	_	13.5	1	None
Developed				
Developed (towers, roads, etc.)	_	725.9	236.2	None
Total Acres All Areas		7,212.8	2097.6	

Undeveloped lands account for approximately 90 percent of the survey area. Shrublands account for 91 percent of the vegetated areas along the IC Project Alignment, with desert scrub vegetation dominated by creosote bush (*Larrea tridentata*) and/or white bursage (*Ambrosia dumosa*) covering 54 percent of the survey area between the Control Substation and the Ivanpah Substation. Desert scrub vegetation is especially common in Segments 2, 3N, 3S, and 4, and in Segment 1 south of the Haiwee Substation. Shrublands dominated by one of several species of saltbush (*Atriplex*) occur along the IC Project Alignment from the Control Substation south to Little Lake and occupy lowlands and playas throughout the IC Project Alignment area; these shrublands cover approximately 25 percent of the IC Project Alignment. Tree-dominated vegetation occurs most frequently at higher elevations along the IC Project Alignment, such as near Mountain Pass in Segment 4, as well as along streams and portions of the Owens River at the north end of Segment 1 in the Owens Valley. Herbaceous vegetation is generally scarce, covering less than 4 percent of the IC Project Alignment, and is most common in the moist alkali meadows and freshwater wetlands in the Owens River Valley. Vegetation dominated by non-native species accounts for less than 2 percent of all vegetated areas.

These alliances and associations support a diverse range of wildlife species, including nesting and foraging birds and raptors, mammals (especially rodents), reptiles, amphibians, and invertebrates. New growth and blooming in spring and summer provides forage and nectar sources for many wildlife species, and vegetation associated with wetlands and drainages can be disproportionately important as wildlife habitat due to the availability of surface water, at least seasonally. Descriptions of each natural community are provided in Appendix G to this PEA document.

#### 4.4.3.2 Sensitive Natural Communities

Sensitive natural communities are defined as communities of limited distribution within California or within a county or region. These communities may or may not contain special status species. CDFW has assigned Alliance Rarity Ratings to alliances included in the California Manual of Vegetation, Second Edition (Sawyer et al. 2009) and in the updated California State Natural Communities List. (CDFW 2018d) Sensitive natural communities are treated by CDFW as alliances or associations with "threat" ranks of S3 or higher (S1, S2, S3), whereas S4 and S5 rankings are not designated as sensitive or threatened. (CDFW 2018d) The state ranking system for S3 and above includes the estimated number of existing acres in California for the sensitive natural communities. 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.
- 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.
- 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.

Table 4.4-3 lists the 31 sensitive natural communities observed within the IC Project Alignment, which are shown on Figureset 4.4-1.

Table 4.4-3: Sensitive Natural Communities Mapped along the IC Project Alignment

### Sensitive Woodland Alliances and Associations

Riparian woodland and forest alliances (all associations sensitive within observed alliances)

Fremont Cottonwood Forest (Populus fremontii Forest Alliance)

Black Willow Thickets (Salix gooddingii Woodland Alliance)

Red Willow Thickets (Salix laevigata Woodland Alliance)

Shining Willow Groves (Salix lucida Woodland Alliance)

Desert wash alliances (all associations sensitive within observed alliances)

Desert-willow - Smoketree Wash Woodland (Chilopsis linearis - Psorothamnus spinosus Woodland Alliance)

Mesquite Thickets (Prosopis glandulosa - Prosopis velutina – Prosopis pubescens Woodland Alliance)

Upland alliances (all alliances and their associations are sensitive unless a sensitive association is included within a non-sensitive alliance)

Joshua Tree Woodland (Yucca brevifolia Woodland Alliance)

Utah Juniper Woodland (*Juniperus osteosperma* Woodland Alliance)

Pinus monophylla - Juniperus osteosperma / Coleogyne ramosissima Association

### Sensitive Shrubland Alliances and Associations

Riparian shrubland alliances (all associations sensitive within observed alliances)

Water Birch Thicket (*Betula occidentalis* Shrubland Alliance)

Basket Bush - River Hawthorn - Desert Olive Patches (*Rhus aromatica* [trilobata] - Crataegus rivularis - Forestiera pubescens Shrubland Alliance)

Desert wash alliances (all associations sensitive within observed alliances)

Acton's and Virgin River Brittle Brush - Net-Veined Goldeneye Scrub (*Encelia [actoni, virginensis] - Viguiera reticulata* Shrubland Alliance)

Scalebroom Scrub (*Lepidospartum squamatum* Shrubland Alliance)

Desert Almond - Mexican Bladdersage Scrub (Prunus fasciculata - Salazaria mexicana Shrubland Alliance)

Smokebush Desert Wash Scrub (Psorothamnus [fremontii, polydenius] Shrubland Alliance)

Alkaline slopes, flats, and playas alliances (all alliances and their associations are sensitive unless a sensitive association is included within a non-sensitive alliance)

Atriplex canescens / herbaceous Association

Atriplex lentiformis/Sporobolus airoides Provisional Association

Atriplex torreyi Provisional Association

Parry's Saltbush Scrub (Atriplex parryi Shrubland Alliance)

Bush Seepweed Scrub (Suaeda nigra [moquinii] Shrubland Alliance)

Upland alliances in rocky substrates (all alliances and their associations are sensitive unless a sensitive association is included within a non-sensitive alliance)

Ephedra nevadensis – Ericameria teretifolia Provisional Association

Winterfat Scrubland (Krascheninnikovia lanata Shrubland Alliance)

Spiny Menodora Scrub (Menodora spinescens Shrubland Alliance)

Upland alliances in sandy soils (all alliances and their associations are sensitive unless a sensitive association is included within a non-sensitive alliance)

Table 4.4-3: Sensitive Natural Communities Mapped along the IC Project Alignment

Larrea tridentata / Pleuraphis rigida Association

Larrea tridentata - Ambrosia dumosa / Pleuraphis rigida Association

#### Sensitive Herbaceous Alliances and Associations

Marshes and moist edge alliances (all associations sensitive within observed alliances)

Yerba Mansa - Nuttall's Sunflower - Nevada Goldenrod Alkaline Wet Meadows (*Anemopsis californica – Helianthus nuttallii – Solidago spectabilis* Herbaceous Alliance)

American Bulrush Marsh (Schoenoplectus americanus Herbaceous Alliance)

Alkali Sacaton Grassland (Sporobolus airoides Herbaceous Alliance)

Distinctive substrates (sandy, desert pavement, lava flows - all associations sensitive within observed alliances)

Mojave – Sonoran Desert Dunes (*Dicoria canescens – Abronia villosa - Panicum urvilleanum* Sparsely Vegetated Alliance)

Brittle Spineflower - Field Suncup Provisional Desert Pavement Sparsely Vegetated Alliance (*Chorizanthe brevicornu – Camissonia campestris* Provisional Desert Pavement Herbaceous Stands)

Wire Lettuce - Brittle Spineflower Lava Flows (*Stephanomeria pauciflora - Chorizanthe brevicornu* Provisional Herbaceous Alliance)

Joshua Tree Woodland is the sensitive natural community that occupies the largest area (253 acres) along the IC Project Alignment; this community is found mostly in large stands from Halloran Summit east to the Ivanpah Valley.

Riparian vegetation is considered a sensitive natural community in California because it often provides suitable habitat for special status plant and wildlife species. More than 180 acres of riparian and wetland vegetation were mapped along the IC Project Alignment, including but not limited to Fremont Cottonwood Forest, Shining Willow Thickets, Black Willow Thickets, Mesquite Thickets, Water Birch Thicket, Arroyo Willow Thickets, and other riparian vegetation, along with marsh vegetation such as Baltic and Mexican Rush Marshes, Hardstem Rush Marsh, and Common Reed Marsh, and wash vegetation such as Desert-willow - Smoketree Wash Woodland and Desert Almond - Mexican Bladdersage Scrub.

### 4.4.3.3 Special-Status Plant Species

For the purposes of this PEA, special-status plants are defined as:

- Federally listed species (i.e. plants listed as threatened or endangered under the FESA)
- Species considered "sensitive" by BLM on BLM lands
- State-listed species (i.e. plants listed as threatened or endangered under CESA)
- Species that are candidates for possible future listing as threatened or endangered under FESA
- Plants identified under the California Rare Plant Ranks (CRPR) as 1B or 2B Plants that meet the definition of rare or endangered under CEQA, including species considered by the CNPS to be rare, threatened, or endangered in California (i.e., CRPRs 1A, 1B, 2A, 2B, and certain rank 3 and 4 species with local significance).

The desktop review identified 104 special-status plant species that have the potential to occur within 10 miles of the IC Project Alignment. Of these, a total of 24 special-status plant species were observed along the IC Project Alignment during the 2017-2018 surveys. Locations of observed special-status plant species are shown in Figureset 4.4-2, and habitat and location information for observed special-status

plant species are presented in Table 4.4-4, along with their potential to occur in other locations along the IC Project Alignment.<sup>17</sup>

One California Endangered plant species, Owens Valley checkerbloom, was observed along the IC Project Alignment during the surveys. The Owens Valley checkerbloom did not occur within the 100-foot radius of tower locations and pull sites or in IC Project work areas.

In addition, twenty-three non-listed sensitive plant species were observed along the alignment; these include one shrub species, two cactus species, nine herbaceous perennial species, and eleven annual species (Table 4.4-4 and Figureset 4.4-2); an additional nine plant species were observed with a CRPR of 4. The majority (88 percent) of the observed sensitive plant species are annuals or herbaceous perennials that pass the dry season as seeds or as dormant plants with no above-ground green foliage and underground storage organs. Although well-adapted to the California desert climate, these species are vulnerable to disturbance during their growing season, as well as weed infestations and grazing activities.

Table 4.4-5 lists the special-status plant species that were not observed along the IC Project Alignment along with their potential to occur on the alignment; it also includes special-status plant species observed at reference sites. No listed plant species, other than Owens Valley checkerbloom, is likely to occur along the IC Project Alignment.

Details about observed special status plant species, including habitat requirements, species descriptions, and life history, are provided in Appendix G to this PEA document. In addition, the reports in Appendix G include discussions and tables summarizing sensitive plant species that have the potential to occur along the IC Project Alignment, as well as sensitive plant species observed at reference sites but not observed along the IC Project Alignment. All CNDDB sensitive plant species records reported along the IC Project Alignment are presented in Figureset 4.4-3. (CNDDB 2018)

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One California Rare plant, July gold (*Dedeckera eurekensis*), has been reported east of the IC Project Alignment in the Inyo and White mountains. Reference site surveys were conducted for this species, and it was found in the White Mountains, as reported in Table 4.4-5. No portion of the IC Project Alignment provides suitable habitat for this species. There is no suitable habitat for any California Rare plant within the IC Project Alignment. Either suitable substrates, elevations, and/or habitats are lacking within the IC Project Alignment for California Rare plant species. In addition, no records or observations of California Rare plant species are reported within the IC Project Alignment.

Table 4.4-4: Special-Status Plant Species Observed along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Observed Sensitive Plan	ts on the IC Project	Alignment			
Aliciella triodon	coyote gilia	—/—/2B.2	Occurs in greasewood scrub and other Great Basin scrub vegetation types and pinyon-juniper woodland communities, in soils that are sometimes sandy, at elevations ranging from 4,000 to 5,600 feet amsl.	Likely to occur along the IC alignment only in suitable habitat such as Greasewood Scrub between Independence and Lone Pine and near the southern end of Owens Lake.	Two observations of 800 individuals found in the Owens Valley: one near the southern end of Owens Lake and the other between Independence and Lone Pine in Inyo County, California. A 1985 CCH record is located within five miles of the Project alignment near Independence.
Androstephium breviflorum	pink funnel lily	—/—/2B.2	Occurs in creosote bush scrub communities typically in sandy soil in the Mojave and Sonoran deserts at elevations ranging from 330 to 5,300 feet amsl.	Likely to occur along the IC alignment only in suitable sandy habitat between Manix and the Cronese Valley; and 4 miles north of Kramer Junction.	17 observations of 19 individuals found primarily between Manix east to the Cronese Valley (near the west side of the Cady Mountains) and then in one location 4 miles north of Kramer Junction.
Asclepias nyctaginifolia	Mojave milkweed	—/—/2B.1	Occurs in arroyos and dry slopes within the Mojave Desert at elevations ranging from 3,300 to 5,600 feet amsl.	Likely to occur along the IC alignment only in suitable arroyo habitat on the slopes and associated valleys of the Clark Mountains between Cima Road and the Ivanpah Solar Generating Facility.	Two observations, each with 1 individual observed, at the eastern base of the Clark Mountains. Several recent CNDDB occurrences and CCH records are located near the IC alignment near the Ivanpah Solar Generating Facility.
Astragalus geyeri var. geyeri	Geyer's milk- vetch	—/—/2B.2	Occurs on sandy soil in chenopod scrub and Great Basin scrub at elevations ranging from 3,900 feet to 6,500 feet amsl.	Likely to occur along the IC alignment only in suitable sandy habitat in chenopod scrub between Big Pine and Twin Lakes near Black Rock.	Two observations of 11 individuals were found south of Big Pine and east of Twin Lakes in Inyo County, California in the Project area. A 1973 CNDDB observation and CCH record is located near the Project alignment near Blackrock.
Astragalus tidestromii	Tidestrom's milk- vetch	—/—/2B.2	Occurs in sandy or gravelly carbonate soils at elevations ranging from 2,000 to 5,000 feet amsl.	Likely to occur along the IC alignment only in suitable sandy or gravelly habitat in carbonate soils in the Shadow Valley	26 observations of 240 individuals found at the western edge of Shadow Valley southwest of the Clark Mountains (directly west of

Table 4.4-4: Special-Status Plant Species Observed along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Observed Sensitive Plan	its on the IC Project	Alignment			
				southwest of the Clark Mountains.	Excelsior Mine Road and east of Halloran Summit). Several recent CNDDB occurrences and CCH records are located in the Shadow Valley near Kingston Wash and in the foothills of the Clark Mountains.
Bouteloua trifida	red grama	—/—/2B.3	Occurs in creosote bush and blackbush scrub in dry, rocky, and generally calcareous slopes, crevices, and washes at elevations ranging from 660 to 5,300 feet amsl.	Likely to occur along the IC alignment only in suitable habitat on rocky slopes, crevices, and washes in blackbush scrub between the western slopes of the Clark Mountains and the Ivanpah Valley.	Three observations of approximately 6,700 individuals found on slopes of Clark Mountains. A 2010 CNDDB occurrence and CCH records are located near the IC alignment in the Ivanpah Valley.
Calochortus excavatus	Inyo County star- tulip	—/—/1B.1	Occurs in alkaline and moist soils in meadows and seeps and in chenopod scrub at elevations ranging from 4,300 to 6,600 feet amsl.	Likely to occur along the IC alignment only in discrete alkaline marshes and moist habitat between Keough Hot Springs and Manzanar.	Two observations of 80 individuals found near Keough Hot Springs and near Manzanar between US Highway 395 and the Owens River.
Coryphantha chlorantha	desert pincushion	—/—/2B.1	Occurs in limestone soils in desert scrub communities at elevations ranging from 3,300 to 7,900 feet amsl.	Likely to occur along the IC alignment only in suitable limestone habitat from Cima Road in the Shadow Valley east on slopes of the Clark Mountains to the Ivanpah Valley.	52 observations of 519 individuals on both the west-facing and east-facing slopes of the Clark Mountains and the adjacent Shadow and Ivanpah Valleys. Several recent CNDDB occurrences and CCH records are located near Cima Road and the Ivanpah Valley.
Cymopterus deserticola	desert cymopterus	—/—/1B.2	Occurs in sandy soils in shadscale scrub and creosote bush – white bursage scrub and other Mojavean desert scrub vegetation at elevations ranging from 2,300 feet to 5,200 feet amsl.	Likely to occur along the IC alignment only in suitable sandy soils in shadscale scrub and creosote Bush – white bursage scrub between Kramer Junction and Barstow.	Seven observations, each with one individual, found along Segment 3N west of Barstow. Several recent CNDDB occurrences and CCH records are located near Kramer Junction and Lockhart, with two occurrences adjacent to Powerline Road near the Abengoa

Table 4.4-4: Special-Status Plant Species Observed along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Observed Sensitive Plan	its on the IC Project	Alignment			
					Mojave Solar Facility.
Cymopterus multinervatus	purplenerve springparsley	—/—/2B.2	Occurs in sandy to fine gravel substrates in Mojave desert scrub at elevations ranging from 2,100 to 5,900 feet amsl.	Likely to occur along the IC alignment only in suitable fine gravel habitat likely in Joshua tree woodland and creosote bush scrub between Halloran Summit and Cima Road in the Shadow Valley.	18 observations of 24 individuals found between the southern base of the Shadow Mountains near Halloran Summit east to the Kingston Wash in the Shadow Valley. One 2010 CNDDB occurrence is located near Cima Road in the IC Project area.
Cymopterus ripleyi var. saniculoides	sanicle cymopterus	—/—/1B.2	Occurs in gravelly, sandy, and carbonate substrate in Joshua tree woodland and Mojavean desert scrub at elevations ranging from 3,300 to 5,300 feet amsl.	Likely to occur along the IC alignment only in a 4-mile stretch in suitable gravelly and sandy habitat between Owens Lake and the Haiwee Reservoir.	Five observations, each with one individual, concentrated along the IC alignment southeast of Grant near Cactus Flats Road at the north end of the Haiwee Reservoir. Recent CCH observations are located within two miles of the Project alignment near the southwestern end of Owens Lake.
Eriophyllum mohavense	Barstow woolly sunflower	—/—/1B.2	Occurs in open chenopod scrub, Mojave desert scrub, and playas at elevations ranging from 1,640 to 2,600 feet amsl.	Likely to occur only in sandy to gravelly soils in pockets underlain by a caliche layer in shadscale scrub and other Mojave desert scrub from Kramer Junction to west of Barstow.	11 observations of 2,891 individuals along Segment 3, west of Barstow. Several recent CNDDB occurrences and CCH records are located near the IC alignment from Kramer Junction to Barstow.
Eschscholzia minutiflora subsp. twisselmannii	Red Rock poppy	—/—/1B.2	Occurs on volcanic and granitic substrates in Mojave desert scrub at elevations ranging from 2,200 to 4,000 feet amsl.	Likely to occur along the IC alignment only in suitable volcanic and granitic habitat on the alignment between the El Paso and Rand Mountains. Endemic to the El Paso and Rand Mountains.	10 observations of 301 individuals in the El Paso and Rand Mountains (between Ridgecrest and Kramer Junction). Several recent CNDDB occurrences and a recent CCH record are located near the IC alignment in the Rand and El Paso Mountains.
Euphorbia exstipulata var. exstipulata	Clark Mountain spurge	—/—/2B.1	Occurs on rocky soils in Mojave desert scrub at	likely to occur only in acton's and virgin river brittle brush —	Two observations, with a total three individuals, found on the

Table 4.4-4: Special-Status Plant Species Observed along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Observed Sensitive Pla	nts on the IC Project	Alignment			
			elevations ranging from 5,905 to 6,600 feet amsl.	net-veined goldeneye scrub, Joshua tree woodland, and other Mojavean desert scrub vegetation in rocky soils in the Clark Mountains.	west-facing slopes of the Clark Mountains. A historic CNDDB occurrence and a recent CCH record are located near the IC alignment and access roads near Cima Road on the western slopes of the Clark Mountains.
Grusonia parishii	matted cholla	—/—/2B.2	Occurs on sandy or rocky sites in Mojave desert scrub, Sonoran desert scrub, and Joshua tree woodland communities at elevations ranging from 2,800 to 5,300 feet amsl.	Likely to occur on sandy, gravelly flats or in rocky sites in creosote bush – white bursage scrub, other Mojavean and Sonoran Desert scrub, and Joshua tree woodland on the west-facing slopes of the Clark Mountains and at the Ivanpah Solar Generating Facility.	33 observations of 191 individuals found on the west-facing slopes of the Clark Mountains. Several recent CNDDB occurrences and a recent CCH record are located near the IC alignment and access roads on the west-facing slopes of the Clark Mountains and at the Ivanpah Solar Electric Generating Facility.
Loeflingia squarrosa var. artemisiarum	sagebrush loeflingia	—/—/2B.2	Occurs on sandy soils in desert dunes, Great Basin scrub, and Sonoran desert scrub communities at elevations ranging from 2,300 feet to 5,300 feet amsl.	Likely to occur along the IC alignment only in suitable sandy, desert dune habitat between Keough Hot Springs and Klondike Lake.	One observation with 500 individuals found south of Keough Hot Springs and northwest of Klondike Lake. CNDDB observations exist in the same vicinity of the Project alignment.
Menodora spinescens var. mohavensis	Mojave menodora	—/—/1B.2	Occurs on andesite gravel, rocky hillsides, and canyons in Mojave desert scrub at elevations ranging from 2,300 to 6,600 feet amsl.	Likely to occur along the IC alignment only in suitable andesite gravel habitat on rocky hillsides and canyons from Barstow to Yermo.	Nine observations of 157 individuals along Segments 3N and 3S of the IC alignment west of Yermo. Three recent CNDDB occurrences and several historic CCH records are located near Barstow.
Mentzelia tridentata	threetooth blazingstar	—/—/1B.3	Occurs in well-drained soils in Mojave desert scrub at elevations ranging from 2,300 to 3,800 feet amsl.	Likely to occur along the IC alignment only in suitable sandy, rocky habitat southwest of Barstow and south of Cronese Lake. Potentially present at the southern end of Segment 1 south	Two locations with 105 individuals; one southwest of Barstow at the base of Daggett Ridge and the other south of Cronese Lake. Several recent CNDDB occurrences and CCH

Table 4.4-4: Special-Status Plant Species Observed along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Observed Sensitive Plan	its on the IC Project	Alignment	·		
				of South Haiwee Reservoir to the north end of Rose Valley.	records are located near Barstow. One 2006 CNDDB observation recorded within two miles of the Project alignment south of South Haiwee Reservoir, and two older records recorded in the Rose Valley.
Mimulus (Diplacus) mohavensis	Mojave monkeyflower	— /—/ 1B.2	Occurs on well-drained gravels and sandy substrates, often in or adjacent to washes, in Joshua tree woodland and Mojave desert scrub at elevations ranging from 1,970 to 4,000 feet amsl.	Likely to occur along the IC alignment in well-drained gravels and sandy substrates only in one general area, between Yermo and Hinkley.	Five observations of 271 individuals found at the base of the northern slopes of Daggett Ridge. Several recent CNDDB occurrences and CCH records are located near or adjacent to the IC alignment near Barstow.
Oryctes nevadensis	Nevada oryctes	—/—/2B.1	Occurs in sandy soils in chenopod scrub and Mojavean desert scrub at elevations ranging from 4,000 to 5,000 feet amsl.	Likely to occur along the IC alignment only in suitable sandy habitat near Twin Lakes, to the southeast of Black Rock.	Two observations, with a total of three individuals, found southeast of Blackrock on the alignment near Twin Lakes. Historic CNDDB observations and CCH records exist within three miles of the Project alignment east of the town of Blackrock.
Pediomelum castoreum	Beaver Dam breadroot, Indian breadroot	—/—/ 1B.2	Occurs in sandy washes and road cuts in Joshua tree woodland and Mojave desert scrub at elevations ranging from 2,000 to 5,000 feet amsl.	Likely to occur only in suitable sandy washes in creosote bush scrub and spinescale scrub along Segment 3N west of Barstow and east to Yermo.	Four observations totaling five individuals found along Segment 3N west of Barstow. Several recent and historic CNDDB occurrences and CCH records are located between Kramer Junction and Yermo.
Plagiobothrys parishii	Parish's popcornflower	—/—/1B.1	Occurs in moist and alkaline marshes and associated shrublands in wet, alkaline seeps at elevations ranging from 2,500 to 4,500 feet amsl.	Likely to occur along the IC alignment only in discrete alkaline marshes between Keough Hot Springs and Big Pine; near Manzanar, and the southern end of Owens Lake.	18 observations of 3,169 individuals found between Keough Hot Springs and Big Pine; near Manzanar north of Lone Pine; and near the southern end of Owens Lake.
Sanvitalia abertii	Abert's sanvitalia	—/—/2B.2	Occurs on carbonate soils in	Likely to occur only in Joshua	Two observations, each with one

Table 4.4-4: Special-Status Plant Species Observed along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Observed Sensitive Plan	nts on the IC Project	Alignment			
			pinyon-juniper woodland at elevations ranging from 4,800 to 5,700 feet amsl.	tree woodland and pinyon- juniper woodland on carbonate soils between Kingston Wash in the Shadow Valley and in the Clark Mountains.	individual, found on west-facing slopes of the Clark Mountains in Joshua tree woodland. Recent and historic CNDDB occurrences and CCH records are located north of the alignment in the Clark Mountains.
Sidalcea covillei	Owens Valley checkerbloom	—/CE/1B.1	Occurs in alkaline marshes, including baltic and mexican rush marsh, and the edges of alkaline meadows and springs in soils that frequently have an alkaline crust at elevations ranging from 3,600 feet to 4,500 feet amsl.	Likely to occur only in discrete alkaline marsh habitat in a few locations between Independence and Lone Pine and at the southwestern end of Owens Lake.	One observation of 100 individuals found southeast of Independence, California. Two CNDDB records at the southwestern end of Owens Lake overlap or are within 0.3 miles of the IC alignment; other CNDDB records in the Owens Valley are not located near the alignment.

Notes:

List 1: Plants Rare, Threatened, or Endangered in California and Elsewhere; List 2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

E = Federal Endangered; FT = Federal Threatened

CE = California Endangered; CT = California Threatened; CSC = California Species of Concern

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Sensitive Plants not	Observed on the IC	Project Alignment, but Obser	ved at Reference Sites		
Astragalus bernardinus	San Bernardino milkvetch	—/—/1B.2	Occurs in Joshua tree woodland and pinyon-juniper woodland in granitic or carbonate substrates at elevations ranging from 980 feet to 7,600 feet amsl.	Potentially suitable woodland habitat on granitic or carbonate substrates located in the Clark Mountains.	Observed at reference sites near Cima. There are two CNDDB occurrences located in the Clark Mountains.
Astragalus serenoi var. shockleyi	naked milkvetch, Shockley's milk- vetch	—/—/2B.2	Occurs on alkaline and granitic alluvium in Chenopod scrub, Great Basin scrub, and pinyon-juniper woodland at elevations ranging from 3,800 feet to 7,600 feet amsl.	Unlikely to occur along IC alignment since all known locations occur east of the Owens River and east of the IC alignment.	Observed at a reference site in Silver Canyon in the White Mountains in Inyo County. A recent CCH record is located near the Project alignment near Big Pine.
Coryphantha vivipara var. rosea	viviparous foxtail cactus	—/—/2B.2	Occurs on gravelly limestone or volcanic slopes and brushy hillsides in Mojave desert scrub and pinyon-juniper woodland communities at elevations ranging from 100 to 6,000 feet amsl in the New York Mountains and at Cima Dome.	Unlikely to occur along the IC alignment but suitable habitat present further south of the alignment near Cima Dome.	Observed at a reference site south of the IC alignment and southwest of Cima Dome. Six CNDDB records in Clark Mountains dating from 1980 to 2005, including one record south of the Mountain Pass Substation within 0.25 mile of the IC alignment.
Dedeckera eurekensis	July gold	— / CR / 1B.3	Occurs in carbonate soils in Mojavean desert scrub at elevations ranging from 4,000 to 7,300 feet amsl.	Unlikely to occur along IC alignment, nearest known locations are recorded in the Inyo and White Mountains at higher elevations east of the IC alignment.	Observed at a reference site in the lower portion of Coldwater Canyon in the White Mountains northeast of Bishop. Recent CCH observations are located within six miles of the Project alignment east of Bishop.
Enneapogon desvauxii	nine-awn pappusgrass	—/—/2B.2	Occurs on rocky carbonate soils in Joshua tree woodland at elevations ranging from 4,200 to 6,000 feet amsl.	Potentially suitable rocky carbonate habitat located along the IC alignment between Kingston Wash in the Shadow Valley and in the Clark Mountains and the Ivanpah Valley.	Observed at reference site on the southwest-facing slope of the McCullough Mountains in Nevada. Several recent CNDDB occurrences and CCH records are located near the IC alignment between Kingston Wash in the Shadow Valley and in the Clark Mountains and the Ivanpah Valley.
Eriastrum harwoodii	Harwood's eriastrum	—/—/1B.2	Occurs on desert dunes at elevations between 250 to 2,400 feet amsl. The closest existing	Unlikely to occur along IC alignment, the limited desert dune areas along the alignment occur	Observed at reference sites within the Mojave National Preserve in the Old Dad Mountains.

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			recent CCH records are located to the south near Crucero.	east of Cronese Lake, outside of the known range for this species.	
Erioneuron pilosum	hairy woollygrass	—/—/2B.3	Occurs in pinyon-juniper and Joshua tree woodland in rocky or gravelly places at elevations between 4,700 to 6,600 feet amsl.	Potentially suitable rocky, gravelly habitat along the IC alignment in pinyon-juniper woodland at higher elevations in the Clark Mountains.	Mohawk Hill in the Clark
Mentzelia torreyi	Torrey's blazing star	—/—/2B.2	Occurs in sandy, rocky, alkaline, and volcanic soils in Great Basin scrub, Mojavean desert scrub, and pinyon-juniper woodland at elevations ranging from 3,000 to 6,900 feet amsl.	Potentially suitable alkaline shrubland habitat along the IC alignment east of Aberdeen in the same general area as Calvert Lake east of the Owens River.	Observed at a reference site in an alkali playa northeast of Calvert Lake in the Owens Valley. Historic CNDDB observations exist within two miles of the Project alignment south of Aberdeen.
Mirabilis coccinea	red four o'clock	—/—/2B.3	Occurs in pinyon-juniper woodland and Mojave scrub often in canyon bottoms at elevations between 3,500 feet to 5,800 feet amsl.	Potentially suitable habitat in canyon bottoms located in the Clark Mountains.	Observed at reference sites in Nevada between and on the slopes of the McCullough and the Highland Ranges. No recent CNDDB or CCH records are located within 3 miles of the alignment. Several recent CCH records found south of alignment in the Clark Mountains
Opuntia curvispina	curved-spine beavertail	—/—/2B.2	Occurs in chaparral, Mojavean desert scrub, and pinyon-juniper woodland habitats at elevations of 3,300 to 5,000 feet amsl.	Unlikely to occur along the IC alignment since it is outside of the known range for this species.	Observed at reference site on the slopes of the McCullough and the Highland Ranges in Nevada. This cactus is a relatively recently recognized hybrid, which may be why no records exist in vicinity of the IC alignment.
Phacelia inyoensis	Inyo phacelia	—/—/1B.2	Occurs in alkaline substrate in meadows and seeps at elevations ranging from 3,700 to 10,500 feet amsl.	Potentially suitable playa habitat located near Klondike Lake.	Observed at a reference site near the alignment adjacent to Klondike Lake north of Big Pine. Recent CNDDB observations and CCH records exist within a mile of the Project alignment north of Olancha.

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Phacelia parishii	Parish's phacelia	—/—/ 1B.1	Occurs along dry lake beds and playa communities with clay or alkaline soils. Occurs at elevations ranging from 1,640 feet to 2,950 feet amsl.	Potentially suitable dry lake bed and playa habitat located near the Barstow-Yermo area.	Observed at reference site in a playa area south of Lucerne Dry Lake. Recent and historic CNDDB occurrences and CCH records are located near Barstow, Yermo, and Manix.
Sarcobatus baileyi	Bailey's greasewood	—/—/2B.3	Occurs in chenopod scrub in alkaline substrate, dry lakes, washes, and roadsides at elevations above 4,000 feet amsl.	Unlikely to occur along IC alignment, observed locations are outside of the alignment.	Observed at a reference site northeast of Bishop and east of the southern terminus of Fish Slough in Inyo County. Recent CNDDB observations exist within 10 miles of the Project alignment northeast of Olancha.
Sphaeralcea rusbyi var. eremicola	Rusby's desert mallow	—/—/1B.2	Occurs in Joshua tree woodland and Mojave desert scrub communities at elevations ranging from 3,200 to 5,400 feet amsl.		Observed at reference sites between Cima and the Old Dad Mountains. Several recent CNDDB occurrences and CCH records are located near the IC alignment and near Cima Road and the Ivanpah Solar Electric Generating Facility.
Stipa divaricata	small-flowered rice grass	—/—/2B.3	Occurs on gravel benches, rocky slopes, and creek banks in pinyon-juniper woodland at elevations ranging from 2,600 feet to 10,170 feet amsl.	Potentially suitable rocky habitat along the IC alignment on gravel benches, slope, and creek banks in pinyon-juniper woodland located in the Clark Mountains.	Observed at a reference sites in Wyman Canyon in the White Mountains. Two CNDDB records (1981, 1989) are located in Clark Mountains north of alignment.
Sensitive Plants Not	Observed on IC Pro	ject Alignment but Reported	in CNDDB/CCH for Surrounding A	rea	
Abronia villosa var. aurita	chaparral sand- verbena	—/—/1B.1	Occurs on the coastal side of the San Gabriel and San Bernardino Mountains in chaparral and coastal sage scrub vegetation types.  Chaparral sand-verbena usually grows in full sun and sandy soil at elevations from 250 to 5,300 amsl.	Unlikely to occur along IC alignment, suitable habitat largely lacking; only observed once, usually on coastal side of mountains.	A single 1976 CNDDB record in the Mojave Desert location west- northwest of Barstow.
Acleisanthes nevadensis	desert wing-fruit	—/—/2B.1	Occurs in dry, rocky areas in the Kingston Range, near and in Kingston Wash, and Pahrump	Potentially suitable dry, rocky habitat in one location along the IC alignment in the Shadow	A 2014 CNDDB and CCH record is located near the IC alignment in Shadow Valley near Cima Road and Kingston Road.

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			Valley at elevations from 2,600 to 4,100 feet amsl.	Valley near Cima Road in and near Kingston Wash.	
Acmispon argyraeus var. multicaulis	scrub lotus	—/—/ 1B.3	Occurs in pinyon-juniper woodland in rocky granitic soils at elevations ranging from 4,000 to 5,000 feet amsl in Mescal Range south of Mountain Pass, as well as New York, Providence, and Castle Mountains	Unlikely to occur along IC alignment, known range to the south of the IC alignment.	One 2008 CNDDB record in Mescal Range south of Mountain Pass.
Ageratina herbacea	desert ageratina	—/—/2B.3	Occurs in limestone in rocky pinyon-juniper woodlands in the Clark, New York, and Providence Mountains at elevations ranging from 5,000 to 7,300 feet amsl.	Unlikely to occur along IC alignment, the alignment is mostly below the known elevational range for this species.	Two CNDDB records in the Clark Mountains, one north northwest of Mountain Pass and one above Pachalka Spring.
Aliciella ripleyi	Ripley's aliciella	—/—/2B.3	Occurs in carbonate soils in Mojavean desert scrub at elevations ranging from 200 to 4,600 feet amsl, mostly east of the IC alignment in the Inyo, Panamint, and Funeral Mountains, and adjacent mountain ranges.	Unlikely to occur along IC alignment due to lack of observations near the alignment during past 85 years; primarily occurs in desert ranges to the east of the alignment.	One 1931 CNDDB occurrence and CCH record at Little Lake.
Allium nevadense	Nevada onion	—/—/2B.3	Occurs on sandy gravelly soils in pinyon-juniper woodland and Mojavean desert scrub at elevations ranging from 2,700 to 6,400 feet amsl in mountains of eastern San Bernardino County and southern Inyo County.	Potentially suitable sandy, gravelly habitat located along the IC alignment at higher elevations in the Clark Mountains in pinyon-juniper woodland.	A 2015 CCH record is located adjacent to the IC alignment at the base of Mohawk Hill in the Clark Mountains.
Arctomecon merriamii	white bear poppy	—/—/2B.2	Occurs in chenopod and Mojavean desert scrub at elevations ranging from 1,600 to 5,900 feet amsl in mountains of eastern Inyo County, and in Silurian Hills and northern Clark Mountains in San Bernardino County.	Unlikely to occur along the IC alignment; nearest location in the northern Clark Mountains more than four miles north of IC alignment.	Several CNDDB records for Clark Mountains and foothills at northern end of Ivanpah Valley.

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Astragalus cimae var. cimae	Cima milk-vetch	—/—/ 1B.2	Occurs on clay soils in sagebrush in pinyon-juniper and Joshua tree woodland in the Mojave Desert at elevations ranging from 3,000 to 6,000 feet amsl in vicinity of the New York Mountains and Ivanpah Range.	Unlikely to occur along the IC alignment, confirmed records further south in the Ivanpah and New York Mountains.	Nearest location is a 1983 CNDDB record in the Ivanpah Mountains south of Mountain Pass.
Astragalus hornii var. hornii	Horn's milk-vetch	—/—/1B.1	Occurs in alkaline soils such as lake margins, meadows, seeps, and playas at elevations ranging from 200 to 1,000 feet amsl on the coastal side of the Sierra Nevada in Kern County (San Joaquin Valley), the southern Mojave Desert in and near the Antelope Valley (historic records), and in the City of San Bernardino (historic records).	Unlikely to occur along the IC alignment, all confirmed records occur outside of the known range for this species.	A 1919 unverified CNDDB record occurs less than 1 mile from the IC alignment near the Owens River north of Lone Pine. No further verification for this 100-year-old record exists.
Astragalus jaegerianus	Lane Mountain milkvetch	FE / — / 1B.1	Occurs in Joshua tree woodland and Mojavean desert scrub in granitic sands and gravels from 3,000 to 4,000 feet amsl in Mud Hills (Coolgardie Mesa), on Lane Mountain and surrounding Tiefort Mountains, east to the Fort Irwin area more than 10 miles north of Barstow.	Unlikely to occur along IC alignment due to lack of adequate substrates and elevations along alignment; IC alignment outside of the known range for this species.	Only extant population occurs north of the proposed IC alignment north of Barstow in the Mud Hills, on Lane Mountain and surrounding Tiefort Mountains, east to the Fort Irwin area, Designated Critical Habitat is within 5 miles of the IC alignment north of Barstow-Yermo area.
Astrolepis cochisensis subsp. cochisensis	scaly cloak fern	—/—/ 2B.3	Occurs mainly on carbonate soils in canyons and often on north-facing slopes in pinyon-juniper and Joshua tree woodlands at elevations from 3,000 to 5,900 in Clark Mountains, Mescal Range, and Providence Mountains.	Potentially suitable habitat in one location on west-facing slopes of Clark Mountains below Mohawk Hill in pinyon-juniper and Joshua tree woodland.	A 2010 CNDDB record occurs in the Clark Mountains at the western end of Mohawk Hill near the IC alignment. Other records further north or south of IC alignment.
Atriplex argentea var. hillmanii	Hillman's silverscale	—/—/2B.2	Occurs on alkaline soils in chenopod scrub, Great Basin scrub, and pinyon-juniper woodland at elevations ranging from 2,900 to 5,600 feet amsl.	Potentially suitable alkaline habitat in one location along the IC alignment in the Owens Valley east of Twin Lakes	One 1973 CNDDB record is located in the Owens Valley east of Twin Lakes

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Atriplex gardneri var. falcata	falcate saltbush	—/—/2B.2	Occurs in Chenopod scrub and Great Basin scrub, often in alkaline soils, at elevations ranging from 4,000 to 5,600 feet amsl on east side of Sierra Nevada in Lassen and Plumas Counties.	Unlikely to occur along IC alignment, outside of range of confirmed observations.	A 1974 unconfirmed CNDDB observation is located southeast of Bishop along Lower McNally Canal east of Warm Spring.
Bahia neomexicana	many-flowered bahia	—/—/2B.3	Occurs on dry, sandy soils, in desert scrub and woodland communities in pinyon-juniper woodlands at elevations ranging from 5,000 to 7,600 feet amsl in New York and Clark Mountains.	Unlikely to occur along IC alignment, all known observations in Clark Mountains occur at higher elevations and further north than IC alignment.	CNDDB and CCH records are located in the Clark Mountains, including 2010 observation, all above 5,150 feet and north of alignment.
Blepharidachne kingii	King's eyelash grass	—/—/2B.3	Occurs in granitic and gravelly soils in Joshua tree woodland and pinyon-juniper woodland at elevations ranging from 3,000 to 7,100 feet amsl in desert mountain ranges to the east of the Owens Valley.	Unlikely to occur along IC alignment, suitable habitat is absent in this area; IC alignment occurs west of Owens River in this area, pinyon-juniper and Joshua tree woodland absent in this area.	One 1978 CNDDB record is located east of Big Pine and east of Owens River on alluvial soils at base of slope.
Boechera dispar	pinyon rockcress	—/—/2B.3	Occurs in granitic and gravelly soils in Joshua tree woodland, creosote bush scrub, and pinyon-juniper woodland at elevations ranging from 4,000 to 8,200 feet amsl.	Unlikely to occur along IC alignment, suitable habitat is absent in this area; IC alignment occurs west of Bishop, all habitat types favored by this species absent along IC alignment near Bishop.	Most nearby observations occur in mountains surrounding the Owens Valley. One 1927 CNDDB observation generally located at Bishop.
Boechera lincolnensis	Lincoln rockcress	—/—/2B.3	Occurs in creosote bush scrub and shadscale scrub with rocky slopes and gravelly soils at elevations ranging from 3,600 to 8,900 feet amsl, mostly in desert mountain ranges to the east of the Owens Valley, in the Kingston Range, and in San Gabriel Mountains.	Unlikely to occur along IC alignment, all confirmed locations outside of the IC alignment area.	One 1993 CNDDB occurrence reported from general area of Solomon's Knob 19 miles east of Baker and north of IC alignment.
Castela emoryi	Emory's crucifixion-thorn	—/—/2B.2	Occurs in areas of Mojave desert scrub, playas, and Sonoran desert scrub communities with gravelly	Unlikely to occur along IC alignment because this very	Historic CNDDB occurrences at Daggett (1947) and east of Newberry Springs (1953); also,

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			soils at elevations ranging from 300 to 6,600 feet amsl in the Mojave and Sonoran Deserts.	conspicuous and large species was not observed during surveys.	north northeast of Midway off Interstate 15 and along Interstate 15 between North and South Soda Mountain; recent CCH records located near the IC alignment near Dunn Siding and Baker.
Cirsium arizonicum var. tenuisectum	desert mountain thistle	—/—/ 1B.2	Occurs in washes and rocky slopes in scrubland and woodland communities at elevations ranging from 5,000 to 9,000 feet amsl in the Sierra Nevada, White Mountains, Clark Mountains, and New York Mountains.	Unlikely to occur along IC alignment, single 1973 record in Clark Mountains found at higher elevations and further north than IC alignment.	One 1973 CNDDB record approximately 4.5 miles north of the IC alignment in the Clark Mountains.
Crepis runcinata	fiddleleaf hawksbeard	—/—/2B.2	Occurs in moist locations, in alkaline soils, and in Mojavean desert scrub and pinyon and juniper woodland at elevations ranging from 3,900 to 10,200 feet amsl, mostly to the north of Bishop and in Deep Springs Valley.	Unlikely to occur along the IC alignment, not observed in over 90 years southwest of Bishop near the IC alignment.	Two historic CNDDB records (1917, 1927) from Bishop and Gerkin Ranch southwest of Bishop.
Cryptantha clokeyi	Clokey's cryptantha	—/—/1B.2	Occurs in Mojavean desert scrub habitat at elevations of 2,400 to 4,500 amsl in the Mojave Desert.	Potentially suitable habitat located along the IC alignment where it overlaps the Rand Mountains and Waterman Hills.	One 2003 CNDDB record in the southeastern Rand Mountains and one 1938 CCH record located north of the IC alignment near Barstow, possibly in the Waterman Hills.
Cymopterus gilmanii	Gilman's cymopterus	—/—/2B.3	Occurs in limestone and gypsum soils in Mojavean desert scrub at elevations ranging from 3,000 and 6,600 feet amsl, mostly in desert mountain ranges to the east of the Owens Valley, in the Kingston Range, and Clark Mountains.	Potentially suitable habitat along IC alignment near Antimony Gulch.	Two historic CNDDB occurrences (1973 and 1979) are located within two miles of the IC alignment in the Clark Mountains. CNDDB occurrences from the Clark Mountains (northeast and west of Umberci Mine, southwest of State Line Pass, east of Keany Pass).
Elymus salina	Salina Pass wild- rye	—/—/2B.3	Occurs on north-facing slopes of pinyon-juniper woodland at elevations ranging from 4,500 to 7,000 feet amsl in the Panamint	Unlikely to occur along the IC alignment, records occur to the north and at higher elevations in the Clark Mountains.	One 1983 CNDDB record from the Clark Mountains (Greens Canyon and Colosseum Mine). Other CCH

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			Mountains, Clark Mountains, and other desert mountains south of the IC alignment.		records exist north of alignment in Clark Mountains.
Eremothera boothii subsp. boothii	Booth's evening- primrose	—/—/2B.3	Often found in Joshua tree woodland and in pinyon-juniper woodland and desert scrub at elevations ranging 2,950 to 7,900 feet amsl.	Potentially suitable habitat north of Kramer Junction in desert scrub. Unlikely to occur along the IC alignment in Segment 1; 85-year-old record in Rose Valley but presence of this species not recently confirmed.	A 1988 CNDDB record overlaps the IC alignment north of Kramer Junction. One 1931 CNDDB record located near Dunmovin but not reported since that time. Other nearby records lacking.
Eremothera boothii subsp. intermedia	desert shredding primrose	—/—/2B.3	Occurs in gravelly, sandy, and carbonate substrate in Joshua tree woodland and Mojavean desert scrub at elevations ranging from 3,400 to 7,050 feet amsl.	Unlikely to occur along IC alignment; potentially suitable habitat occurs near Fort Independence and Aberdeen, but IC alignment passes mostly through alkaline chenopod scrub and moist habitats in these locations.	A 1969 CNDDB record north of Fort Independence and 1983 record east of Aberdeen in upland habitat.
Eriogonum umbellatum var. juniporinum	juniper sulphur- flowered buckwheat	—/—/ 2B.3	Occurs in Mojave desert scrub and pinyon-juniper woodland from 4,300 to 7,600 feet amsl.	Unlikely to occur along the IC alignment, all known observations in Clark Mountains occur at higher elevations or further north of IC alignment.	CNDDB occurrences in the Clark Mountains (northwest of Pachalka Spring (1935) and in Fir Canyon, Colosseum Gorge, and Forsellesia Canyon).
Fimbristylis thermalis	hot springs fimbristylis	—/—/2B.2	Occurs in meadows and seeps, especially in alkaline soils and near hot springs at elevations ranging from 400 to 4,400 feet amsl.	Unlikely to occur along IC alignment, suitable habitat is largely absent.	One 1964 CNDDB record is from Keough Hot Springs just east of IC alignment.
Frasera albomarginata var. induta	Clark Mountain green-gentian	—/—/ 1B.2	Occurs on rocky or gravelly, usually carbonate soils in pinyon-juniper woodland at elevations ranging from 5,600 to 5,800 feet amsl.	Unlikely to occur along IC alignment, the alignment is below the known elevational range for this species.	One CNDDB record near at Jumper Claims in the Clark Mountains north of the IC alignment. A recent CCH record is located north of the alignment in the Clark Mountains.
Galium proliferum	desert bedstraw	—/—/2B.2	Occurs on carbonate and rocky soils in lower montane coniferous forest, pinyon-juniper woodland, and creosote bush scrub at elevations ranging from 3,600 to	Potentially suitable carbonate and rocky habitat located along the IC alignment in pinyon-juniper woodland in one location just	One 2011 CNDDB occurrence overlaps the IC alignment just south of Clark Mountain. Other nearby observations that do not overlap the alignment include locations in the

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			4,600 feet amsl in the Kingston Range, Clark Mountains, Ivanpah Mountains, New York Mountains, and Providence Mountains.	south of Clark Mountain where this species was reported in 2011.	Clark Mountains (Kessler Peak Road, west of Colosseum Mine, east of Pachalka Spring, northwest of Birthday Mine, and west of Umberci Mine); Ivanpah Valley; and the Ivanpah Mountains (Kessler Peak Road, Striped Mountain).
Galium wrightii	Wright's bedstraw	—/—/ 2B.3	Occurs on carbonate and rocky soils in lower montane coniferous forest and pinyon-juniper woodland at elevations ranging from 5,300 to 6,600 feet amsl in the Clark Mountains, New York Mountains, and Providence Mountains.	Unlikely to occur along IC alignment, IC alignment occurs south of known locations.	CNDDB occurrences for Clark Mountain (Forsellesia Canyon [1977], south of Pachalka Spring, and northwest of Mountain Pass [1973]) are located north of the alignment in the Clark Mountains.
Glossopetalon pungens	pungent glossopetalon	—/—/ 1B.2	Occurs on carbonate soils in pinyon-juniper woodland at elevations ranging from 4,800 feet to 5,100 feet amsl.	Unlikely to occur along IC alignment, IC alignment occurs south of known locations.	One 2008 CNDDB record located in the Clark Mountains north of the IC alignment (Forsellesia Canyon south of Colosseum Mine). Several historic CCH records are located north of alignment in Clark Mountains.
Hymenopappus filifolius var. eriopodus	hairy-podded fine- leaf hymenopappus	—/—/2B.3	Occurs on limestone cliffs in pinyon-juniper woodland at elevations ranging from 5,300 to 5,600 feet amsl.	Unlikely to occur along IC alignment, IC alignment occurs south and at lower elevations than documented records.	One 1974 CNDDB occurrence in the Clark Mountains (Small Slide Canyon); a recent CNDDB occurrence and recent CCH records are located north of the alignment in the Clark Mountains
Ivesia jaegeri	Jaeger's ivesia	—/—/ 1B.3	Occurs on carbonate and rocky soils in pinyon-juniper woodland and upper montane coniferous forest at elevations ranging from 6,000 to 11,800 feet amsl.	Unlikely to occur along IC alignment, as the alignment is below the known elevational range for this species.	The IC alignment is below the known elevational range of species. CNDDB records located north of the alignment in the Clark Mountains (Frank Curtis' Mine and Small Slide Canyon). Recent CCH records are located north of the alignment in the Clark Mountains.

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Jaffueliobryum wrightii	Wright's jaffueliobryum moss	—/—/2B.3	Occurs in dry openings and rock crevices in alpine dwarf scrub, Mojavean desert scrub, and pinyonjuniper woodland at elevations ranging from 525 to 8,202 feet amsl along Kern River, in the White Mountains, Clark Mountains, Granite Mountains, Orocopia Mountains, and San Bernardino Mountains.	Unlikely to occur along IC alignment, alignment does not overlap known locations for this species.	A 2003 CNDDB record along Zzyzx Road south of the IC alignment. A 2005 CNDDB occurrence is located north of the alignment in the Clark Mountains.
Juncus nodosus	knotted rush	—/—/2B.3	Occurs in meadows and seeps and along marsh and swamp margins at elevations ranging from 98 to 6,496 feet amsl in mountains east of the Owens Valley as well as in the Clark Mountains, Old Woman Mountains, San Gabriel Mountains, and along Tule River in southern Sierra Nevada.	Unlikely to occur along the IC alignment, no suitable springs or similar wetland habitat are located along the alignment near the range of the species.	One 1997 CNDDB occurrence from the Clark Mountains (Colosseum Gorge), as well as 2004-2006 CNDDB and CCH records north of the alignment in springs in the Clark Mountains. Closest observation at Antimony Spring in Clark Mountains.
Linum puberulum	plains flax	—/—/2B.3	Occurs in rocky, sandy areas in pinyon-juniper woodland, Joshua tree woodland, Great Basin scrub and Mojavean desert scrub at elevations ranging from 3,300 to 6,600 feet amsl in the Clark Mountains, New York Mountains, Ivanpah Mountains, and other desert mountain ranges south of the IC alignment.	Unlikely to occur along the IC alignment, Clark Mountains records of this species near the alignment are at higher elevations and further north than the IC alignment.	A 1978 CNDDB record occurs in Forsellesia Canyon in the Clark Mountains north of the IC alignment, and two more recent records occur north of the IC alignment in the Clark Mountains.
Lupinus pusillus var. intermontanus	intermontane lupine	—/—/2B.3	Occurs in Greasewood Scrub and Great Basin scrub at elevations below 5,250 feet amsl, mostly north of the Owens Valley or east of the Owens Valley.	Unlikely to occur along the IC alignment; the IC alignment passes west of the Owens River in volcanic substrates at same latitude as this 1974 location.	One 1974 CNDDB record reported southeast of Big Pine and 1 mile east of the Owens River at Stewart Lane in Greasewood Scrub. No other observations recorded in the Owens Valley.
Menodora scabra var. scabra	rough menodora	—/—/ 2B.3	Occurs on rocky or sandy soils in desert scrub and woodland communities in Clark, Eagle, and	Unlikely to occur along the IC alignment, nearest record in the Clark Mountains occurs at higher	A 2003 CNDDB record from the Clark Mountains north of the IC alignment (south of Colosseum

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			New York Mountains at elevations ranging from 3,300 to 6,000 feet amsl.	elevations and further north than the IC alignment.	Mine) and a 2004 CNDDB record south of the IC alignment at Cima Cinder Cones.
Mentzelia polita	polished blazing star	—/—/ 1B.2	Occurs on limestone and gypsumrich soils in washes in Mojavean desert scrub at elevations ranging from 3,900 to 5,200 feet amsl in the Clark Mountains and the Panamint Range.	Unlikely to occur along the IC alignment, all nearby observations more than 4 miles north of the alignment in the Clark Mountains.	1977 CNDDB records on the north side of Clark Mountain near Keany Pass, Colosseum Road, and northwest of Fir Road; 2007-2013 records also include the area south-southeast and west of Umberci Mine.
Mentzelia pterosperma	wing-seed blazing star	—/—/2B.2	Occurs on clay and gypsum-rich soils in Mojavean desert scrub in the Shawod Valley near Kingston Wash, in the Clark Mountains, and in the Pahrump Valley in southeastern Inyo County.	Potentially suitable habitat in clay and gypsum substrates along the IC alignment located in one location to the east of Kingston Wash and just north of the intersection of Interstate 15 and Cima Road.	One 1978 CNDDB record in the Clark Mountains northwest of Umberci Mine; two CNDDB records north northeast of Keany Pass (1997) and, Pachalka Spring (2003) in the Clark Mountains; and one 2011 CNDDB record just north of Cima Road and Interstate 15.
Mentzelia tricuspis	spiny-hair blazing star	—/—/2B.1	Occurs on sandy, gravelly soils on slopes and washes in Mojavean desert scrub at elevations ranging from 500 to 4,200 feet amsl at scattered locations in the Mojave and Sonoran Deserts.	Unlikely to occur along the IC alignment, no observations have been documented in the past 60 years between Barstow and Yermo, the only location along the IC alignment where it has been observed.	One 1932 CNDDB occurrence "near Barstow;" one 1900 CCH record near Daggett; one 1930 CCH record north of Barstow, and one 1959 CCH record near Yermo.
Monardella eremicola	Clark Mountain monardella	—/—/1B.3	Occurs in granitic or carbonate soils. Usually in bedrock cracks and benches along canyon washes in pinyon juniper woodland and riparian scrub between 5,000 to 7,300 feet amsl in the Clark Mountains, the Kingston Range, and the New York Mountains.	Unlikely to occur along the IC alignment; all observations of this species in the Clark Mountains are north of the IC alignment and above 5,800 feet amsl, which is above the highest elevation of the IC alignment.	Historic CNDDB and recent occurrences from the Clark Mountains (Pachalka Spring [1935] and south of Jumpers Claim [1977] and Fir Canyon). Historic and recent CCH records are located north of the alignment in the Clark Mountains.
Muhlenbergia arsenei	tough muhly	—/—/2B.3	Occurs in rocky carbonate soils in pinyon juniper woodland between 4,600 to 6,100 feet amsl in Clark	Unlikely to occur along IC alignment, potentially suitable rocky carbonate habitat occurs along the IC alignment in pinyon-	Older CNDDB records from the Clark Mountains (Colosseum Mine [1948, 1979]). 2004 CNDDB occurrence on the southeast side of

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			Mountains, Mescal Range, New York Mountains, and nearby areas.	juniper woodland in the Clark Mountains. However, nearest observation at higher elevation than IC alignment.	Clark Mountain within 2 miles of IC alignment at over 6,000 feet amsl. Several CCH records are located north of the alignment in the Clark Mountains.
Muhlenbergia fragilis	delicate muhly	—/—/2B.3	Occurs on open, generally disturbed, limestone gravelly washes at elevations around 5,200 feet amsl in the Clark Mountains, New York Mountains, and Providence Mountains.	Unlikely to occur along the IC alignment, there are only three records in California for this species, including one in the Clark Mountains 3.5 miles north of the alignment.	One 1977 CNDDB record located in the Clark Mountains (Pacific Mine) and one 2007 CCH record located north of the alignment near the Colosseum Mine.
Munroa squarrosa	false buffalo-grass	—/—/2B.2	Occurs in gravelly or rocky soils in pinyon-juniper woodland between 5,000 to 5,900 feet amsl in the Clark Mountains, Ivanpah Mountains, New York Mountains, Providence Mountains, and Castle Mountains.	Unlikely to occur along the IC alignment, nearest location in the Clark Mountains occurs more than 2 miles north of the alignment.	Two CNDDB occurrences in the Clark Mountains (at the summit of Clark Mountain in 1990 and in Colosseum Gorge in 2007) located north of the alignment in the Clark Mountains.
Oenothera cavernae	cave evening- primrose	—/—/2B.1	Occurs on gravelly, often calcareous soils in Great Basin scrub, Joshua tree woodland, and Mojavean desert scrub at elevations ranging from 2,500 to 4,200 feet amsl in the Clark Mountains.	Unlikely to occur along the IC alignment, nearest observations more than five miles north of the alignment; potentially suitable gravelly habitat located along the IC alignment at the base of the east-facing slopes of the Clark Mountains.	Six CNDDB occurrences in the Clark Mountains (northeast of Umberci) between 2007 and 2013, mostly clustered on slopes at the north end of the Ivanpah Valley.
Orobanche ludoviciana var. arenosa	Suksdorf's broomrape	—/—/2B.3	Occurs in Great Basin scrub at elevations ranging from 3,000 to 6,900 feet amsl on the eastern slopes of the Sierra Nevada in Inyo County; also reported from Mono and Lassen Counties.	Unlikely to occur along the IC alignment, one observation near the IC alignment occurs northwest of Independence in Oak Creek in the Sierra Nevada to the west and upslope of the alignment.	One 1981 CNDDB observation located on eastern slope of the Sierra Nevada (North Fork of Oak Creek).
Penstemon thompsoniae	Thompson's beardtongue	—/—/2B.3	Occurs on white calcareous soil in pinyon-juniper woodland at elevations ranging from 5,600 to 6,000 feet amsl in Clark Mountains and New York Mountains.	Unlikely to occur along the IC alignment, known observations occur more than 2 miles north of the alignment at higher elevations than the alignment.	One 2007 CNDDB record for Forsellesia Canyon, Clark Mountain, as well as several CCH records, all at higher elevations and further north than the alignment.

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Penstemon utahensis	Utah beardtongue	—/—/ 2B.3	Occurs on rocky soils in shadscale scrub, Great Basin scrub, Mojavean desert scrub, and pinyon-juniper woodland at elevations ranging from 4,000 to 5,700 feet amsl in the Clark Mountains, Mescal Range, Kingston Range, New York Mountains, and Providence Mountains.	Unlikely to occur along the IC alignment, known observations occur more than 2 miles north of the alignment; potentially suitable habitat in pinyon-juniper woodland in the Clark Mountains.	One 1939 CNDDB record near Colosseum Mine, Clark Mountain; recent collections two miles or more north of the alignment to the northeast of Burro Spring and near Keany Pass, Clark Mountain.
Phacelia anelsonii	Aven Nelson's phacelia	—/—/2B.3	Occurs in creosote bush scrub and pinyon-juniper woodland at elevations ranging from 4,000 to 5,000 feet amsl in Clark Mountains, Mescal Range, New York Mountains, and Panamint Mountains.	Potentially suitable habitat in sandy or gravelly substrates located along the IC alignment at higher elevations in the Clark Mountains where pinyon-juniper woodland occurs.	2008 CNDDB records from Clark Mountains (west of Kokoweef Mountain and at the summit), Mescal Range, and the Ivanpah Mountains. Several recent CCH records exist south of the alignment in the Mescal Range near Mountain Pass.
Phacelia barnebyana	Barneby's phacelia	—/—/2B.3	Occurs in carbonate, gravelly to rocky soils in Great Basin scrub and pinyon-juniper woodland at elevations ranging from 5,200 to 8,900 feet amsl in the Clark Mountains, Mescal Range, Inyo Mountains, Panamint Mountains.	Potentially suitable habitat in carbonate, gravelly or rocky substrates located in the Clark Mountains north of Mohawk Hill.	A 2010 CNDDB record from a canyon on the north side of Mohawk Hill occurs within one mile of the IC alignment. Other CNDDB and CCH occurrences from the Clark Mountains (Forsellesia Canyon [1978], Little Pachalka Canyon [1973], northwest of Mountain Pass) and the Mescal Range.
Phacelia coerulea	sky-blue phacelia	—/—/2B.3	Occurs in gravelly soil in washes or road banks in Joshua tree woodland and pinyon-juniper woodland at elevations ranging from 4,600 to 6,600 feet amsl.	Potentially suitable habitat located along the IC alignment at higher elevations in the Clark Mountains where pinyon-juniper woodland occurs.	A 1941 CNDDB record near Mountain Pass; northeast of Umberci Mine, Clark Mountain, and Striped Mountain, Ivanpah Mountains. recent occurrences northeast of Cima Road, Mescal Range Several historic CCH records are located in the Clark Mountains
Phacelia perityloides var. jaegeri	Jaeger's phacelia	—/—/ 1B.3	Occurs in rocky carbonate soils in pinyon-juniper woodland at	Unlikely to occur along the IC alignment, documented records	The IC alignment falls outside of the known elevational range for this

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			elevations ranging from 5,400 feet to 6,900 feet amsl in the Clark Mountains and Mesquite Mountains.	north of the alignment at higher elevations than the alignment.	species. One 2008 CNDDB occurrence in Fir Canyon and several historic CCH records are located north of the alignment in the Clark Mountains.
Physalis lobata	lobed ground- cherry	—/—/2B.3	Occurs in decomposed granitic soils at dry lake margins at elevations ranging from 1,600 to 2,600 feet amsl in eastern Mojave Desert, primarily in the Mojave National Preserve and Sheephole Mountains.	Potentially suitable habitat in decomposed granitic substrates along dry lake margins in Ivanpah Valley, based on 2008 record with location in the Clark Mountains "west of Primm, NV."	One 2008 CNDDB record from the Clark Mountains "west of Primm, NV." One CCH record south of Baker in Piute Range.
Physaria chambersii	Chambers' physaria	—/—/2B.3	Occurs in carbonate rocky soils in pinyon-juniper woodlands at elevations ranging from 5,000 to 8,200 feet amsl in Clark Mountains and Mescal Range.	Potentially suitable habitat in pinyon-juniper woodland along the IC alignment in the Clark Mountains near the Mountain Pass Substation.	Two CNDDB records from 2010-2011 near the IC alignment in the Clark Mountains in pinyon-juniper woodland near the Mountain Pass Substation. Additional CNDDB records near Colosseum Mine, northeast of Mountain Pass, and Forsellesia Canyon.
Polygala acanthoclada	thorny milkwort	—/—/ 2B.3	Occurs in shadscale scrub, Joshua tree woodland, and pinyon-juniper woodland at elevations ranging from 3,100 to 6,000 feet amsl.	Potentially suitable habitat located along the IC alignment in the Clark Mountains.	1990 CNDDB occurrence in the Clark Mountains 0.5 miles east of Mountain Pass Rare Earth Mine.
Puccinellia simplex	California alkali grass	—/—/ 1B.2	Prefers alkaline, vernally mesic sinks, flats, and lake margins in yerba mansa meadows, annual grasslands, and vernal pools at elevations from sea level to 3,000 feet amsl; species has a broad range in restricted habitats in California.	Unlikely to occur along the IC alignment, one undocumented occurrence reported north of the alignment near Barstow.	One undated CNDDB record from the Mud Hills (Owl Canyon in Rainbow Basin) north of Barstow, based upon a "2015 comment by Charlton." No specimen from this area.
Ranunculus hydrocharoides	frog's-bit buttercup	—/—/2B.1	Occurs in freshwater marshes at elevations ranging from 4,000 to 9,200 feet amsl.	Unlikely to occur along the IC alignment, since the only records in the Owens River drainage occurs outside the IC alignment near Bishop and Laws to the northeast.	One 1994 CNDDB observation is located in Bishop at west end of Sierra Street, and one 1964 record occurs near Laws, to the northeast of the alignment. All other CNDDB records occur in the Sierra Nevada.

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Sclerocactus johnsonii	Johnson's bee- hive cactus	—/—/2B.2	Occurs on granitic soils in Mojavean desert scrub at elevations ranging from 1,640 to 4,000 feet amsl, known in California primarily in desert ranges east of the Owens Valley. One 1991 record in Clark Mountains.	Unlikely to occur along the IC alignment, but potentially present; single record near IC alignment lacks exact locational data.	One 1991 CNDDB record in Clark Mountains on limestone substrate; record states that plants may have been removed by pipeline construction.
Sphenopholis obtusata	prairie wedge grass	—/—/2B.2	Occurs in moist locations, such as meadows and seeps and woodlands at elevations ranging from 800 to 9,500 feet amsl in the Sierra Nevada, Great Valley, and White Mountains.	Unlikely to occur along the IC alignment, Potentially suitable moist habitat located along the IC alignment near Aberdeen in meadows and seeps.	One 1983 CNDDB record is located along Taboose Creek in the foothills of the eastern Sierra; 5 miles west of Aberdeen (Taboose Creek). CCH records northwest of Aberdeen.
Stipa arida	Mormon needle grass	—/—/2B.3	Occurs on carbonate soils in Joshua tree woodland and pinyon-juniper woodland at elevations ranging from 3,600 to 6,000 feet amsl in many desert mountain ranges.	Potentially suitable Joshua tree woodland and pinyon-juniper woodland located along the IC alignment in the Clark Mountains.	CNDDB occurrences from 1950- 2013 in Clark Mountains north of Wheaton Wash, southwest of Colosseum Mine, near Keany Pass, northwest of Umberci Mine, Pachalka Spring, and northeast of summit.
Suaeda occidentalis	western horned seablite	—/—/2B.3	Occurs in moist and alkaline locations in Great Basin scrub at elevations below 7,200 feet amsl in isolated alkaline habitats in Inyo, Mono, Lassen, and Siskiyou Counties.	Potentially suitable moist and alkaline habitat located along the IC alignment near Klondike Lake; record is 40 years old, but this species is often overlooked.	One 1978 CNDDB record from Klondike Lake northwest of Big Pine.
Thelypodium integrifolium subsp. complanatum	foxtail thelypodium	—/—/2B.2	Occurs in moist alkaline or sub- alkaline soils in Great Basin scrub and in meadows and seeps at elevations ranging from 3,600 to 8,200 feet amsl in Inyo, Mono, and Lassen Counties.	Unlikely to occur along the IC alignment, last observation near Blackrock was over 45 years ago; most observations in Inyo County are in the White Mountains or nearby.	One 1970 CNDDB observation from Black Rock Springs, 4 miles north of Independence and 2 miles west of IC alignment.
Wislizenia refracta subsp. refracta	jackass-clover	—/—/2B.2	Occurs in desert dunes, Mojavean and Sonoran desert scrub, and alkaline habitats and playas at elevations ranging from 300 to	Unlikely to occur along the IC alignment, nearest observation to alignment in Shadow Valley more than 80 years old, and other	1937 CNDDB record located in the Shadow Valley west of the Clark Mountains and 2004 CNDDB record more than 7 miles north of the IC alignment east of Yermo and

Table 4.4-5: Special Status Plant Species not Observed, but with a Potential to Occur, along the IC Project Alignment

Scientific Name	Common Name	Regulatory Status (USFWS/CDFW/CNPS)	Habitat and Distribution in California	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			3,800 amsl in the Mojave and Sonoran Deserts.	observation more than 5 miles north of alignment.	the Calico Mountains along Coyote Lake Road.
Woodsia plummerae	Plummer's woodsia		Occurs on granitic rocky soils in pinyon-juniper woodland at elevations ranging from 5,300 to 6,600 feet amsl in Clark Mountains, Kingston Range, New York Mountains, and Providence Mountains.	Unlikely to occur along the IC alignment, 80-year-old CNDDB record in Clark Mountains at higher elevation and further north than the IC alignment.	A 1937 CNDDB record in the Clark Mountains 3.5 miles north of IC alignment at 6,400 feet amsl.

#### Notes:

FE = Federal Endangered; FT = Federal Threatened

CE = California Endangered; CT = California Threatened; CSC = California Species of Concern

List 1: Plants Rare, Threatened, or Endangered in California and Elsewhere

List 2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

# 4.4.3.4 Special-Status Wildlife Species

For the purposes of this PEA, special status wildlife species are defined as:

- Species listed or candidates for listing as threatened or endangered under FESA
- Species considered to be "sensitive" by the BLM
- Species listed or candidates for listing as threatened or endangered under the CESA
- California Fully Protected species
- Species designated as an CSC by the CDFW
- Migratory birds and any of their parts, eggs, and nests, as protected by the MBTA
- Furbearing mammals, as protected from take by California Fish and Game Code CCR 14 § 460

Sixty-four special-status wildlife species with potential to occur within 10 miles of the IC Project Alignment were identified. Of these, 16 special-status wildlife species were observed along the IC Project Alignment during 2017-2018 special-status wildlife surveys. Observations include seven federal and/or California-listed or CDFW Fully Protected wildlife species:

- One federally listed species: desert tortoise
- Two California Endangered species: gilded flicker (*Colaptes chrysoides*) and bald eagle (*Haliaeetus leucocephalus*)
- Two California Threatened species: Swainson's hawk (*Buteo swainsoni*) and bank swallow (*Riparia riparia*)
- Three CDFW Fully Protected species: desert bighorn sheep (*Ovis canadensis nelsoni*), golden eagle (*Aquila chrysaetos*), and bald eagle

In addition, eight California Species of Special Concern were observed: burrowing owl, northern harrier (Circus cyaneus), loggerhead shrike (Lanius ludovicianus), summer tanager (Piranga rubra), yellow warbler (Setophaga petechia), Le Conte's thrasher (Toxostoma lecontei), yellow-headed blackbird (Xanthocephalus xanthocephalus). Eight Bureau of Land Management Sensitive Species were observed: northern sagebrush lizard (Sceloporus graciosus graciosus), golden eagle, bald eagle, burrowing owl, Swainson's hawk, gilded flicker, bank swallow, and desert bighorn sheep. Desert kit fox was observed and is protected from take under CFGC § 460.

Locations of observed special-status wildlife species are shown in Figureset 4.4-4, and habitat and location information for observed special-status wildlife species are presented in Table 4.4-6, along with their potential to occur in other locations along the IC Project Alignment.

Table 4.4-7 lists the special-status wildlife species that were not observed along the IC Project Alignment along with their potential to occur on the alignment. A summary of special-status wildlife reported from the IC Project Alignment is provided below.

#### 4.4.3.4.1 Fish

Owens tui chub (Siphateles bicolor snyderi) and Owens pupfish (Cyprinodon radiosus), both Federal Endangered species, and Owens speckled dace (Rhinichthys osculus spp.2) and Owens sucker (Catostomus fumeiventris), both California Species of Special Concern, have historic ranges that overlap with Segment 1 of the IC Project Alignment. They have been reported from the Owens River and its tributaries, and from associated drainages, canals, streams, and hot springs that occur along the IC Project Alignment in Segment 1 between Cartago and Bishop, based on CNDDB (2018) and PISCES. (Santos et al. 2014) However, these species have suffered steep population declines due to habitat degradation and loss as well as introduction of non-native fish. One occurrence of Owens speckled dace was reported in

1969 but is now considered extirpated (CDFW 2018e); the Owens tui chub and Owens pupfish are also considered likely extirpated in the vicinity of the IC Project Alignment.

# **4.4.3.4.2** Amphibians

No special-status amphibian species were observed during the special-status wildlife surveys.

The arroyo toad is a Federally Endangered, CDFW Species of Special Concern, and BLM Sensitive species. The final rule on critical habitat for the arroyo toad was published in 2011. (USFWS 2011) No designated critical habitat for arroyo toad occurs within the vicinity of the IC Project Alignment. The range of arroyo toad is outside of the IC Project Alignment (Calherps 2018); no arroyo toads were observed during the 2017 special-status wildlife surveys. Suitable habitat for the arroyo toad (CDFW 2018a, CNDDB records) includes running water, clear standing water, and pools, which are requirements for arroyo toad reproduction. (Calherps 2018) There is no suitable habitat for the arroyo toad along the IC Project Alignment. There is one 70-year old CNDDB record near where the IC Project Alignment crosses the Mojave River near Lenwood in a location where there is only limited seasonal water flow; no additional records exist and the species is not expected to occur in this location again. Unsuitable habitat, where the arroyo toad has not been observed and is unlikely to be observed, includes all upland areas, all developed areas, barren areas, and any areas outside of the Mojave River. Given the lack of suitable habitat and the ephemeral nature of flow where the IC Project Alignment crosses the Mojave River, this species is unlikely to occur in IC Project work areas.

# **4.4.3.4.3** Reptiles

Twenty-five live desert tortoises were observed along the IC Project Alignment in Segments 2, 3N, 3S, and 4; the highest concentration of observations were made in Segments 3N and 3S between Kramer Junction and Barstow, often in Mojave desert scrub vegetation with extensive annual wildflower blooms that serve as a food source (Figures 4.4-4 and 4.4-6). Documentation of desert tortoise presence within the IC Project Alignment also includes 151 burrows and 49 other signs such as carcass, pallet, scat, and tracks. Details on desert tortoise observations are provided in Appendix G to this PEA document. Designated critical habitat for desert tortoise occurs within Segments 2, 3N, 3S, and 4 as shown in Figureset 4.4-8.

Northern sagebrush lizard, a BLM Sensitive species, was observed in five locations in Segment 1 near the Control Substation, southwest of Bishop, near the Tinemaha reservoir (northeast and south), and near the Alabama Hills in Allscale Scrub, Big Sagebrush, Rubber Rabbitbrush Scrub, and Shadscale Scrub; in all cases, the shrublands were within 1,500 feet of a stream or the Owens River (Figureset 4.4-4).

Mohave fringe-toed lizard (*Uma scoparia*) and banded Gila monster (*Heloderma suspectum cinctum*), both CDFW CSC, were not observed during 2017-2018 surveys but have the potential to occur within the IC Project Alignment in specific habitats (Figureset 4.4-5). Mojave fringe-toed lizard is a sand-dwelling species that occurs in loose, wind-blown sand in sand dunes, dry lakebeds, riverbanks, desert washes, sparse alkali scrub, and desert scrub in Segment 3N in the Harper Lake area, between Baker and Barstow, in the Cronese Basin, and along the Mojave River in Segments 3N, 3S, and 4. The banded Gila monster has been reported in CNDDB (2018) south of the IC Project Alignment in Afton Canyon and north of the IC Project Alignment in the Clark Mountains (CNDDB 2018). Potentially suitable habitat for the banded gila monster is limited to washes in incised rocky canyons and arroyos along the IC Project Alignment in the Clark Mountains and the Cady Mountains.

Table 4.4-6: Special-status Wildlife Species Observed along the IC Project Alignment 2017-2018

Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment				
Observed Sensitive	Observed Sensitive Wildlife on IC Project Alignment								
Reptiles									
Gopherus agassizii	desert tortoise	FT / CT / —	Occurs in arid, sandy or gravelly locations along riverbanks, washes, sandy dunes, creosote scrub, and rocky hillsides.	Likely to occur only in suitable habitat between Olancha to Kramer Junction and from Kramer Junction to Barstow especially in designated critical habitat.	221 observations of living individuals or sign, with 25 living individuals and 196 sign found along the IC alignment. Live Desert tortoise were observed primarily between Kramer Junction and Barstow. Additionally, desert tortoise sign were observed between Little Lake and Inyokern.				
Sceloporus graciosus graciosus	northern sagebrush lizard	—/—/BLM S	Occurs in sagebrush scrub and other types of shrublands, mainly in the mountains and prefers open areas with scattered low brush and sunny areas for basking.	Suitable habitat between Bishop and south of Lone Pine (east of Alabama Hills).	Five individuals of northern sagebrush lizard were observed southwest of Bishop, near the Tinemaha reservoir (northeast and south), and near the Alabama Hills in scrub habitats along IC alignment within 1,500 feet of a stream or the Owens River.				
Birds									
Aquila chrysaetos	golden eagle	— / FP, WL / BLM S	Occurs in cliff-walled canyons that provide suitable nesting habitat and in large trees and open areas within foothills, mountain areas, sage-juniper flats, and deserts.	Suitable nesting habitat for the golden eagle occurs along the IC alignment where cliff-walls and rocky mountain ledges occur at the southern end of south Haiwee Reservoir, the east side of the alignment south of Little Lake, El Paso Mountains, and Elephant Mountain west of Yermo.	Three non-nesting golden eagle observations occurred along the IC alignment during the surveys: just south of Bishop in the foothills of the Tungsten Hills; soaring above creosote bush scrub vegetation in the El Paso Mountains; and flying through the Ivanpah Valley. CNDDB nesting records overlapping the alignment (on or within 0.2 miles) occur at in 2009 at south Haiwee Reservoir; in 1974, 1977, and 1979 on cliffs on east side of alignment south of Little Lake; in 2010 in El Paso Mountains north of Johannesburg; and in 1971 at Elephant Mountain west of Yermo.				
Athene cunicularia	burrowing owl	— / CSC / BLM S	Occurs mainly in grassland and open scrub from the seashore to interior California and is strongly associated with ground squirrel burrows.	Suitable nesting habitat was observed along Segment 3N near Harper Lake and between Calico Mountains and the Mitchell Range.	Two observations of live owls near burrows were observed: one between the Calico Mountains and the Mitchel Range; and one on the south side of Harper Lake. CNDDB historic and recent occurrences for burrowing owl occur at Coso Junction.				
Buteo swainsoni	Swainson's hawk	— / CT / BLM S	Occurs in grasslands with scattered trees, juniper-sage	Potentially suitable nesting habitat was observed along the IC	Seven non-nesting individuals observed foraging along or flying over the IC alignment				

Table 4.4-6: Special-status Wildlife Species Observed along the IC Project Alignment 2017-2018

Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			flats, riparian areas, savannahs, and agricultural or ranch lands with tree groves. Requires adjacent suitable foraging areas such as grasslands, alfalfa or grain fields that support rodent populations.	alignment near Bishop, Klondike Lake, Big Pine, Independence, Manzanar, and Haiwee Reservoir.	from Bishop to Ridgecrest. Eleven CNDDB records occur near the alignment from Bishop, Klondike Lake, Big Pine south to the Tinemaha Reservoir, north of Independence, near Manzanar, and near the Haiwee Reservoir – ten of the eleven observations were of active nests or nesting behavior.
Circus cyaneus	northern harrier	—/CSC/—	Occurs in large, undisturbed tracts of wetlands and grasslands with low, thick vegetation. They breed in freshwater and brackish marshes, lightly grazed meadows, old fields, tundra, dry upland prairies, and drained marshlands.	Potentially suitable nesting habitat was observed in wetland and freshwater marsh habitat north of Olancha.	One non-nesting observation of a foraging adult male was made near the IC alignment in Olancha, on the Olancha Sand Dunes adjacent to desert scrub. This individual was likely migrating through the area.
Colaptes chrysoides	gilded flicker	— / CE / BLM S	Occurs in Sonoran and Mojave desert communities and riparian habitat; reported nesting observations occur to the east of the IC alignment along the Colorado River.	No suitable nesting habitat occurs along the IC alignment, but incidental non-nesting observation made in the Clark Mountains.	One observation of a single gilded flicker in the Clark Mountains west of the Ivanpah Substation. There are three CNDDB records of non-nesting gilded flickers in the Clark Mountains and adjacent Shadow Valley.
Haliaeetus leucocephalus	bald eagle	— / CE, FP / BLM S	Nests in large, old-growth live trees with open branches. Species is known to roost communally in winter. Prefers trees near large bodies of water such as lake margins and rivers for both nesting and wintering. Most nests are within 1 mile of water.	Potentially suitable habitat is present along Segment 1 near Tinemaha Reservoir and the fish hatchery on Fish Springs Road, as well as locations reported in eBird (2018) with mature cottonwood trees near Klondike Lake, South Haiwee Reservoir, Owens Lake, and Little Lake.	Two non-nesting observations occurred along Segment 1: one adult was perched on a power pole near a fish hatchery just west of the Owens River on Fish Springs Road, south of Bishop, and another was observed flying near the Project alignment near south Haiwee Reservoir. There is one 1990 CNDDB record along the IC alignment to the west of Tinemaha Reservoir that references an occupied but unsuccessful nest.
Lanius ludovicianus	loggerhead shrike	—/CSC/—	Occurs in open woodlands, savannah, pinyon-juniper woodland, Joshua tree woodland, riparian woodland, desert oases, scrub, and washes in	Suitable nesting habitat was observed in the Indian Wells Valley; potentially suitable habitat along the IC alignment occurs where dense shrubs and brush provide adequate cover,	Eighteen observations of loggerhead shrikes, with a total of 29 individuals, were observed along the IC alignment. There were no observations of nesting loggerhead shrikes on Segment 1, but one individual was observed nesting in a tower surrounded by creosote bush

Table 4.4-6: Special-status Wildlife Species Observed along the IC Project Alignment 2017-2018

Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			conjunction with sufficient shrubs, trees, posts, fencelines, or other perches. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	from south of the Tinemaha Reservoir to the slopes of the Clark Mountains.	scrub on Segment 2 in the Indian Wells Valley. Non-nesting observations were located near the following: south of Tinemaha Reservoir, Manzanar, North Haiwee Reservoir, Little Lake, Pearsonville, Inyokern, south of Rand Mountains to Kramer Junction area (2 locations), east of Kramer Junction, southeast of Kramer Junction, and slopes of the Clark Mountains (2 locations).
Piranga rubra	summer tanager	—/ CSC / —	Occurs in mature, desert riparian communities dominated by cottonwoods and willows, which provide foraging and nesting habitat.	There is no suitable nesting habitat for the summer tanager along the IC alignment, since large stands of undisturbed, mature riparian forest are mostly lacking.	A single non-nesting individual was observed near the Control Substation. A recent non-nesting CNDDB record is located west of the alignment at Baker Creek near Big Pine. Two non-nesting CNDDB records have been reported, one in Afton Canyon (1977) in the Cady Mountains and the other north of the alignment in the Clark Mountains (1970).
Riparia riparia	bank swallow	— / CT / BLM S	Occurs near vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, and lakes for nesting. Colonial nester; nests primarily in riparian and other lowland habitats west of the desert.	Suitable nesting habitat potentially present along the Owens River south of the Tinemaha Reservoir, north of Lone Pine, and near the Haiwee Substation. Potentially suitable habitat with earthen banks, bluffs, and cliffs may occur along other discrete portions of the Owens River.	Three observations along the Owens River south of the Tinemaha Reservoir, area 2 miles north of Lone Pine, and near the Haiwee Substation.
Setophaga petechia	yellow warbler	—/CSC/—	Occurs in shrubby thickets and woods, particularly along watercourses and in wetlands.	There is no suitable nesting habitat for yellow warbler along the IC alignment.	One observation of a single yellow warbler was observed foraging along Halloran Wash and is assumed to be a migrant.
Toxostoma lecontei	Le Conte's thrasher	—/CSC/—	Occurs in desert washes, desert scrub, alkali desert scrub, and desert succulent shrub communities; it also occurs in Joshua tree woodland. This species nests in dense, spiny shrubs or densely branched cactus	Suitable nesting habitat located primarily between Halloran Springs and the Clark Mountains.	Two non-nesting observations were documented along the alignment: one was observed in Joshua tree woodland on the west-facing slopes of the Clark Mountains and a second individual was observed flying just south of Halloran Springs Road. A 1946 CNDDB record for Le Conte's thrasher is reported from Inyokern.

Table 4.4-6: Special-status Wildlife Species Observed along the IC Project Alignment 2017-2018

Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			habitat in desert washes 2 to 8 feet above ground.		
Xanthocephalus xanthocephalus	yellow- headed blackbird	—/CSC/—	Occurs only where large insects are abundant, and nesting is timed with maximum emergence of aquatic insects. Nests occur in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds.	Potentially suitable nesting freshwater marsh habitat at South Haiwee Reservoir, along with some freshwater marsh habitats in Segment 1.	A flock was observed at the South Haiwee Reservoir; no nesting birds observed. No CNDDB records exist along the IC alignment.
Mammals					
Ovis canadensis nelsoni	desert bighorn sheep	— / FP / BLM S	Occurs on steep, rugged mountainous terrain. Within their range, desert bighorn sheep also use canyon bottoms, alluvial fans, and sandy washes to find water and forage.	Likely to only occur in the Cady and Clark Mountains.	Two males seen near Cave Mountain in the Cady Mountains along alignment in 2018. An additional observation of tracks was recorded in 2017 in the Clark Mountains.
Vulpes macrotis	desert kit fox	Fur-bearing mammal, CCR 14 § 460	Occur in open shrubland habitat within prey animal (jackrabbits, desert cottontail, rodents) habitat. Require loose sandy and loamy soils for excavating dens during pup rearing.	Likely to occur only in suitable open shrubby habitat between Kramer Junction and Yermo; and in the Shadow Valley.	Five observations were documented along the alignment; two east of Kramer Junction in creosote bush scrub, one in the Waterman Hills in creosote bush scrub, and two in the Shadow Valley north of Cima Road in shadscale scrub.

Table 4.4-7: Special-status Wildlife Species Not Observed along the IC Project Alignment 2017-2018

Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment				
Sensitive Wildlife N	Sensitive Wildlife Not Observed on the IC Project Alignment but Reported in CNDDB for Surrounding Area								
Fish									
Catostomus fumeiventris	Owens sucker	—/CSC/—	Endemic to the Owens River drainage and is most common in areas with long runs and few riffles. Adults can thrive in reservoirs but needs gravelly riffles in tributary streams for spawning. Owens sucker occupies backwaters and warmer, lower, and calmer water.	Unlikely to occur along the IC alignment, the two observations reported near the alignment are more than 40 years old.	CNDDB records from 1973 to 2011 documenting this species in several locations along the Owens River and in ditches in and near Bishop to the northeast of the IC alignment; at the Fish Springs Hatchery 5 miles southeast of Big Pine in 1934; and south of the Tinemaha Reservoir near Aberdeen in 1973.				
Cyprinodon radiosus	Owens pupfish	FE /CE, CFP / —	Occurs in warm, clear, shallow water that is free of exotic fish and has areas of firm substrate for spawning.	Unlikely to occur along the IC alignment, species likely remains only in artificial refugia outside of the alignment area.	All Owens pupfish observations have likely been extirpated along the IC alignment, remaining pupfish occur in artificial refugia outside of the alignment.				
Oncorhynchus mykiss aguabonita	California golden trout	—/CSC/—	Occurs in Kern Plateau in wide, shallow and exposed streams with little riparian vegetation. Prefers stream bottoms of sand, gravel and some cobble with clear, usually cool water.	Unlikely to occur along the IC alignment, the alignment is well out of the known range.	Native populations have not been reported in the area of the IC alignment, only four records listed in CNDDB and all are on the Kern Plateau.				
Rhinichthys osculus subsp. 2	Owens speckled dace	—/CSC/—	Occurs in small streams and springs in the Owens Valley and occupies a variety of aquatic habitats cooler than 84 degrees Fahrenheit.	Unlikely to occur along the IC alignment, previous populations between Bishop and Big Pine are considered extirpated.	CNDDB records between 1893 and 1942 located in Bishop, Keough Hot Springs (1942), Owens River above Aberdeen (1934), north of Independence (1893), and Little Lake (1942). Predation by nonnative fish and habitat alteration have eliminated the Owens speckled dace from much of its range, previous records are located near the alignment between Bishop and Big Pine are now considered extirpated.				
Siphateles bicolor mohavensis	Mohave tui chub	FE / CE, FP / —	Mohave tui chub requirements for spawning sites include aquatic vegetation where they lay eggs and shallow pools	Unlikely to occur along the IC alignment, the only three known sites do not intersect the IC alignment.	All CNDDB records are from three known sites: Zzyzx Springs (2008), China Lake Naval Air Weapons Station (2011), and the CDFW Camp Cady Wildlife Area				

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Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			where fry feed on insect larvae and detritus.		(2011). Camp Cady is the closest (1.4 miles) to the IC alignment. All locations are closed ponds or spring systems with no connection to the Mojave River.
Siphateles bicolor snyderi	Owens tui chub	FE / CE / —	Occurs in clear, clean water, adequate cover, and aquatic vegetation, including the Owens River basin in a variety of habitats.	Unlikely to occur along the IC alignment, the species occurs only within six known sites that do not intersect the alignment.	There are only six known populations of Owens tui chub; three natural populations and three translocated populations. One natural population recorded in 2002 at Cabin Bar Ranch south of Cartago, California is approximately 0.5 miles southwest of the alignment. The other five are located in: Owens River Gorge, Hot Creek Hatchery, Mule Spring, Little Hot Creek and at the University of California White Mountain Research Station.
Amphibians					
Anaxyrus californicus	arroyo toad	FE / CSC / —	Occurs in exposed sandy streamsides with stable terraces for burrowing, scattered vegetation for shelter, and areas of quiet water or pools free of predatory fishes with sandy or gravel bottoms (without silt) for breeding.	Unlikely to occur along the IC alignment, the required breeding habitat is lacking where the IC alignment intersects the Mojave River.	One 1949 CNDDB record reported along the Mojave River near Lenwood 4 miles southeast of Hinkley.
Batrachoseps campi	Inyo Mountains slender salamander	— / CSC / BLM S	Occurs under rocks on moist, sandy loam soils in steep-walled canyons with permanent springs and in underground crevices.	Unlikely to occur along the IC alignment, the IC alignment is outside known range of this species and suitable moist canyon habitat is absent.	Species endemic to the Inyo Mountains outside of the IC alignment, where it is found in moist canyons where surface water is present.
Lithobates pipiens	northern leopard frog	—/CSC/—	Occurs east of the Sierra Nevada-Cascade Crest and near permanent or semi- permanent water in a variety of habitats. Shoreline cover and submerged and emergent aquatic vegetation are	Unlikely to occur along the IC alignment, limited potentially suitable habitat between Bishop and Just south of the Tinemaha Reservoir along the IC alignment.	A 1994 CNDDB record is located west of Bishop in Pine Creek; a 1976 record in the Owens River above Aberdeen; and two 1960 records: east of Bishop at Birch Creek and in Baker Creek west of Big Pine.

Table 4.4-7: Special-status Wildlife Species Not Observed along the IC Project Alignment 2017-2018

Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			important habitat characteristics.		
Rana sierrae	Sierra Nevada yellow-legged frog	FE / CT, WL / —	Occurs in close proximity to water in montane areas, inhabiting lakes, ponds, meadow streams, isolated pools, and sunny riverbanks in the Sierra Nevada and prefers open stream and lake edges with a gentle slope; it requires waters that do not freeze to the bottom or dry out. Tadpoles may require 2 - 4 years to complete their aquatic development.	Unlikely to occur along the IC alignment, since suitable habitat lacking. Incidental record near Lone Pine over 100 years old.	A 1917 CNDDB record occurs at Lone Pine north of junction of Highways 395 and 136; all other records within 10 miles of the alignment occur at high elevation in the eastern Sierra Nevada.
Reptiles					
Anniella campi [A. pulchra pulchra]	silvery legless lizard	—/CSC/—	Occurs in desert canyons and springs along the western edge of the Mojave Desert in Kern and Inyo Counties.	Unlikely to occur along the IC alignment, suitable habitat is largely absent along the alignment.	A 2001 CNDDB record occurs in Nine-Mile Canyon 7.25 miles south-southwest of Little Lake. <i>Anniella pulchra</i> has recently been split into 5 different species; the species reported in 2001 has been renamed <i>Anniella campi</i> . No CNDDB records exist along the IC alignment for <i>Anniella campi</i> .
Diadophis punctatus regalis	regal ringneck snake	—/CSC/—	Occurs in moist habitats, including wet meadows, riparian corridors, stock tanks, rocky hillsides, grassland, coniferous forests, and woodlands.	Unlikely to occur along the IC alignment, springs and similar moist areas are lacking along the alignment in the Clark Mountains.	A 2016 CNDDB record occurs at Pachalka Springs in the Clark Mountains north of the IC alignment.
Emys marmorata	western pond turtle	— /CSC / BLM S	The species is found in permanent or nearly permanent water in a wide variety of habitats from sea level to 4,200 feet amsl. They require basking sites such as partially submerged logs, rocks, mats of	Unlikely to occur along the IC alignment, suitable aquatic habitat is absent along the alignment south of Segment 1 where this observation was recorded.	One 1987 CNDDB record is located along the Mojave River south of Yermo, but the species is likely extirpated in the area; also reported in 1999 from the Mojave River at Afton Canyon and in 1999 at Camp Cady Ranch in areas that do not intersect the IC alignment.

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Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			floating vegetation, or open mud banks.		
Heloderma suspectum cinctum	banded Gila monster	— / CSC / BLM S	Occurs in the lower slopes of rocky canyons and arroyos but is also found on desert flats among scrub and succulents with sandy soils in Mojavean desert scrub and riparian scrub.	Potentially suitable habitat confined to incised canyons along the IC alignment in the Clark Mountains.	CNDDB records from 1962 and 1977 are located more than 3 miles north of the IC alignment in the Clark Mountains.
Uma scoparia	Mojave fringe- toed lizard	— / CSC / BLM S	Occurs in desert dunes, desert washes and Mojavean desert scrub communities. Shrubs or annual plants may be necessary for the arthropods found in the lizard's diet. It lives in fine, loose, windblown sand in sand dunes, dry lakebeds, riverbanks, desert washes, sparse alkali scrub, and desert scrub.	Potentially suitable desert dune habitat located along the alignment between Hinkley and Baker; and between the Cady Mountains and Clark Mountains.	2010 CNDDB records exist near Hinkley, 1949 CNDDB record near Baker, two 2010 CNDDB records on the edge of the Mojave River west of Lenwood, and one 1949 CNDDB record with multiple collections from Cronese Lake.
Birds					
Accipiter gentilis	northern goshawk	— / CSC / BLM S	The northern goshawk typically nests on north-facing slopes, near water. Red fir, lodgepole pine, Jeffrey pine, and aspens are typical nest trees used by this species. Species will use old nests and maintains alternate sites.	Unlikely to nest along the IC alignment, suitable nesting conifers and aspens are absent from the IC alignment and all CNDDB records are at elevations much higher than those along the IC alignment.	All CNDDB records located within 3 miles of the IC alignment occur in the eastern Sierra Nevada at higher elevations than those along the IC alignment.
Agelaius tricolor	tricolored blackbird	— / CC, CSC / BLM S	Tricolored blackbird requires open water, protected nesting substrate, and foraging area with insect prey within 0.5 miles of the colony.	Unlikely to nest along the IC alignment, no records in Owens Valley and Segment 1, suitable nesting habitat is absent along the IC alignment south of Segment 1.	Four 2014 CNDDB records located near the IC alignment south of the Mojave River between Daggett and Newberry Springs.
Asio otus	long-eared owl	—/ CSC / —	The long-eared owl requires open land that supports rodent populations as well as the	Unlikely to nest along the IC alignment, no CNDDB records in the past 80 years for this species	Two CNDDB records from 1937 are located south of Big Pine at Crater

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Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			presence of old nests of crows, hawks, or magpies for breeding in riparian bottomlands, mature willows and cottonwoods, or belts of live oak paralleling stream courses.	in the alignment area and general lack of large undisturbed riparian forests along the alignment.	Mountain and north of Independence at Twin Lakes.
Charadrius alexandrinus nivosus	western snowy plover	FT / CSC / —	Occurs in sandy, gravelly or friable soils for nesting and they occur on sandy beaches, salt pond levees, and shores of large alkali lakes.	Potentially suitable nesting habitat located along the IC alignment at the southern end of the Owens Valley dry lake bed and on the southern edge of Harper Dry Lake.	One 2004 CNDDB record for western snowy plover occurs at Owens Lake and one 1992 record at Tinemaha Reservoir south of Big Pine outside of the alignment. Known nests reported on the shores of Owens Lake; nesting also reported at Harper Lake in 1977, and western snowy plovers assumed to be nesting at Harper Lake in 1988.
Charadrius montanus	mountain plover	— / CSC / BLM S	Occurs in short grasslands, freshly plowed fields, newly sprouting grain fields, and occasionally in sod farms, landscaping, bare ground, and flat topography, where it prefers grazed areas and areas with burrowing rodents within chenopod scrub and valley and foothill grassland communities.	Unlikely to nest along the IC alignment. The IC alignment is located outside the breeding range for mountain plover; suitable nesting habitat is therefore absent.	Three CNDDB records occur near the IC alignment, a 2007 record at Owens Lake; a 1994 record at Tinemaha Reservoir south of Big Pine, and a 2010 record near Harper Dry Lake.
Coccyzus americanus occidentalis	western yellow- billed cuckoo	FT / CE / BLM S	Occurs in riparian forest and will nest in riparian thickets of willow, often mixed with cottonwoods, with an understory of blackberry, nettle, and wild grape.	Unlikely to nest along the IC alignment, known nesting areas are north of Tinemaha Reservoir outside of the alignment. Suitable dense riparian forest nesting habitat absent along the IC alignment, existing riparian forest along alignment is fragmented and disturbed along Segment 1 and absent south of Segment 1.	CNDDB records of the western yellow-billed cuckoo are located along the Owens River south of Aberdeen (1993), Tinemaha Reservoir (2003), Walter's Ranch, north of Independence (1917); and along the Mojave River southwest of Barstow near Hodge (1986). Nesting records occur north of the Tinemaha Reservoir (1993), 1.5 miles east of the IC alignment.

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Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
Empidonax traillii extimus	southwestern willow flycatcher	FE/ CE / —	Occurs in dense riparian forest and woodlands associated with rivers, swamps, lakes, reservoirs, and other wetlands. In most instances, nests occur in dense vegetation within the first 10 to 13 feet above ground, with suitable habitat. It may also nest in thickets dominated by non-native tamarisk and Russian-olive, or in mixed native/non-native stands.	Unlikely to nest along the IC alignment, known nesting areas are north of Tinemaha Reservoir outside of the alignment. Suitable dense riparian forest nesting habitat absent along the IC alignment, existing riparian forest along alignment is fragmented and disturbed along Segment 1 and absent south of Segment 1.	Two CNDDB records near IC alignment, a 2006 record located in Owens River tributary at Fish Springs Road 1 mile east of the alignment and a 1917 record near Walter's Ranch north of Independence and 3 miles west of IC alignment.
Icteria virens	yellow-breasted chat	—/CSC/—	Occurs in riparian thickets near watercourses and nests in low, dense riparian vegetation consisting of willow, blackberry and wild grape.	Unlikely to nest along the IC alignment. Suitable dense riparian forest nesting habitat absent along the IC alignment, existing riparian forest along alignment is fragmented and disturbed. All CNDDB records are older than 100 years.	All CNDDB records are over one hundred years old.
Ixobrychus exilis	least bittern	—/CSC/—	Occurs in marshlands in colonies and along borders of ponds and reservoirs where ample cover is available. Nests are usually placed low in tule and over water.	Potentially suitable nesting habitat is located along the IC alignment in marshlands east of Independence and along the western margins of Owens Lake.	One 1995 CNDDB nesting record is located within 0.25 miles of the IC alignment in freshwater marshlands adjacent to the Owens River east of Independence and one 1993 and 2003 nesting record occurs in Cottonwood Marsh along the western margin of Owens Lake 1 mile east of the IC alignment.
Pyrocephalus rubinus	vermilion flycatcher	—/CSC/—	Occurs in cottonwood, willow, mesquite, and other large desert riparian trees within marsh and swamp, riparian forest, riparian scrub, riparian woodland, and wetland communities. Nests in desert riparian habitat adjacent to irrigated fields, irrigation	Unlikely to nest along the IC alignment, suitable nesting or foraging habitat is largely absent along the alignment south of Segment 1.	No CNDDB records for this species along Segment 1. One 1975 CNDDB record is located near the IC alignment near Baker. Three 1947 CNDDB records occur along the Mojave River south of the alignment in Yermo and near Afton Canyon. Nesting vermilion flycatchers have been recorded at China Lake and Ridgecrest in 1992 and 1994.

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Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			ditches, pastures, and other open, mesic areas.		
Toxostoma bendirei	Bendire's thrasher	— / CSC / BLM S	Occurs in desert succulent shrub/Joshua tree communities in Mojave Desert.	Potentially suitable nesting habitat located along the alignment in Joshua tree woodland from Halloran Springs east to the Clark Mountains along Segment 4.	One 1977 CNDDB record occurs south of the IC alignment near Halloran Summit.
Toxostoma crissale	Crissal thrasher	—/CSC/—	Occurs in dense thickets of shrubs or low trees in desert riparian and desert wash habitat and within pinyon juniper woodlands up to 6,000 ft amsl.	Unlikely to nest along the IC alignment, no live records of this species along the IC alignment.	Two 2014 CNDDB records occur near the Ivanpah Substation, however these reports are from an avian mortality survey. All other CNDDB records are located at least 20 miles south of the IC alignment.
Vireo bellii pusillus	least Bell's vireo	FE / CE / —	Occurs as a summer resident of southern California in willow riparian areas below 2,000 feet. Nests are placed along margins of bushes or on twigs projecting into pathways, usually willow, mulefat, and mesquite. Occurs in riparian forest, riparian scrub, and riparian woodland habitat.	Unlikely to nest along the IC alignment. Suitable willow riparian forest nesting habitat absent along the IC alignment, existing riparian forest along alignment is fragmented and disturbed along Segment 1 and absent south of Segment 1. Recent observations of this species along the IC alignment are lacking.	Two 1993 CNDDB records occur near Lone Pine and Olancha, however both are likely extirpated. Additional CNDDB records outside of the IC alignment include a 1978 CNDDB along the Mojave River near Afton Canyon and a CNDDB record in Red Rock Canyon in the El Paso Mountains west of the IC alignment.
Vireo vicinior	gray vireo	— / CSC / BLM S	Occurs in Mojave Desert mountains in pinyon-juniper and pinyon pine woodlands.	Potentially suitable habitat located along the IC alignment in pinyon-juniper woodland in the Clark Mountains above 4,500 feet amsl.	Five CNDDB records between 1937 and 1977 occur at least one mile north of the alignment above 4,500 feet amsl in the Clark Mountains.
Mammals					
Antrozous pallidus	pallid bat	— / CSC / BLM S	Occurs in desert, grassland, shrubland, woodland and forest communities with rocky areas for roosting.	Potentially suitable habitat located along the IC alignment in areas where roosting habitat (abandoned mines, crevices in rocky cliffs and canyons) and CNDDB records overlap near Owens Lake, Independence, west	CNDDB records from 1903 to 2004 exist near Dirty Sock Spring, Owens Lake, Independence, west of Lone Pine, Dunn, and Randsburg. This species is very sensitive to disturbance of roosting sites.

Table 4.4-7: Special-status Wildlife Species Not Observed along the IC Project Alignment 2017-2018

Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
				of Lone Pine, Randsburg, and Dunn.	
Corynorhinus townsendii	Townsend's big-eared bat	— / CSC / BLM S	Roosts in mines or caves in the winter and limestone caves, lava tubes, and human-made structures in the summer. Maternity colonies form between March and June. Foraging occurs near roosting habitat in arid desert scrub and pine forests.	Potentially suitable habitat located along the IC alignment in areas where roosting habitat (abandoned mines, crevices in rocky cliffs and canyons) and CNDDB records overlap near Little Lake; in the Rand Mountains south of Randsburg; near Halloran Summit; and in the Clark Mountains. Potential to occur along the alignment during foraging in Lone Pine.	CNDDB records from 1931 to 2014 for Townsend's big-eared bat are located west-northwest of Inyo Peak, south of Bishop, southeast of Tinemaha Reservoir, near Lone Pine, north of Independence, near the Haiwee Reservoir, near the Rand, El Paso, Soda, Calico, Shadow, Clark and Ivanpah Mountains.
Euderma maculatum	spotted bat	— / CSC / BLM S	Roosting habitat includes rock crevices in cliffs or caves. Forages over open water and along washes, mainly for moths. It occupies a wide variety of habitats from arid deserts and grasslands to mixed conifer forests.	Potentially suitable habitat located along the IC alignment in areas where roosting habitat (abandoned mines, crevices in rocky cliffs and canyons) and CNDDB records overlap south of Owens Lake.	CNDDB records from 1995 to 1997 for spotted bat are present south of Bishop to Owens Lake; one record from China Lake.
Microtus californicus vallicola	Owens Valley vole	— / CSC / BLM S	Occurs in wetlands and lush grassy habitats in the Owens Valley with friable soil for burrowing. It forages on grasses, sedges, and herbs.	Potentially suitable burrowing and foraging habitat along the IC alignment in moist places between the southwestern end of Owens Lake and the north end of the Haiwee Reservoir; other reported locations are approximately 100 years old.	CNDDB records for Owens Valley vole occur north of Bishop outside of the IC alignment and near the alignment: 1912 and 1917 records near Independence, 1921 record west of Lone Pine, 1989 record at southwestern end of Owens Lake, and 2003 CNDDB record 0.7 miles west of the alignment at the north end of Haiwee Reservoir.
Myotis ciliolabrum	western small- footed myotis	—/—/BLM S	Occurs in a wide range of habitats, but mostly in arid wooded and brushy uplands near water. It will seek cover in caves, buildings, mines, and crevices and prefers open stands in forests and woodland. Habitat	Unlikely to occur along the IC alignment, all records east of the alignment in the Inyo Mountains.	Two CNDDB records (1997, 1999) for western small-footed myotis occur east of the alignment in or at the base of the Inyo Mountains.

Table 4.4-7: Special-status Wildlife Species Not Observed along the IC Project Alignment 2017-2018

Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			requirements include fresh drinking water and a wide variety of small flying insects.		
Myotis thysanodes	fringed myotis	—/—/BLM S	Roosting sites consist of primarily abandoned mines, but include tree snags, rock outcrops, and natural caves Forages in desert-scrub to firpine vegetation communities.	Unlikely to occur along the IC alignment, there are no areas along the IC alignment where roosting habitat (abandoned mines, caves, crevices in rocky cliffs and canyons) and CNDDB records overlap.	One CNDDB 2004 record is located along the Mojave River in Afton Canyon on the opposite side of Cave Mountain from the IC alignment
Ovis canadensis sierrae	Sierra Nevada bighorn sheep	FE / CE, FP / —	Occurs only in the Sierra Nevada between Yosemite National Park south to Sequoia National Park. Habitat requirements include steep, open terrain free of competition from other grazing ungulates.	Unlikely to occur along the IC alignment, its range near the alignment is at much higher elevations than the IC alignment.	CNDDB records for Sierra Nevada bighorn sheep all occur in the eastern Sierra Nevada at higher elevations than the IC alignment.
Taxidea taxus	American badger	—/CSC/—	Occurs mostly in open shrub, forest, and herbaceous communities with friable soils; it requires, friable soils, and open, uncultivated ground.	Potentially suitable habitat for the American badger in areas with friable soils located near Randsburg in the upper Fremont Valley, near Hinkley, in washes on the eastern slopes of the Clark Mountains, and in the Ivanpah Valley.	There are no CNDDB records for the American badger in the Owens Valley. A 1970 CNDDB record near Inyokern occurs near the IC alignment along Segment 2. Additional CNDDB records near or on the alignment include Randsburg along Segment 2 (1985), near Hinkley north of Segment 3S (2007), in Wheaton Wash on the eastern slopes of the Clark Mountains 3 miles south of the alignment (2007), and at the Ivanpah Solar Facility (2015).
Vulpes vulpes necator	Sierra Nevada red fox	—/CT/—	The Sierra Nevada red fox uses dense vegetation and rocky areas for cover and den sites, primarily in forests interspersed with meadows or alpine fell-fields.	Unlikely to occur along the IC alignment, species primarily occurs at higher elevations outside of the alignment.	One CNDDB record from the 1920s recorded in the vicinity of Bishop; CNDDB notes that the record was likely from the nearby Sierra Nevada because this species normally occurs at higher elevations.
Xerospermophilus mohavensis	Mohave ground squirrel	— / CT / BLM S	Occurs in relatively flat open terrain in Mojave desert scrub,	Potentially suitable burrow and foraging habitat located in	Observations of Mohave ground squirrel reported by Leitner (2008, 2015) and

Table 4.4-7: Special-status Wildlife Species Not Observed along the IC Project Alignment 2017-2018

Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			alkali scrub, and Joshua tree woodland between 1000 feet to 5,000 feet in the Mojave Desert between Owens Lake and Barstow.	relatively flat open terrain along the IC alignment from the southwestern end of Owens Lake to Kramer Junction (excluding rocky areas) and east to Barstow.	CNDDB (1932-2016) mostly near southwestern Owens Lake south to the northern end of North Haiwee Reservoir; west of South Haiwee Reservoir; between Coso Junction and the Inyokern Substation; and between the Inyokern Substation and the Coolwater Substation, excluding the higher rocky areas in the El Paso and Rand Mountains.
Invertebrates			•		
Bombus crotchii	Crotch bumble bee	— / S1S2 / —	Occurs primarily to the west of the Mojave Desert in open grassland and scrub habitats. Nesting occurs underground. Food plants include Asclepias, Chaenactis, Lupinus, Medicago, Eschscholzia, Eriogonum, Phacelia, and Salvia species	Unlikely to occur along the IC alignment, since the alignment is on the margins of the Crotch bumble bee's range and all records are over 70 years old.	There is one historic undated CNDDB record south of Haiwee Reservoir and one 1953 CNDDB record is located in the Kramer Hills within one mile of the IC alignment.
Bombus morrisoni	Morrison bumble bee	—/S1S2/—	Occurs in open, dry scrub where it nests underground. Found primarily from the Sierra Nevada east to South Dakota. Food plants include Asclepias, Astragalus, Chrysothamnus, Cirsium, Cleome, Ericameria, Helianthus, Melilotus, and Senecio species.	Unlikely to occur along the IC alignment, since all records are over 35 years old.	CNDDB records near Big Pine in 1983, 5 miles north of Big Pine in 1958, and near Lone Pine in 1979; one 1938 record occurs in the Clark Mountains one mile north of the alignment.
Bombus occidentalis	western bumble bee	—/S1/—	Occurs in semi-arid areas near washes or intermittent streams, including valley-foothill and desert riparian, habitat with sandy banks, willows, cottonwoods, and sycamores, especially in the northern half of California. Prefers loose, gravelly areas of streams in drier parts of range from sea	Unlikely to occur along the IC alignment. No observations in the Owens Valley and no observations along the IC alignment. Only one 1978 observation in Kramer Hills south of alignment. Riparian habitat is absent along Segments 2, 3N, 3S, and 4, although washes are present.	One 1978 CNDDB record is located in the Kramer Hills within one mile of the IC alignment.

Table 4.4-7: Special-status Wildlife Species Not Observed along the IC Project Alignment 2017-2018

Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			level to over 6,500 feet amsl. It typically nests underground in abandoned rodent burrows or other cavities. Required plant genera include Cirsium, Cleome, Helianthus, Lupinus, Chrysothamnus, and Melilotus.		
Eremarionta rowelli bakerensis	Baker's desertsnail	—/S1/—	Reported from one location near Baker in the Mojave desert among rocks on limestone slopes.	Unlikely to occur along the IC alignment, only one CNDDB record was collected before 1940 and no other records exist.	One historic CNDDB record is located near the IC alignment at Baker. Empty shells collected in undated early record at base of limestone cliff; these shells used to describe this subspecies, which has not been observed since.
Parnopes borregoensis	Borrego parnopes cuckoo wasp	— / S1S2 / —	Occurs from Inyo, San Bernardino, and San Diego Counties south to Mexico (Baja California).	Unlikely to occur along the IC alignment, species has not been observed along the IC alignment in almost 90 years.	One 1929 CNDDB record is located near Big Pine. Last seen in San Diego County in 1955 near Borrego Springs.
Plebulina emigdionis	San Emigdio blue butterfly	—/S2/—	Occurs in shadscale scrub in desert canyons and near washes at the southern end of the Sierra Nevada, in the San Emigdio Mountains, near Victorville, and near the south end of Owens Lake.	Suitable shadscale scrub habitat between the southwestern end of Owens Lake and the north end of Haiwee Reservoir.	2003 CNDDB record is located 0.5 miles west of the alignment between the south end of Owens Lake and the north end of Haiwee Reservoir.
Pyrgulopsis owensensis	Owens Valley springsnail	—/S2/—	Occurs in small springs and seeps, where snails occur on watercress (Nasturtium officinale) and bits of travertine and stone.  Distribution confined to the east side of the Owens River between Chalfant Valley and Inyo Mountains and slopes east of Tinemaha Reservoir.	Unlikely to occur along the IC alignment; IC alignment located west of Big Pine and west of the Owens River in the area where the nearest known location of Owens Valley springsnail occurs.	One 1987 CNDDB record 2.5 miles east of Big Pine along the Owens River.
Pyrgulopsis wongi	Wong's springsnail	— / S2 / —	Occurs in seeps, headsprings, and upper reaches of springs. The species generally occurs in freshwater springs with	Potentially suitable seeps and springs located along the IC alignment near the Alabama Hills, the southwestern end of	Five CNDDB records of the Wong's springsnail occur along the IC alignment: three near the Alabama Hills near Lone Pine, a 1991 record at Reinhackle Spring,

Table 4.4-7: Special-status Wildlife Species Not Observed along the IC Project Alignment 2017-2018

Scientific Name	Common Name	Regulatory Status (Federal/California/BLM)	Habitat and Distribution	Potential to Occur along IC Project Alignment	Observations or Documentation of Species along IC Project Alignment
			areas of watercress on small bits of travertine and stone.	Owens Lake, and the southern end of Little Lake.	an undated record at the north end at Alabama Gates, and a 1987 record in Lubken Creek south of Diaz Lake; a 1988 record at the southwestern end of Owens Lake; and at the southern end of Little Lake in 2000.
Texella kokoweef	Kokoweef Crystal Cave harvestman	—/S1/—	Endemic to Kokoweef Crystal Cave, it occurs in limestone caves under decaying wood debris that is used for cover, nesting, and hunting prey.	Unlikely to occur along the IC alignment, this species is endemic to Kokoweef Crystal Cave, which occurs south of the IC alignment.	A 1972 CNDDB record is located within Kokoweef Crystal Cave, located near Kokoweef Peak, in the Ivanpah Mountains to the south of the IC alignment.

#### 4.4.3.4.4 Birds

Twelve special-status bird species were observed along the IC Project Alignment during 2017-2018 wildlife surveys. Several of these species were observed in association with rivers, streams, reservoirs, and wetlands, including the California Endangered and Fully Protected bald eagle and the California Threatened bank swallow. Potential bank swallow nesting habitat occurs near three locations in Segment 1 along the Owens River south of the Tinemaha Reservoir, north of Lone Pine, and near the Haiwee Substation. Other CDFW CSC avian species observed near or in association with rivers, streams, reservoirs, and wetlands along the IC Project Alignment include yellow warbler, northern harrier, summer tanager, and yellow-headed blackbird, as well as CDFW Watch List species not included in Table 4.4-6 such as osprey (Pandion haliaetus) and white-faced ibis (Plegadis chihi) that were also observed in these habitats. In all cases, none of these observed species were nesting. Suitable nesting habitat for yellow warbler and summer tanager would include sizable and dense riparian forests with diverse native understories; all such known nesting locations are north of the Tinemaha Reservoir dam, and the IC Project Alignment does not intersect this area. The Owens River crosses the IC Project Alignment south of the Tinemaha Reservoir in three general locations, all of which currently lack sizable stands of dense contiguous riparian forests, but may support scattered trees. Suitable nesting habitat for northern harrier includes solitary trees in small groves along streams or fields, such habitat may be present in discrete areas along the IC Project Alignment. Suitable nesting habitat for the yellow-headed blackbird includes marsh vegetation, but there are no observations or CNDDB records of nesting yellow-headed blackbirds along Segment 1.

Avian species such as the California Endangered gilded flicker are often also associated with woodlands and shrublands near rivers, such as the Colorado River, but the observed individual was flying over scrub vegetation in the Clark Mountains. (CNDDB 2018) Other observed avian species typical of upland grasslands, shrublands, and woodlands include the California Fully Protected bald eagle and golden eagle, California Threatened Swainson's hawk, and CDFW CSC loggerhead shrike, Le Conte's thrasher, and burrowing owl. Although the bald eagle, golden eagle, and Swainson's hawk were observed along the IC Project Alignment, no nests were observed. There is a 2008 nesting record for Swainson's hawk east of the IC Project Alignment and south of Big Pine; two nesting records for golden eagle in 1977 and 1979 south of Little Lake; and one 1990 unsuccessful nesting occurrence west of the Tinemaha Reservoir east of the IC Project Alignment, which passes upslope in that region. However, there is a moderate potential for eagles and the Swainson's hawk to nest in large trees or on nearby cliffs or on structures in limited locations along the IC Project Alignment.

No burrowing owls were observed within the IC Project Alignment during the special-status wildlife surveys; however, two potential burrowing owl burrows were observed during the surveys, one on the south side of Harper Lake along Segment 3N and the other between the Calico Mountains and the Mitchel Range to the west, also on Segment 3N. Neither of the burrows showed sign of recent use (i.e. fresh whitewash, feathers, prey remains, etc.). It is assumed that the burrows were used by burrowing owls as wintering burrows, based on presence of old whitewash and other sign.

The western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) was not observed during wildlife surveys, but marginal potential suitable breeding and foraging habitat occurs along the IC Project Alignment near the Owens River. Suitable nesting habitat for the western yellow-billed cuckoos would include sizable and dense riparian forests with diverse native understories; all such known nesting locations are north of the Tinemaha Reservoir dam, and the IC Project Alignment does not intersect this area. The Owens River crosses the IC Project Alignment south of the Tinemaha Reservoir in three general locations, all of which currently lack sizable stands of dense contiguous riparian forests, but may support

scattered trees. None of these locations are likely to support nesting western yellow-billed cuckoo due to lack of high-quality riparian forests and none have been reported. The proposed critical habitat for the western yellow-billed cuckoo along Segment 1 supports small groves of scattered riparian trees or shrub and herbaceous vegetation where it intersects the IC Project Alignment (Figureset 4.4-7).

Potential nesting and foraging habitat is also present for several avian species that were not observed, including the Bendire's thrasher (*Toxostoma bendirei*), yellow-breasted chat (*Icteria virens*), and other species protected under the MBTA and CFGC 3500 et. seq. (see Figureset 4.4-5).

### 4.4.3.4.5 Mammals

Desert bighorn sheep, a California Fully Protected species, and their tracks were observed along the IC Project Alignment in two locations along Segment 4: the northwestern edge of the Cady Mountains east of Yermo and in the Clark Mountains west of the Ivanpah Substation. Known herds occur in both of these mountain ranges.

No individuals of the California Threatened Mohave ground squirrel were observed during pedestrian surveys, despite the appropriate timing of these surveys. However, the southern portion of Segment 1, the entirety of Segments 2, 3N, and 3S, and the western portion of Segment 4 (corresponding to the IC Project Alignment located between Lone Pine in Segment 1 to Yermo in Segment 4) is located within the historic range of the Mohave ground squirrel (Figureset 4.4-8). Despite the negative findings from the appropriately-timed pedestrian surveys, the presence of this species cannot be ruled out in suitable habitat, such as open scrub in flat areas, or areas of moderate terrain with sandy, alluvial soils (see Appendix G to this PEA for more information on this species).

Other special-status terrestrial wildlife species, such as the CDFW CSC Owens Valley vole (*Microtus californicus vallicola*) and American badger (*Taxidea taxus*) have the potential to occur but were not observed during the surveys. Suitable habitat for the Owens Valley vole is restricted to Segment 1, but the American badger could be present along all segments, although no sign was observed for this species and some sources suggest that the American badger has been extirpated from Inyo County. (NatureServe 2018) In addition, special-status bats—pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), western small-footed myotis (*Myotis ciliolabrum*), Yuma myotis (*Myotis yumanensis*), fringed myotis (*Myotis thysanodes*)—may also occur in the Project area. Potential bat roosting sites in abandoned mines may be present in the Rand and El Paso Mountains in Segment 2, and the Clark Mountains in Segment 4.

Desert kit fox (*Vulpes macrotis*) was observed along Segment 3N, 3S, and 4: in creosote bush scrub east of Kramer Junction and in the Waterman Hills, and in Shadscale Scrub in the Shadow Valley.

### 4.4.3.4.6 Invertebrates

No special-status invertebrates were observed along the IC Project Alignment. Nine species of invertebrates with CDFW State Rankings of S1, S1S2, and S2 have CNDDB records in the region: Crotch's bumblebee (*Bombus crotchii*), Morrison bumblebee (*Bombus morrisoni*), western bumble bee (*Bombus occidentalis*), Borrego Parnopes cuckoo wasp (*Parnopes borregoensis*), San Emigdio blue butterfly (*Plebulina emigdionis*), Kokoweef Crystal Cave harvestman (*Texella kokoweef*), Owens Valley springsnail (*Pyrgulopsis owensensis*), Wong's springsnail (*Pyrgulopsis wongi*), and Baker's desertsnail (*Eremarionta rowelli bakerensis*). Records for most of these species do not overlap the IC Project Alignment, and many records are decades old.

There is one undated historic CNDDB observation of Crotch's bumblebee in the Owens Valley in Segment 1, described as occurring in the general region of the Haiwee Reservoir. No additional observations of this species overlap the IC Project Alignment.

The Morrison bumblebee was reported near Big Pine in 1983, 5 miles north of Big Pine in 1958, and near Lone Pine in 1979 (CNDDB 2018); all of these observations are represented by non-specific circular features that overlap the IC Project Alignment in Segment 1. A 1938 record occurs in the Clark Mountains one mile north of the alignment in Segment 4. No additional observations of this species overlap the IC Project Alignment, and there are no recent observations.

No observations of the western bumblebee are recorded in the Owens Valley along Segment 1. The western bumblebee was reported in the Kramer Hills south of the alignment in 1978, but there are no additional records since that time along the IC Project Alignment.

Dead shells of Baker's springsnail were collected before 1940 near Baker among rocks on limestone slopes; and the type specimen was based on this collection. No living snails have been observed at any time; the circular location overlaps the IC Project Alignment near Baker in Segment 4.

The Borrego parnopes cuckoo wasp was reported in 1929 near Big Pine in Segment 1. No observations of the Borrego parnopes cuckoo wasp were recorded along Segments 2, 3N, 3S, or 4. This species was last recorded in San Diego County in 1955 near Borrego Springs. No additional observations of the species overlap the IC Project Alignment.

The San Emigdio blue butterfly was reported in 2003 between the south end of Owens Lake and the north end of Haiwee Reservoir approximately 0.5 miles west of the IC Project Alignment in Segment 1. No observations of San Emigdio blue butterfly have been recorded along Segments 2, 3N, 3S, or 4.

The Owens Valley springsnail was reported on the east side of the Owens Valley in 1987, 2.5 miles east of Big Pine in Segment 1; no additional CNDDB records have been recorded for this species in any location in the Owens Valley since 1998. No observations of the Owens Valley springsnail have been recorded along Segments 2, 3N, 3S, or 4.

There are four CNDDB records for Wong's springsnail that intersect Segment 1: two near the Alabama Hills near Lone Pine, one undated record at the north end at Alabama Gates and a 1987 record in Lubken Creek south of Diaz Lake; a 1988 record at the southwestern end of Owens Lake; and at the southern end of Little Lake in 2000. No observations of the Wong's springsnail have been recorded along Segments 2, 3N, 3S, or 4.

No observations of the Kokoweef Crystal Cave harvestman were recorded along Segment 1. The Kokoweef Crystal Cave harvestman is an endemic to Kokoweef Crystal Cave in the Ivanpah Mountains south of the IC Project Alignment; it was last recorded in 1972. No observations of this species overlap the alignment.

Only two invertebrate species with CNDDB records for the IC Project Alignment have been observed since 2000, the San Emigdio blue butterfly and the Wong's springsnail. These species may continue to be present, but other invertebrate species are unlikely to be observed along the IC Project Alignment.

Details about observed special-status wildlife species, including habitat requirements, species descriptions, and life history, are provided in Appendix G to this PEA document. In addition, these appendices include discussions and tables summarizing special-status wildlife species that have the

potential to occur along the IC Project Alignment. All CNDDB special-status wildlife species records reported along the IC Project Alignment are presented in Figureset 4.4-5. (CNDDB 2018)

#### 4.4.3.5 Critical Habitat

Under the FESA, the USFWS is required to designate critical habitat for specific geographic area(s) that contains features essential to the survival and recovery of threatened or endangered species (16 U.S.C. § 1533 [a][3]). Designated critical habitat includes occupied and unoccupied sites for feeding, roosting, cover, shelter, breeding and rearing, and movement or migration and must be managed to protect existing environmental resources tied to the survival and recovery of the listed species.

Approximately 1,706 acres of desert tortoise designated critical habitat are present within the IC Project Alignment as depicted in Figureset 4.4-6. Proposed work areas within desert tortoise designated critical habitat totals approximately 518 acres.

Approximately 13 acres of proposed critical habitat for the western yellow-billed cuckoo are present within the IC Project Alignment. Proposed work areas within western yellow-billed cuckoo critical habitat total approximately 4 acres (Figureset 4.4-7).

Three other federally-listed species have designated critical habitat within five miles of the IC Project Alignment, but none of these species are likely to occur along the IC Project Alignment. Designated critical habitat boundaries for the Sierra Nevada yellow-legged frog (*Rana sierrae*) and the Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*) do not overlap the IC Project Alignment for either species, but do occur within five miles of the IC Project Alignment. Both species occur in montane habitats in the Sierra Nevada, and any observations that might occur near the IC Project Alignment would likely be incidental occurrences and non-breeding individuals. Lane Mountain milkvetch (*Astragalus jaegerianus*) occurs northeast of Segment 3N and north of Segment 4 in granitic sands and gravels at a higher elevation than the IC Project Alignment in this area; it has never been reported in any location within 1 mile of the IC Project Alignment, and the IC Project Alignment does not overlap designated critical habitat for the Lane Mountain milkvetch.

#### 4.4.3.6 Wildlife Migration Corridors

Migration corridors that provide habitat connectivity across a broader geographic area are critical to survival and reproduction for many plant and wildlife species. Similar terrain, vegetation types, water courses, mountain tops and ridgelines, and other natural features provide suitable habitat for passage from one area to another for food, water, and reproduction. CEQA Guidelines require disclosure of proposed modifications to wildlife corridors and associated mitigation for significant impacts to this important biological resource.

The IC Project Alignment traverses 358 miles of varied terrain and crosses the Owens River and the Mojave River, as well as many minor drainages and dry washes. Segment 1 extends from north to south, providing potential contiguous habitat for wildlife species utilizing the eastern foothills and drainages of the Sierra Nevada and similarly, the lower western slopes of the White and Inyo mountains to the east. The IC Project Alignment is located in the Pacific Flyway, which links avian breeding and foraging grounds in Alaska with warmer wintering areas to the south in tropical areas in Mexico, Central America, and northern South America. The surrounding mountain ranges serve as a funnel for migratory birds that fly parallel to these ranges within the Owens Valley during migration. Migratory birds often stop at wetlands during migration, such as those along the Owens River and at Little Lake. Many migratory avian species will use the north-south corridor provided by the Owens Valley, rather than moving west to east

or vice versa due to the altitude of the surrounding north-south trending Sierra Nevada, White Mountains, and Inyo Mountains, whereas raptors may utilize updrafts to traverse from one side of a mountain range to the other.

Long stretches of contiguous riparian, wetland, and salt-tolerant vegetation extend along the margins of the Owens River and overlap large portions of Segment 1 between the Tinemaha Reservoir and Haiwee Reservoir, as well as at Little Lake. Upland shrublands and woodlands provide cover and foraging habitat to a range of wildlife species, as supported by a review of Figures 4.4-1 through 4.4-8, which repeatedly indicate a north-south distribution for several natural communities and special-status species along Segment 1. Moreover, the Owens Valley serves as winter habitat for some species that return to highlands in the summer. In addition to special-status species, a diverse array of wildlife utilize the rich habitat diversity in the Owens Valley and surrounding mountains, including but not limited to tule elk (*Cervus elaphus nannodes*) and the Round Valley herd of mule deer (*Odocoileus hemionus*).

The majority of Segments 2, 3N, 3S, and 4 traverse remote desert areas with mostly unimpeded localized wildlife corridors between areas supporting undisturbed desert scrub vegetation along the IC Project Alignment and in surrounding areas. Segments 3N and 3S occur in a large plain where towns, agricultural lands, and solar facilities occasionally punctuate native desert vegetation. The western portion of Segment 4 mostly parallels the Mojave River between Daggett and Baker, providing a west-east to northeast corridor between these areas. The IC Project Alignment also intersects the margins of desert bighorn sheep migration corridors in Segment 4, including herds that occur in the Cady Mountains and Clark Mountains, where desert bighorn sheep or their sign were observed during field surveys. Mountain ranges such as the Clark Mountains provide contiguous habitat linkages with other mountain ranges in the region, such as the Spring Mountains to the northeast in Nevada. Although the Colorado River is more than 40 miles east of the Ivanpah Substation, its proximity, combined with undeveloped desert woodlands, shrublands, and wash vegetation that cover west- and east-facing drainages in this area, provide corridors for species that congregate around this river, such as the gilded flicker.

Portions of Segments 1, 2, and 4 parallel existing highways; these highways may sometimes interfere with localized wildlife migrations between areas supporting undisturbed desert scrub vegetation along the alignment and in surrounding areas.

#### 4.4.3.7 Jurisdictional Waters

Potentially jurisdictional wetlands and non-wetland waters occur throughout the IC Project Alignment. General wetland habitats that occur within Segment 1 and 2 of the IC Project Alignment include emergent freshwater wetlands, scrub-shrub wetlands, and forested/woodland wetlands. Potentially jurisdictional waters found in Segments 3N, 3S, and 4 are generally classified as non-vegetated rivers, streams and washes. Major rivers within the IC Project Alignment include the Owens River and the Mojave River. Major surface waters within Segment 1 include Little Lake and Haiwee Reservoir; there are no major surface waters in Segments 3N, 3S, and 4. Appendix I to this PEA contains the *Wetlands and Other Waters Jurisdictional Delineation Report: Control Haiwee 115 kV Subtransmission Line* and the *Wetlands and Other Waters Jurisdictional Delineation Report: Ivanpah-Coolwater-Kramer-Inyokern 115 kV Subtransmission Line*. These documents include figures illustrating potentially jurisdictional waters and detailed tables of features identified along the IC Project Alignment.

#### 4.4.4 Regulatory Setting

Federal, state, and local regulations were reviewed for applicability to the IC Project.

#### **4.4.4.1** Federal

# 4.4.4.1.1 Endangered Species Act (16 U.S.C. § 1531 et seq.)

The Endangered Species Act of 1973 (ESA) provides for the protection of plant and animal species listed by the federal government as "Endangered" or "Threatened", and "the ecosystems upon which they depend." An "Endangered" species is one that is "in danger of extinction" throughout all or a significant portion of its range. A "Threatened" species is one that is "likely to become endangered" within the foreseeable future.

Pursuant to Section 9 of the ESA, it is unlawful for any person to "take" a federally listed species. "Take," as defined by the ESA, "means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." This can also include the modification of a species' habitat. 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 nonfederal land in knowing violation of state law (16 U.S.C. § 1538(c)).

# 4.4.4.1.2 Migratory Bird Act (16 U.S.C. §§ 703 – 712)

The Migratory Bird Treaty Act of 1918 (MBTA) protects species of native, non-game, migratory birds. Specific provisions in the statute include a federal prohibition, except as allowed under specific conditions, to: "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention ... for the protection of migratory birds ... or any part, nest, or egg of any such bird." (16 U.S.C. § 703)

# 4.4.4.1.3 Bald and Golden Eagle Protection Act (16 U.S.C § 668)

The Bald and Golden Eagle Protection Act of 1940 (BGEPA) provides for the protection of bald and golden eagles. The BGEPA establishes criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The BGEPA defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

#### 4.4.4.1.4 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 Resource Management Plan, which is discussed further below.

# 4.4.4.1.5 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 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.

# 4.4.4.1.6 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 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).

#### 4.4.4.1.7 Clean Water Act of 1972

Enacted in 1972, the federal Clean Water Act of 1972 (CWA; 33 U.S.C. § 1251 et seq.) and subsequent amendments outline the basic protocol for regulating discharges of pollutants to waters of the U.S. It is the primary federal law applicable to water quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. Enforced by the USEPA, it was enacted "... to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA authorizes States to adopt water quality standards and includes programs addressing both point and non-point pollution sources.

The CWA also established the established the National Pollutant Discharge Elimination System (NPDES), and provides the USEPA the authority to implement pollution control programs, such as setting wastewater standards for industry and water quality standards for surface waters (see below for a discussion of the NPDES program). In California, programs and regulatory authority under the CWA have been delegated by USEPA to the State Water Resources Control Board (SWRCB) and its nine RWQCBs.

Under Section 402 of the CWA, a discharge of pollutants to navigable waters is prohibited unless the discharge complies with an NPDES permit. The SWRCB and RWQCBs have also developed numeric and narrative water quality criteria to protect beneficial uses of state waters and waterways. Beneficial uses in the Project Area include water supply, groundwater recharge, aquatic habitat, wildlife habitat, and recreation.

# 4.4.4.1.8 Section 401 – Water Quality Certification

Section 401 of the CWA specifies that, for any activity that may result in a discharge into waters of the U.S., the SWRCB or applicable RWQCB must certify that the discharge will comply with state water

quality standards, including beneficial uses (23 CCR § 3830, et seq). Under California's policy of no net loss of wetlands, the SWRCB and RWQCBs require mitigation for dredge and fill impacts to wetlands and waterways.

Dredge and fill activities in wetlands and waterways that impact waters of the U.S. would require a federal Section 404 permit from the USACE. These permits trigger the requirement to obtain a Section 401 certification, which must be obtained prior to issuance of a Section 404 permit.

# 4.4.4.1.9 Section 404 – Permitting for Dredge and Fill Activities in Wetlands and Waters of the U.S.

The USACE is responsible for issuing permits under CWA Section 404 for placement of fill or dredged material in waters of the U.S. and jurisdictional wetlands. Waters of the U.S. refers to oceans, bays, rivers, streams (including non-perennial streams with a defined bed and bank), lakes, ponds, and seasonal and perennial wetlands.

Project proponents must obtain a permit from the USACE for all discharges of fill or dredged material before proceeding with a proposed activity. The USACE may issue either an individual permit or a general permit. General permits are preauthorized at the regional or national level and are issued to cover activities expected to result in only minimal adverse environmental effects (e.g., LA District Regional General Permit No. 63 for Repair and Protection Activities in Emergency Situations). Nationwide Permits (NWPs) are a type of general permit issued to cover activities that the USACE has determined to have minimal adverse effects, such as routine maintenance (e.g., Nationwide Permit 3) or utility line activities (e.g., Nationwide Permit 12). Each NWP specifies particular conditions that must implemented by the permittee.

#### 4.4.4.2 State

# 4.4.4.2.1 California Fish and Game Code §§ 1600-1617, Lake and Streambed Alteration Program

If a project includes alteration of the bed, banks, or channel of a stream, or the adjacent riparian vegetation, then a Streambed Alteration Agreement (SAA) may be required from CDFW. California Fish and Game Code Sections 1600-1616 regulate activities that could alter the flow, bed, banks, channel, or associated riparian areas of a river, stream, or lake—all considered "waters of the state." The law requires any person, state, or local governmental agency or public utility to notify CDFW before beginning an activity that would substantially modify a river, stream, or lake.

#### 4.4.4.2.2 California Endangered Species Act (CFG Code § 2050-2100)

The California Endangered Species Act (CESA) generally parallels the provisions of the Federal ESA, and states that "all native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, threatened with extinction and those experiencing a significant decline which, if not halted, would lead to a threatened or endangered designation, will be protected or preserved." The CDFW administers the CESA, and has committed itself to work with all interested persons, agencies, and organizations to protect and preserve such special-status resources and their habitats.

Under the CESA, "Endangered" is defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range;" and "Threatened" is defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to

become an endangered species in the foreseeable future in the absence of the special protection and management efforts." "Take" is defined as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" an individual of a species, but the definition does not include "harm" or "harass," as the ESA does.

Consistent with the CESA, CDFW has established lists of endangered, threatened, and candidate species that may or may not also be included on a federal ESA list. Pursuant to CFG Section 2080.1, CESA allows for incidental take permits to otherwise lawful development projects that could result in the take of a state-listed Threatened or Endangered species. The application for an incidental take permit under Section 2080.1(b) has a number of requirements including identification of minimization measures to reduce the potential for take and how take of listed species will be mitigated. CESA emphasizes early consultation to avoid potential impacts on rare, endangered, and threatened species and to develop appropriate mitigation planning to offset project-caused losses of listed species.

# 4.4.4.2.3 Native Plant Protection Act (CFG Code §§ 1900-1913, 2062 and 2067)

The Native Plant Protection Act (NPPA) identifies the types of plant species eligible for state listing. Eligible species include those identified on CNPS RPRs 1A, 1B, and 2 meet the definitions of Sections 1901, Chapter 10 (NPPA) or Sections 2062 and 2067 (CESA) of the CFG Code. RPR definitions are as follows:

1A: Plants presumed to be extinct because they have not been seen or collected in the wild in California for many years. This rank includes plants that are both presumed extinct in California and those that are presumed extirpated in California. A plant is extinct in California if it no longer occurs in or outside of California. A plant that is extirpated from California has been eliminated from California, but may still occur elsewhere in its range.

1B: Plants that are rare throughout their range, with the majority of them endemic to California. Most of the plants of CRPR 1B have declined significantly over the last century.

2: Plants that are rare throughout their range in California, but are common beyond the boundaries of California. CRPR 2 recognizes the importance of protecting the geographic range of widespread species. (CNPS 2010)

Section 1913(b) of the NPPA provides exemptions for public and private utilities to ensure maintenance of utility infrastructure and rights of way.

During CEQA review, public agencies must evaluate and disclose impacts to the 220 plant species protected under CESA and the NPPA, and in most cases must mitigate all significant impacts to these species to a level of less than significance. In addition, during the CEQA process, public agencies must also address plant species that may not be listed under CESA or the NPPA, but that may nevertheless meet the definition of rare or endangered provided in CEQA. CDFW works in collaboration with the California Native Plant Society and with botanical experts throughout the state to maintain an Inventory of Rare and Endangered Plants, and the similar Special Vascular Plants, Bryophytes, and Lichens List. Species on these lists may meet the CEQA definition of rare or endangered. As the trustee agency for the wildlife of California, which includes plants, ecological communities and the habitat upon which they depend, CDFW advises public agencies during the CEQA process to help ensure that the actions they approve do not significantly impact such resources. CDFW often advises that impacts to plant species with a California Rare Plant Rank in the Inventory be disclosed by the lead agency during project review to ensure compliance with CEQA.

### 4.4.4.2.4 California Fish and Game Code §§ 3503, 3503.5, 3513, and 3800

CFG Code Section 3513 furthers the intent of the MBTA by prohibiting any take or possession of birds in California designated by the MBTA as migratory nongame birds, except as allowed by federal rules and regulations promulgated pursuant to the MBTA. In addition, CFG Code Sections 3503, 3503.5, 3511, and 3800 further protect nesting birds and their parts, including passerine birds, raptors, and state "fully protected" birds. These regulations protect almost all native nesting birds, not just special-status status birds.

### 4.4.4.2.5 California Fish and Game Code §§ 3511, 4700, 5050, and 5515

CFG Code Sections 3511, 4700, 5050, and 5515 govern the protection of bird, mammal, reptile, amphibian, and fish species identified as "fully protected." Fully protected animals may not be harmed, taken, or possessed and CDFW may not issue take authorization for fully protected species. The classification of "Fully Protected" was the state's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under the state and/or federal endangered species acts; white-tailed kite, golden eagle, trumpeter swan, northern elephant seal, and ring-tailed cat are the exceptions. The white-tailed kite and the golden eagle are tracked in the CNDDB; the trumpeter swan, northern elephant seal, and ring-tailed cat are not.

# 4.4.4.2.6 California Public Resources Code §§ 4292 and 4293

Section 4292 directs the owner, controller, operator, or maintainer of electrical transmission lines in mountainous land, forest-covered land, brush-covered land, or grass-covered land to maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole; a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such pole or tower; and Section 4293 requires the same to maintain a clearance of 4 feet from any line which is operating at 2,400 or more volts, but less than 72,000 volts.

# 4.4.4.2.7 California Public Utilities Commission, General Order 95, Rule 35, Vegetation Management

Rule 35 mandates that certain vegetation management activities be performed in order to establish necessary and reasonable clearances, and establishes minimum clearances between line conductors and vegetation that under normal conditions shall be maintained. These requirements apply to all overhead electrical supply and communication facilities covered by this General Order, including facilities on lands owned and maintained by California State and local agencies.

# 4.4.4.2.8 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.

#### 4.4.4.3 Local

The California Public Utilities Commission (CPUC) has sole and exclusive state jurisdiction over the siting and design of the IC Project. Pursuant to CPUC General Order 131-D (GO 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 counties' and cities' regulations are not applicable as the counties and cities do not have jurisdiction over the IC Project. Accordingly, the following discussion of local land use regulations is provided for informational purposes only.

# 4.4.4.3.1 Inyo County General Plan

The Conservation and Open Space Element contains the following goals and policies that are relevant to the IC Project:

Goal BIO-1: Maintain and enhance biological diversity and healthy ecosystems throughout the County.

Policy BIO-1.1: Regulatory Compliance. The County shall review development proposals to determine impacts to sensitive natural communities, of both local and regional concern, and special-status species. Appropriate mitigation measures will be incorporated into each project, as necessary.

Policy BIO-1.2: Preservation of Riparian Habitat and Wetlands. Important riparian areas and wetlands, as identified by the County, shall be preserved and protected for biological resource value.

Policy BIO-1.3: Restoration of Biodiversity. Encourage the restoration of degraded biological communities.

Policy BIO-1.4: Limitations for ERA's. The County shall discourage development in Environmental Resource Areas (ERA).

Policy BIO-1.5: Develop Outside of Habitat Areas. Work with regulatory agencies and private developers to direct development into less significant habitat areas. Discourage urban development in areas containing sensitive natural communities or known to contain special-status species.

Goal BIO-1.6: Wildlife Corridors. The County shall work to preserve and protect existing wildlife corridors where appropriate.

Policy BIO-1.7: Noxious Weeds. Avoid activities that will promote the spread of noxious weeds in the County

Policy BIO-1.8: Owens River Restoration. The County will work with the LADWP and regulatory agencies to complete the restoration of habitat values along the historic Owens River channel as mitigation for degradation done with water export activities. This policy shall apply to the portion of the Owens River identified as the Lower Owens River Project.

Goal BIO-2: Provide a balanced approach to resource protection and recreational use of the natural environment.

Policy BIO-2.1: Coordination on Management of Adjacent Lands. Work with other government land management agencies to preserve and protect biological resources while maintaining the ability to utilize and enjoy the natural resources in the County.

### **4.4.4.3.2 Invo County Code**

The Inyo County Code does not contain any biological resources protection-related ordinances relevant to the IC Project.

# 4.4.4.3.3 Kern County General Plan

The Land Use, Open Space, and Conservation Elements contain the following goals and policies that are relevant to the IC Project:

- 1.10.5 Threatened and Endangered Species Policies
- Policy 27. Threatened or endangered plant and wildlife species should be protected in accordance with state and federal laws.
- Policy 28. County should work closely with state and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.
- Policy 29. The County will seek cooperative efforts with local, state, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.
- Policy 32. Riparian areas will be managed in accordance with United States Army Corps of Engineers, and the California Department of Fish and Game rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

# 4.4.4.3.4 Ordinance Code of Kern County

The Ordinance Code of Kern County does not contain any biological resources protection-related ordinances relevant to the IC Project.

# 4.4.4.3.5 County of San Bernardino General Plan

The Conservation Element contains the following goals and policies that are relevant to the IC 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 IC 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 IC 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.

# 4.4.4.3.6 County of San Bernardino Development Code

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 ordinance requires a Tree or Plant Removal Permit to remove the following plants:

- Smoke trees (*Psorothamnus spinosus*) 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.)

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. Note that Section 88.01.030, Exempt Activities, of the County of San Bernardino Development Code states that the provisions of the County's Plant Protection and Management ordinances (Chapter 88.01) shall not apply to the "removal [of regulated trees or plants] by a public utility subject to jurisdiction of the Public Utilities Commission." Section 88.01.030 notes also that "[r]emoval actions shall not authorize the removal of perch trees within an identified American Bald Eagle habitat."

#### 4.4.4.3.7 City of Barstow General Plan

The City of Barstow's Resource Conservation and Open Space Element was reviewed for relevant goals and policies related to biological resources. The Element contains the following goals and policies that are relevant to the IC Project:

GOAL 3: Seek to preserve biological resources within the Planning Area.

POLICY 3 A: Conserve suitable habitat for threatened and endangered species found in the region and facilitate mitigation of impacts where unavoidable.

GOAL 7: Recognize the Planning Areas' unique desert environment through the integration of various natural features and open space areas with development.

POLICY 7 A: Enhance existing circulation corridors that tie outlying development to the community while establishing new linkages and implementing streetscape concepts geared toward creating a unified design theme for the City.

# 4.4.4.3.8 City of Barstow Municipal Code

The City of Barstow Municipal Code does not contain any biological resources protection-related ordinances relevant to the IC Project.

# 4.4.5 Significance Criteria

The significant criteria for assessing the impacts to biological resources come from the California Environmental Quality Act (CEQA) Environmental Checklist. According to the CEQA Checklist, a project causes a potentially significant impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species
  identified as a candidate, sensitive, or special-status in local or regional plans, policies, or
  regulations, or by the California Department of Fish and Wildlife (CDFW) or United States Fish
  and Wildlife Service (USFWS)
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS
- Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Planning (NCCP), or other approved local, regional, or state habitat conservation plan.

# 4.4.6 Impact Analysis

4.4.6.1 Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

#### **4.4.6.1.1 Construction**

Less than Significant Impact with Mitigation. Potential impacts on sensitive plant and wildlife species may include temporary loss of habitat associated with ground-disturbing activities and may also include other direct and indirect impacts.

The following subsections summarize the impact analyses for special-status plant and wildlife species and critical habitat. SCE would implement Applicant Proposed Measures (APMs) that would reduce impacts to special-status species. Details on APMs are provided in Section 4.4.7.

**Special-status Plant Species.** A total of 25 special-status plant species were observed along the IC Project Alignment. Of these, 21 species were observed in work areas associated with the IC Project (see Table 4.4-4 and Figureset 4.4-2). No listed plant species, other than Owens Valley checkerbloom, is likely to occur along the IC Project Alignment, and the Owens Valley checkerbloom was not observed in IC Project work areas.

Construction activities, including grading, vegetation clearing and grubbing, earth-moving, and vehicle traffic may result in the direct crushing or burial of individual plants, and may cause erosion and/or sedimentation that may alter the existing habitat for these species. Construction-related traffic may create dust that adheres to leaves and interferes with photosynthesis and plant reproduction. Topsoil impacted from grading contains seeds, bulbs, nutrients, and mycorrhizae that special-status plant species may utilize for survival and for maintaining sustainable colonies in an area. Incidental introductions of invasive non-native weeds as a result of construction activities have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites. Higher non-native plant cover, especially invasive grasses, may also facilitate fires in the area.

The majority (88 percent) of the observed sensitive plant species are annuals or herbaceous perennials that pass the dry season as seeds or as dormant plants with no above-ground green foliage and underground storage organs. Soil-disturbance activities may disturb existing seed bank of special-status and other native plants, along with bulbs, corms, rhizomes, and other soil storage organs. To avoid and minimize potential impacts to special-status herbaceous plants, individuals and colonies of these species would be flagged and avoided, when feasible and APM BIO-BOT-01: Special-status Herbaceous Plants would be implemented. To avoid and minimize potential impacts to special-status plant species from construction activities such as native vegetation clearing and grubbing, grading, and earth-moving, SCE would implement APM BIO-GEN-1: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of areas supporting native vegetation and special-status native species for avoidance, when feasible. SCE would also implement APM WEAP: Worker's Environmental Awareness Training (WEAP), to ensure contractor understanding and implementation of these protective measures. SCE would also implement APM BIO-BOT-01: Special-status Herbaceous Plants and APM BIO-BOT-02: Special-status Tree/Shrubs/Cactus, which contain measures such as pre-construction surveys, flagging and marking for avoidance, and construction scheduling to avoid or minimize potential impacts to special-status herbaceous species, shrubs, trees, and cacti. To reduce competition from noxious and invasive weeds, which may crowd out special-status sensitive species, SCE would develop and implement an Integrated Weed Management Plan as described in APM BIO-RES-2: Develop Integrated Weed Management Plan. If populations or individuals of special-status plants cannot be avoided, SCE would implement restoration activities as described in APM BIO-RES-1: Develop Habitat Restoration Management Plan (HRMP). The HRMP would include provisions to restore special-status species removed during IC Project construction activities, along with suitable habitat for the species. With the implementation of these APMs, impacts to special-status plants would be less than significant.

**Special-status Wildlife Species.** A total of 15 special-status wildlife species were observed along the IC Project Alignment, and thus have the potential to occur in IC Project construction work areas (see Table 4.4-6 and Figureset 4.4-4). In addition, the Mohave ground squirrel is presumed to be present within its historic range in areas (Figureset 4.4-8).

Potential impacts on special status wildlife species could occur during grading, vegetation clearing and grubbing, and earth-moving, and vehicle traffic may result in the direct crushing or burial of ground-dwelling wildlife and their burrows and habitat. Increased noise, artificial light, and increased human

presence may restrict individuals from accessing foraging areas or may alter site conditions and reduce the overall quality of habitat available.

*Fish.* Owens pupfish, Owens tui chub, Owens sucker, and Owens speckled dace have historic ranges in the Owens River and its tributaries and associated drainages, canals, streams, and hot springs that occur along the IC Project Alignment in Segment 1 between Cartago and Bishop, based on CNDDB (2018) and PISCES. (Santos et al. 2014) However, populations of these fish are considered extirpated, and the likelihood of their occurrence in IC Project construction work areas is low to none. Further, no in-water work is included in the IC Project, with the exception of removal of existing structures in Little Lake. Therefore, no impacts to special-status fish are anticipated.

*Amphibians.* No special-status amphibian species were observed during the special-status wildlife surveys. One special-status amphibian species (northern leopard frog) has the potential to occur along the IC Project Alignment in Segment 1, primarily in freshwater marsh and areas of flowing or standing water and adjacent moist upland areas in the northern Owens Valley and its tributaries, and at Baker Creek west of Big Pine in Segment 1. (CNDDB 2018)

In these areas, potential impacts to the northern leopard frog are likely to be negligible because IC Project construction work sites in these areas are generally in upland areas that are not suitable habitat for the northern leopard frog. If present, potential impacts to the northern leopard frog could result from vehicle or equipment strikes, from individuals falling into excavation areas, and accidental sedimentation of aquatic habitat. Where IC Project construction work areas are located in or proximate to suitable habitat for northern leopard frog, SCE would implement APM BIO-HERP-9: Northern Leopard Frog, including the performance of pre-construction surveys and construction monitoring to identify and avoid impacts.

To avoid potential impacts to other special-status amphibian species, SCE would implement the following APMs: BIO-GEN-:1 Pre-Construction Biological Clearance Survey and Monitoring; WEAP: Worker's Environmental Awareness Training (WEAP); and BIO-HERP-9: Northern Leopard Frog. These APMs contain measures, including pre-construction surveys, construction monitoring, spill prevention, vehicle travel, and disease prevention measures, to protect sensitive amphibians. With the implementation of these avoidance measures and APMs, impacts to special-status amphibians would be less than significant.

**Reptiles.** Live desert tortoise individuals were observed along the IC Project Alignment in Segments 3N, 3S, and 4; the highest concentration of observations were made in Segments 3N and 3S between Kramer Junction and Barstow, often in Mojave desert scrub vegetation in areas with extensive annual wildflower blooms that serve as a food source (Figures 4.4-4 and 4.4-6). Desert tortoise sign was observed in Segments 1 and 2, as well as in Segments 3N, 3S, and 4. Designated critical habitat for desert tortoise occurs within Segments 2, 3N, 3S, and 4 and is shown in Figureset 4.4-6

Although not observed, Mohave fringe-toed lizard and banded Gila monster have the potential to occur along the IC Project Alignment in specific habitats (Figureset 4.4-5). Mojave fringe-toed lizard occurs in sandy washes or in sparse arid scrub growing on sandy substrates, and has been reported from the Proposed Project region (Harper Lake area in Segment 3N; along the Mojave River in Segments 3N, 3S, and 4; between Barstow and Baker in Segment 4). Banded Gila monster has been reported in the Clark Mountains in California in the general vicinity of Segment 4 (Figureset 4.4-5).

Potential impacts to special-status reptile species may result from ground disturbing activities that can include vehicle or equipment strikes, individuals falling into excavation areas, and by the reduction of refugia habitats as well as accidental crushing or burying of active burrows by construction vehicles and activities. Ground-disturbing activities have the potential to increase colonization of weed species and

reduce native vegetation. Incidental introductions of invasive non-native weeds have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites of prime forage species. Human activities and food waste may also pose threats to special-status reptile species by attracting opportunistic predators such as ravens, coyotes and feral dogs to IC Project work areas. And the watering of access roads and construction work areas for dust mitigation can result in ponding, attracting reptiles into these areas where they may be more susceptible to direct impacts.

Potential impacts to sensitive reptile species during IC Project construction would be temporary and intermittent in nature (lasting only as long as construction work at a given site) and would be limited in their potential geographic scope.

To avoid and minimize potential impacts to desert tortoise from IC Project construction activities such as native vegetation clearing and grubbing, grading, and earth-moving, SCE would implement APM BIO-GEN-1: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of areas supporting native vegetation and special-status reptiles for avoidance, when feasible. SCE would also implement APM WEAP: Worker's Environmental Awareness Training (WEAP), to ensure contractor understanding and implementation of these protective measures. Further, SCE would implement APM BIO-HERP-1: Desert Tortoise, which includes specific measures to avoid and minimize impacts to desert tortoise, including pre-construction surveys, construction monitoring, flagging all burrows and desert tortoise sign, agency interactions, approval process for burrow excavation, under vehicle checks, trash disposal, vehicle travel, trapped animal prevention, and other measures.

Potential indirect impacts would be addressed through implementation of APM BIO-RES-1: Develop Habitat Restoration Management Plan (HRMP) and APM BIO-RES-2: Develop Integrated Weed Management Plan. The Plan would reduce weed competition with important forage plant species, thus reducing indirect impacts related to reduction in forage. Impacts to native habitats would be mitigated through restoration, compensatory mitigation or a combination of both as will be described in the HRMP. Such restoration would restore desert tortoise habitat, reducing impacts to this species.

The measures outlined in these APMs would also serve to avoid and minimize potential impacts to Mohave fringe-toed lizard and banded Gila monster. With the implementation of these avoidance measures and APMs, impacts to special-status reptiles would be less than significant.

*Birds.* Twelve special-status bird species were observed along the IC Project Alignment during 2017-2018 wildlife surveys. Several of these species were observed in association with rivers, streams, reservoirs, and wetlands, including the California Endangered and Fully Protected bald eagle and the California Threatened bank swallow. Other CDFW CSC avian species observed near or in association with rivers, streams, reservoirs, and wetlands along the IC Project Alignment include yellow warbler, northern harrier, summer tanager, and yellow-headed blackbird. Avian species such as the California Endangered gilded flicker are often associated with woodlands and shrublands near rivers, such as the Colorado River, but the observed individual was flying over scrub vegetation in the Clark Mountains. (CNDDB 2018)

Although the bald eagle, golden eagle, and Swainson's hawk were observed along the IC Project Alignment, no nests were observed. There is a potential for eagles to nest on nearby cliffs or on structures along the alignment. The Swainson's hawk often nests in a solitary tree in small groves along streams or fields, and suitable habitat occurs along Segment 1 in several locations; much of the riparian vegetation along the Owens River where it overlaps the IC Project Alignment has been disturbed or removed,

reducing habitat quality for most special-status avian species. Potential nesting habitat was observed for the bank swallow in one location on cliffs near the Haiwee Substation.

The yellow warbler, yellow-headed blackbird, summer tanager, and northern harrier occur near or along rivers, streams, reservoirs, and wetlands. The single observation of yellow warbler along Segment 4 in Halloran Wash coincided with the spring migration of this species from wintering grounds in central and south America to breeding grounds in the continental United States and Canada. Based on the absence of suitable nesting habitat such as willow thickets or other riparian or wetland vegetation nearby, it is assumed the observed yellow warbler individual was migrating through the Project area. A small flock of yellow-headed blackbirds was observed perching on a chicken coop and flying around a residential property at the south end of the South Haiwee Reservoir in Segment 1. No yellow-headed blackbird nests were observed at the time of the surveys, and no CNDDB occurrences are present along the IC Project Alignment, but suitable nesting habitat such as Cattail Marsh, American Bulrush Marsh, and Hardstem Bulrush Marsh is present along Segment 1, although much of it is disturbed. A single summer tanager was observed vocalizing at the Control Substation in planted trees, and there is suitable cottonwoodwillow riparian habitat immediately adjacent to where this summer tanager was observed. No nesting individuals were observed or expected, and high-quality habitat consisting of large, undisturbed, mature riparian forest is mostly lacking along the IC Project Alignment. Northern harriers inhabit marsh, grassland, meadow, and riparian habitats, and one northern harrier was observed foraging at the southern end of Owens Lake near the town of Olancha, California. No nests for this species were observed during surveys, but there are CNDDB records along Segment 1 for this species, with suitable nesting habitat in undisturbed wetlands, grasslands, and pastureland vegetation. Dense undisturbed riparian and/or marsh habitat preferred for nesting by most of these species is largely absent, although scattered trees and marsh vegetation is present in a few locations where Segment 1 overlaps the Owens River and its tributaries.

The gilded flicker is often associated with woodlands and shrublands near rivers in the desert southwest, such as the Colorado River, but the solitary observed individual was flying over scrub vegetation in the Clark Mountains in Segment 4 and is unlikely to nest in this area. No observations of this species are reported along the IC Project Alignment west of the Clark Mountains.

Other observed avian species typical of upland grasslands, shrublands, and woodlands include the loggerhead shrike, Le Conte's thrasher, and burrowing owl. The loggerhead shrike occurs along the IC Project Alignment outside of heavily urbanized areas where there are sufficient shrubs, trees, posts, or other perches. The Le Conte's thrasher occurs in a variety of woody desert vegetation, especially broad desert washes, playas, and large areas dominated by various species of saltbush and cholla (Cylindropuntia) and was observed in only one location on Segment 4 on the west-facing slope of the Clark Mountains. No burrowing owls were observed along the IC Project Alignment during the special-status wildlife surveys; however, two potential burrowing owl burrows were observed, both on Segment 3N. Neither of the burrows showed sign of recent use, and it is assumed that the burrows were used by burrowing owls as wintering burrows.

The western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) was not observed during wildlife surveys, but marginal suitable breeding and foraging habitat occurs along the IC Project Alignment near the Owens River. None of the locations where the Owens River and Segment 1 overlap provide suitable high-quality riparian forest nesting habitat for the western yellow-billed cuckoo and no nesting birds have been reported along the IC Project Alignment (Figureset 4.4-5). Proposed critical habitat for the western yellow-billed cuckoo supports small groves of scattered riparian trees or shrub and herbaceous vegetation where it intersects the IC Project Alignment, with no dense riparian forests favored by this species (Figureset 4.4-7).

No burrowing owls were observed along the IC Project Alignment during the special-status wildlife surveys; however, two potential burrowing owl burrows were observed, both on Segment 3N. Neither of the burrows showed sign of recent use, and it is assumed that the burrows were used by burrowing owls as wintering burrows. Potential nesting and foraging habitat is also present for several avian species that were not observed, including the Bendire's thrasher, yellow-breasted chat, and other species protected under the MBTA and CFGC 3503.5.

IC Project construction work activities may potentially impact special-status birds, their nests, and foraging habitats, but no nests of listed avian species were observed during the 2017-2018 surveys. Potential impacts to special-status bird species may result from vegetation clearing and ground disturbance within nesting habitat, as well as accidental crushing or burying of ground nests or active burrows by construction vehicles. An increase in vehicle traffic and human presence could result in an interruption of normal bird nesting behaviors or nest abandonment. IC Project construction work activities may potentially impact the quality of foraging habitat for raptors, passerines, and other special-status bird species that use habitats within the IC Project area.

Potential impacts to nesting and sensitive bird species during construction would be temporary and intermittent in nature (lasting only as long as construction work at a given site) and would be limited in their potential geographic scope.

SCE complies with the MBTA and CFGC 3503.5. To ensure compliance and to avoid and minimize potential impacts to special-status avian species from construction activities such as native vegetation clearing and grubbing, grading, and earth-moving, SCE would implement APM BIO-GEN-1: Preconstruction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of areas supporting native vegetation and special-status bird habitat for avoidance, when feasible, as well as APM WEAP: Worker's Environmental Awareness Training (WEAP), to ensure contractor understanding and implementation of these protective measures. SCE would also develop a Nesting Bird Management Plan per APM BIO-AVI-1; the survey, avoidance, and adaptive management measures in the Plan would reduce impacts to nesting birds along the IC Project Alignment. Avoidance and minimization measures for potential impacts to listed birds in riparian areas are outlined in APM BIO-AVI-3: Yellow-billed cuckoo. Avoidance and minimization measures for the golden eagle are specifically outlined in APM BIO-AVI-4: Golden Eagles, including survey and nest buffer requirements. Avoidance and minimization measures for the burrowing owl are provided in APM BIO-AVI-2: Burrowing Owl. In addition, mitigation strategies such as restoration of suitable avian habitat are addressed in APM BIO-RES-1: Develop Habitat Restoration Management Plan (HRMP), and reduction of weed competition with important plant species in APM BIO-RES-2: Develop Integrated Weed Management Plan.

With the implementation of these avoidance measures and APMs, impacts to special-status birds would be less than significant.

*Mammals.* Desert bighorn sheep and their sign were observed along the IC Project Alignment in two locations along Segment 4, in the Cady Mountains and the Clark Mountains. Known herds occur in both of these mountain ranges.

No individuals of the Mohave ground squirrel were observed during pedestrian surveys, but the historic range for this species includes the southern portion of Segment 1, the entirety of Segments 2, 3N, and 3S, and the western portion of Segment 4 (Figuresets 4.4-5 and 4.4-8). The presence of this species cannot be ruled out in high-quality habitat, such as open scrub in flat areas, or areas of moderate terrain with sandy, alluvial soils.

Suitable habitat for the Owens Valley vole—groundwater dependent marshes—is restricted to Segment 1. Suitable habitat for the American badger could be present along all Segments, although no sign was observed for this species. In addition, special-status bats may also occur along the IC Project Alignment. No potential roosting habitat for bats was observed during surveys, and none would be directly impacted by work activities. Minimal suitable bat foraging habitat is located along the IC Project Alignment, and the area of suitable foraging habitat that would be disturbed during construction of the IC Project is negligible in comparison to the available habitat in the surrounding area.

Potential impacts to special-status mammal species may result from ground disturbing activities that can include vehicle or equipment strikes, individuals falling into excavation areas, and by the reduction of refugia habitats as well as accidental crushing or burying of active burrows by construction vehicles and activities. Bighorn sheep require habitat connectivity within their home range to move uninhibited to foraging areas and water sources, and construction activities may interfere with their seasonal movement. Increased human presence within habitat, and construction during migratory periods could result in disruption of migratory behaviors of bighorn sheep. Ground-disturbing activities have the potential to increase colonization of weed species and reduce native vegetation. Incidental introductions of invasive non-native weeds have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites of prime forage species.

Potential impacts to sensitive mammal species during construction of the IC Project would be temporary and intermittent in nature (lasting only as long as construction work at a given site) and would be limited in their potential geographic scope.

To generally avoid and minimize potential impacts to special-status mammal species during construction, SCE would implement APM BIO-GEN-1: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of areas supporting native vegetation and special-status mammal burrows, watering holes, and other habitat for avoidance, when feasible, as well as APM WEAP: Worker's Environmental Awareness Training (WEAP), to ensure contractor understanding and implementation of these protective measures. In addition, mitigation strategies such as restoration of native habitat and forage species—which would reduce indirect impacts by restoring native habitat and reducing weed competition with important habitat and forage plant species upon which mammalian species rely—are addressed in APM BIO-RES-1: Develop Habitat Restoration Management Plan (HRMP) and APM BIO-RES-2: Develop Integrated Weed Management Plan. Implementation of these APMs would serve to reduce direct and indirect impacts to all mammals.

To minimize impacts to desert bighorn sheep, SCE would implement measures contained in APM BIO-MAM-5 Bighorn Sheep (Nelson's/Desert). These measures are designed to avoid and minimize impacts to desert bighorn sheep, including performing pre-construction surveys to identify the presence of desert bighorn sheep, monitoring for sheep during construction, seasonal restrictions on work in certain areas, proscribing helicopter use and travel routes, and other measures.

The implementation of the APMs described to reduce impacts to desert tortoise would also be applied to potential Mohave ground squirrel habitat, and thus would service to reduce impacts to the Mohave ground squirrel as well as to the desert tortoise. In addition to these desert tortoise-specific APMs, SCE would implement APM BIO-MAM-1: Mohave Ground Squirrel, which includes avoidance and impact minimization measures as well as trapped animal prevention and cover materials.

To avoid and minimize potential impacts to bat species, SCE would implement APM BIO-MAM-6: Bats, Common and Sensitive Species. This APM would be implemented in areas where special-status bats are identified.

Implementation of APM WET-1 would ensure minimization of impacts to wetlands and riparian areas, and thus would serve to reduce potential direct and indirect impacts to Owens Valley vole.

With the implementation of these avoidance measures and APMs, impacts to special-status mammals would be less than significant.

### **4.4.6.1.2 Operations**

Less than Significant Impact. As presented in Chapter 3, SCE is currently performing operation and maintenance (O&M) activities, including inspections, along the subtransmission lines that would be rebuilt under the IC Project. In Segments 3N, 3S, and 4, no material changes in O&M activities or the locations of these activities are anticipated with implementation of the IC Project; O&M activities performed along the re-aligned structures in Segments 1 and 2 would be performed in areas previously-disturbed during construction and assessed above. To avoid impacts to birds from potential line strikes, all subtransmission facilities for the project would be designed to be avian-safe, following the intent of Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006. (APLIC 2006) Further, all subtransmission facilities would be evaluated for potential collision risk and, where determined to be high risk, lines would be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012. (APLIC 2012) Impacts to sensitive species are not anticipated to occur due to O&M, and with implementation of these APLIC measures, less than significant impacts would be realized under this criterion during operations and maintenance.

# 4.4.6.2 Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

### **4.4.6.2.1** Construction

**Less Than Significant Impact with Mitigation.** Fifty-nine vegetation alliances and 48 associations were observed along the IC Project Alignment, including 31 sensitive natural communities that occur in IC Project work areas. Anticipated impacts to sensitive vegetation as a result of construction activities total approximately 254 acres as shown in Table 4.4-8.

**Table 4.4-8: Potential Impacts to Sensitive Natural Communities** 

Vegetation Alliance	Vegetation Association (if present)	Total Acres Mapped on IC	IC Project Work	California State Rarity Ranking
Woodland Vegetation	(II present)	11 Toject Angilillent	Aleas (acres)	Kanking
Fremont cottonwood forest	Populus fremontii Woodland Alliance	9	5.3	S3.2
Joshua tree woodland	Yucca brevifolia Woodland Alliance	27.7	15.4	S3.2
	Yucca brevifolia / Coleogyne ramosissima Association	56.1	0	S3.2
	Yucca brevifolia / Larrea tridentata - Ambrosia dumosa Association	94.2	8.9	S3.2
	Yucca brevifolia / Larrea tridentata - Yucca schidigera Association	70.2	5.3 15.4 0	S3.2
	Yucca brevifolia / Larrea tridentata / Pleuraphis rigida Association	4.8		S3.2
Shining willow groves	Salix lucida Woodland Alliance	0.7	0.2	S3.2
Utah juniper woodland	Juniperus osteosperma / Coleogyne ramosissima Association	12.8	0	S3.2
Black willow thickets	Salix gooddingii Woodland Alliance	3.1	0.1	S3

**Table 4.4-8: Potential Impacts to Sensitive Natural Communities** 

Vegetation Alliance	Vegetation Association (if present)	Total Acres Mapped on IC Project Alignment	Area Mapped within Anticipated IC Project Work Areas (acres) <sup>1</sup>	California State Rarity Ranking
Desert-willow - smoketree	Chilopsis linearis Association	1.7	0	S3
wash woodland	Chilopsis linearis / Ambrosia salsola Association	1.5	0.6	S3
Mesquite thickets	Prosopis glandulosa var. torreyana Alliance	7.1	0.9	S3
Red willow thickets	Salix laevigata Woodland Alliance	2.6	1.7	S3
Singleleaf pinyon - Utah juniper woodlands	Pinus monophylla - Juniperus osteosperma / Coleogyne ramosissima Association	10.2	0	Yes <sup>2</sup>
Total Acres Woodland Vegetat	ion	301.7	43.9	
Shrubland Vegetation				
Water birch thicket	Betula occidentalis Shrubland Alliance	0.2	0.1	S2.2
Smokebush desert wash scrub <sup>3</sup>	Psorothamnus polydenius Provisional Association	44.5	31.1	S2
Basket bush - river hawthorn - desert olive patches	Forestiera pubescens Provisional Association	0.2	0.2	S3.2
	Prunus fasciculata - Salazaria mexicana Association	0.9	0	S3.3
Desert almond - Mexican	Prunus fasciculata Association	4.3	0.5	S3.3
bladdersage scrub	Salazaria mexicana Association	0.8	0	S3.3
	Salvia dorrii Wash Association	7.5	0.8	S3.3
Acton's and Virgin River brittle brush - net-veined goldeneye scrub	Encelia actoni Association	3.5	1.1	S3
Bitter brush scrub	Purshia tridentata Shrubland Alliance	2.0	0.8	S3
Bush seepweed scrub	Suaeda nigra [moquinii] Shrubland Alliance	1.5	0	S3
Parry's saltbush scrub	Atriplex parryi Shrubland Alliance	0.5	0	S3
Scalebroom scrub	Lepidospartum squamatum Shrubland Alliance	6.4	0	S3
Spiny menodora scrub	Menodora spinescens Shrubland Alliance	3.7	0.8	S3
Winterfat scrubland	Krascheninnikovia lanata Shrubland Alliance	4.6	0.9	S3
Fourwing saltbush scrub	Atriplex canescens / herbaceous Association	1.9	0.5	Yes <sup>2</sup>
Nevada joint fir - Anderson's boxthorn - spiny hop-sage scrub	Ephedra nevadensis – Ericameria teretifolia Provisional Association	14.4	7.7	S3 <sup>2</sup>
Cooper's Goldenbush Provisional Scrub <sup>3</sup>	Ericameria cooperi Provisional Shrubland Association	12.9	6.5	S4
Quailbush scrub	Atriplex torreyi Provisional Association	116.5	45	Yes <sup>2</sup>
Creosote bush scrub	Larrea tridentata / Pleuraphis rigida Association	22.5	0	Yes <sup>2</sup>
Creosote bush – white bursage scrub	Larrea tridentata - Ambrosia dumosa / Pleuraphis rigida Association	18.3	0	Yes <sup>2</sup>
Total Acres Shrubland Vegeta		267.1	96.0	
Herbaceous		1 ***=	1	ı
Alkali sacaton grassland	Sporobolus airoides Herbaceous Alliance	38.1	16.2	S2.2
Big galleta shrub-steppe	Pleuraphis rigida/Atriplex canescens Association	2.6	0.6	S2.2
Yerba mansa - Nuttall's sunflower - Nevada goldenrod	Anemopsis californica Provisional Association	3.3	1.6	S2
alkaline wet meadows	Anemopsis californica – Juncus arcticus var. mexicanus Association	0.9	0.7	S2

**Table 4.4-8: Potential Impacts to Sensitive Natural Communities** 

Vegetation Alliance	Vegetation Association (if present)	Total Acres Mapped on IC Project Alignment	Area Mapped within Anticipated IC Project Work Areas (acres) <sup>1</sup>	California State Rarity Ranking
American bulrush marsh	Schoenoplectus americanus Herbaceous Alliance	0.1	0.1	S3.2
Mojave-Sonoran desert dunes	Dicoria canescens – Abronia villosa - Panicum urvilleanum Sparsely Vegetated Alliance	0.9	0	S3.2
Brittle Spineflower - Field Suncup Provisional Desert Pavement Sparsely Vegetated Alliance <sup>3</sup>	Chorizanthe brevicornu – Camissonia campestris Provisional Desert Pavement Herbaceous Stands	2.1	0	S3
Wire Lettuce - Brittle Spineflower Lava Flows <sup>3</sup>	Stephanomeria pauciflora – Chorizanthe brevicornu Provisional Herbaceous Alliance	8.1	5.9	S3
Total Acres Sensitive Herbaceous Vegetation Total Acres Sensitive Native Vegetation		56.1 624.9	25.1 165.0	

### Notes:

- 1 As of December, 2019
- 2 Alliance is not sensitive but the association is sensitive on the 2018 CDFW Sensitive Natural Communities list
- 3 Provisional alliance or association currently under review by CDFW

Impacts to sensitive natural communities are anticipated to result from construction of the IC Project. These impacts would result from rehabilitating/upgrading existing access roads to meet current construction and O&M standards and from the installation of replacement structures.

Construction activities, including grading, vegetation clearing and grubbing, earth-moving, upgrading of existing access road, establishment of pulls sites and laydown areas, and vehicle traffic may result in the direct crushing or burial of individual plants, along with erosion and/or sedimentation that may alter the existing habitat. Construction-related traffic may create dust that adheres to leaves and interferes with photosynthesis and plant reproduction. Topsoil impacted from grading contains seeds, bulbs, nutrients, and mycorrhizae that plant species may utilize for survival and for maintaining sustainable colonies in an area. Incidental introductions of invasive non-native weeds as a result of construction activities have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites. Higher non-native plant cover, especially invasive grasses, may also facilitate fires in the area.

To avoid and minimize potential impacts to special-status natural communities from construction activities such as native vegetation clearing and grubbing, grading, and earth-moving, SCE would implement APM BIO-GEN-1: Pre-construction Biological Clearance Survey and Monitoring, which includes pre-construction biological surveys and flagging boundaries of areas supporting native vegetation and sensitive natural communities for avoidance, when feasible, as well as APM WEAP: Worker's Environmental Awareness Training (WEAP), to ensure contractor understanding and implementation of these protective measures. SCE would also implement two measures that focus on avoiding and minimizing potential impacts to special-status herbaceous species, shrubs, trees, and cacti, which may be important components of natural communities in project work areas: APM BIO-BOT-01: Special-status Herbaceous Plants and APM BIO-BOT-02: Special-status Tree/Shrubs/Cactus. In addition, mitigation strategies such as special-status plant species restoration are addressed in APM BIO-RES-1: Develop Habitat Restoration Management Plan (HRMP) and reduction of weed competition with special-status plant species in APM BIO-RES-2: Develop Integrated Weed Management Plan.

With the implementation of these APMs, impacts to sensitive natural communities would be less than significant.

### **4.4.6.2.2 Operations**

**No Impact.** As presented in Chapter 3, SCE is currently performing operation and maintenance (O&M) activities, including inspections, along the subtransmission lines that would be rebuilt and reconductored under the IC Project. In Segments 3N, 3S, and 4, no material changes in O&M activities or the locations of these activities are anticipated with implementation of the IC Project; O&M activities performed along the re-aligned structures in Segments 1 and 2 would be performed in areas previously-disturbed during construction and assessed above. Modifications of or impacts to sensitive natural communities are not anticipated to occur due to O&M activities, and therefore no impacts would be realized under this criterion during operations and maintenance.

4.4.6.3 Would the project have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means?

### **4.4.6.3.1** Construction

**Less Than Significant Impact with Mitigation.** During the initial design of the IC Project, SCE has sited structures and located and oriented construction work areas to avoid overlaps with identified jurisdictional waters and wetlands to the extent feasible.

However, construction of the IC Project would result in temporary and permanent impacts on jurisdictional wetlands and waters. Temporary impacts would occur during the removal of existing subtransmission structures that are located in jurisdictional wetlands and waters, during installation of replacement structures (if such features cannot be avoided), and during the establishment of temporary construction areas such as pulling and tensioning sites. Permanent impacts to jurisdictional wetlands and waters would be realized from the rehabilitation/upgrading of existing access and spur roads that are routed through jurisdictional waters (which may include widening the existing access and spur roads to meet SCE's access road standards for construction), and from the unavoidable installation of replacement subtransmission structures in wetlands and waters.

The majority of jurisdictional features potentially impacted due to project activities include sandy ephemeral stream beds and washes. Activities that may occur within these jurisdictional features, including driving, parking, or placement of crane outriggers, may result in impacts such as rutting; however, these impacts are considered temporary due to the nature of the sandy substrate which naturally restores itself following storm/flow events. Temporary impacts within vegetated jurisdictional features include overland travel, equipment staging, material laydown, foot traffic, like-for-like structure replacement, etc. Temporarily disturbed areas would be restored in-place through grooming to preexisting contours, topsoil salvage and replacement (which allows natural recruitment reseeding), and where necessary, revegetation. Recontouring would restore preexisting hydrological function to the system while topsoil salvage would allow for reestablishment of the preexisting, naturally occurring seed bank. Revegetation would be augmented through overland travel methods preserving the root mass of existing woody vegetation to allow crown resprouting to occur.

Temporary impacts to riparian vegetation under the jurisdiction of CDFW would occur during the removal of existing subtransmission structures that are located in jurisdictional wetlands and waters,

during installation of replacement structures (if such features cannot be avoided), and during the establishment of temporary construction areas such as pulling and tensioning sites. Permanent impacts to riparian vegetation under the jurisdiction of CDFW could be realized from the rehabilitation/upgrading of existing access and spur roads that are routed through jurisdictional waters (which may include widening the existing access and spur roads to meet SCEs standards for construction), and from the unavoidable installation of replacement subtransmission structures in wetlands and waters.

Prior to the start of construction, SCE would obtain all necessary permits and authorizations for work within jurisdictional waters. The extent of temporary and permanent impacts to jurisdictional areas is presented in Table 4.4-9.

		Temporary Impacts		Permanent Impacts	
Feature	<b>Number of Features</b>	Acres	Features	Acres	Features
404 wetlands	84	98.1	71	4.8	65
404 other waters	2,570	19.6	745	2.0	1,422
CDFW 1602	2,568	34.8	771	3.0	1,303
Total	5,222	152.5	1,587	9.8	2,790

**Table 4.4-9: Jurisdictional Waters Impacts** 

SCE would obtain all necessary permits and authorizations from the USACE, RWQCB, and CDFW prior to construction. SCE would comply with all conditions of approval identified in permits and authorizations including but not limited to: avoidance of jurisdictional features where feasible, construction within the dry season, preventing equipment from entering waterways, and restoration to pre-project conditions. Further, SCE would develop and implement one or more project-specific SWPPPs that would include best management practices (BMPs) to prevent erosion and sedimentation into wetlands and streams and that would protect water quality during construction. Compliance with such typical conditions is reflected in the measures contained in APM WET-1; through implementation of this APM, SCE would avoid or minimize impacts to all state and federally jurisdictional waters, wetlands, and riparian habit by siting activities outside these areas, implementing appropriate BMPs, mitigating for permanent impacts, and performing restoration for temporary impacts. With the implementation of APM WET-1, implementation of the project-specific SWPPP, and compliance with permits and authorizations issued for the project, impacts on jurisdictional waters would be less than significant.

### **4.4.6.3.2 Operations**

Less Than Significant Impact. As presented in Chapter 3, SCE is currently performing operation and maintenance (O&M) activities, including inspections, along the subtransmission lines that would be rebuilt and reconductored under the IC Project. In Segments 3N, 3S, and 4, no material changes in O&M activities or the locations of these activities are anticipated with implementation of the IC Project; O&M activities performed along the re-aligned structures in Segments 1 and 2 would be performed in areas previously-disturbed during construction and assessed above. O&M activities typically do not impact water quality nor result in discharges to waters as ground-disturbing activities are not usually required for O&M. However, if ground disturbance would be necessary, BMPs would be implemented to protect resources from any discharges, and affected areas would be restored to pre-disturbance conditions. With the implementation of BMPs and the restoration of affected areas to pre-disturbance conditions, O&M activities are not expected to result in the impact of federally protected waters and drainages. In addition, if it is necessary to conduct any work within a channel or to remove riparian vegetation, the work would

require approval from the USACE, RWQCB or CDFW as well as adherence to any permit conditions associated with that approval. Therefore, impacts would be less than significant.

4.4.6.4 Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites?

### **4.4.6.4.1** Construction

Less Than Significant Impact. No replacement subtransmission structures would be installed in waters that support native resident or migratory fish. Two structures in and immediately adjacent to the shoreline of Little Lake would be removed. As discussed earlier, native resident fish are extirpated from this water body, and thus the Project would have no impacts to the movement of any native resident or migratory fish.

Desert bighorn sheep and their sign were observed along the IC Project Alignment in two locations along Segment 4, in the Cady Mountains and the Clark Mountains. Known herds occur in both of these mountain ranges. Bighorn sheep require habitat connectivity within their home range to move uninhibited to foraging areas and water sources, and construction activities may interfere with their seasonal movement. Increased human presence within habitat and removal of vegetation during migratory periods could result in disruption of migratory behaviors of bighorn sheep. Ground-disturbing activities have the potential to increase colonization of weed species and reduce native vegetation. Incidental introductions of invasive non-native weeds have the potential to reduce habitat quality in the immediate area and beyond through direct competition and occupation of prime germination sites of prime forage species.

SCE would implement an APM that focuses on avoiding and minimizing potential impacts to the desert bighorn sheep, APM BIO-MAM-5 Bighorn Sheep (Nelson's/Desert), which includes specific measures to avoid and minimize impacts to desert bighorn sheep, including pre-construction surveys, construction monitoring, seasonal work restrictions, helicopter use restrictions, and other measures.

Replacement subtransmission structures would be installed proximate to existing subtransmission structures, or in new alignments immediately adjacent to existing subtransmission line and transmission line alignments. Due to their small cross-sections, replacement structures themselves would not interfere with the movement of any species or corridor, and no structures are located on a known native wildlife nursery site. Construction activities would be temporary and would affect only small, geographically-dispersed areas at any one time; these construction activities would not interfere substantially with the movement of any wildlife species, although construction activities may interfere with the movement of individual animals.

With the implementation of these avoidance measures and APMs, impacts to bighorn sheep would be less than significant.

### **4.4.6.4.2 Operations**

**No Impact.** As presented in Chapter 3, SCE is currently performing operation and maintenance (O&M) activities, including inspections, along the subtransmission lines that would be rebuilt and reconductored under the IC Project. In Segments 3N, 3S, and 4, no material changes in O&M activities or the locations of these activities are anticipated with implementation of the IC Project; O&M activities performed along the re-aligned structures in Segments 1 and 2 would be performed in areas previously-disturbed during construction and assessed above. Given the periodic but infrequent nature of these continuing operations, no impacts would occur under this criterion.

# 4.4.6.5 Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

### **4.4.6.5.1** Construction

**No Impact.** Neither Kern County nor Inyo County have policies or ordinances protecting biological resources that are relevant to the IC Project.

Regulations for the preservation and protection of specific desert plants, including creosote bush and Joshua trees, are addressed in Section 88.01.060 of the County of San Bernardino Development Code. Section 88.01.080 of the County of San Bernardino Development Code addresses protection of riparian plants, which is defined by the County as vegetation located within 200 feet of the bank of a stream; such plants are found across the IC Project Alignment in San Bernardino County. Section 88.01.030, Exempt Activities, of the County of San Bernardino Development Code states that the provisions of the County's Plant Protection and Management ordinances (Chapter 88.01) shall not apply to the "removal [of regulated trees or plants] by a public utility subject to jurisdiction of the Public Utilities Commission." Therefore, there would be no impact under this criterion.

### **4.4.6.5.2 Operations**

**No Impact.** As presented in Chapter 3, SCE is currently performing operation and maintenance (O&M) activities, including inspections, along the subtransmission lines that would be rebuilt and reconductored under the IC Project. In Segments 3N, 3S, and 4, no material changes in O&M activities or the locations of these activities are anticipated with implementation of the IC Project; O&M activities performed along the re-aligned structures in Segments 1 and 2 would be performed in areas previously-disturbed during construction and assessed above. Given the periodic but infrequent nature of these continuing operations, no new impacts would occur under this criterion.

# 4.4.6.6 Would the project conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan?

### **4.4.6.6.1 Construction**

**No Impact.** There are no adopted HCPs or NCCPs within the IC Project Alignment, and no known approved local, regional, or state habitat conservation plans covering the IC Project Alignment. Therefore, there would be no impacts under this criterion.

### **4.4.6.6.2 Operations**

**No Impact.** There are no adopted HCPs or NCCPs within the IC Project Alignment, and no known approved local, regional, or state habitat conservation plans covering the IC Project Alignment. Therefore, there would be no impacts under this criterion.

### 4.4.7 Applicant Proposed Measures

SCE would implement the following APMs, as appropriate, to reduce impacts on biological resources to less-than-significant:

- BIO-GEN-1: Pre-Construction Biological Clearance Surveys and Monitoring
- WEAP: Worker's Environmental Awareness Training Program
- BIO-AVI-1: Prepare Nesting Bird Management Plan
- BIO-AVI-2: Burrowing Owl
- BIO-AVI-3: Yellow-billed Cuckoo

- BIO-AVI-4: Golden Eagle
- BIO-HERP-1: Desert Tortoise
- BIO-HERP-9: Northern Leopard Frog
- BIO-MAM-1: Mohave Ground Squirrel
- BIO-MAM-5: Bighorn Sheep Nelson's /Desert Bighorn Sheep
- BIO-MAM-6: Bats, Common and Sensitive Species
- BIO-RES-1: Habitat Restoration Management Plan
- BIO-RES-2: Develop Integrated Weed Management Plan
- BIO-BOT-1: Special-Status Herbaceous Plants
- BIO-BOT-2: Special-status Tree/Shrubs/Cactus
- WET-1: Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats

The full text of each of the APMs is presented in Section 5.1.

### 4.4.8 Alternatives

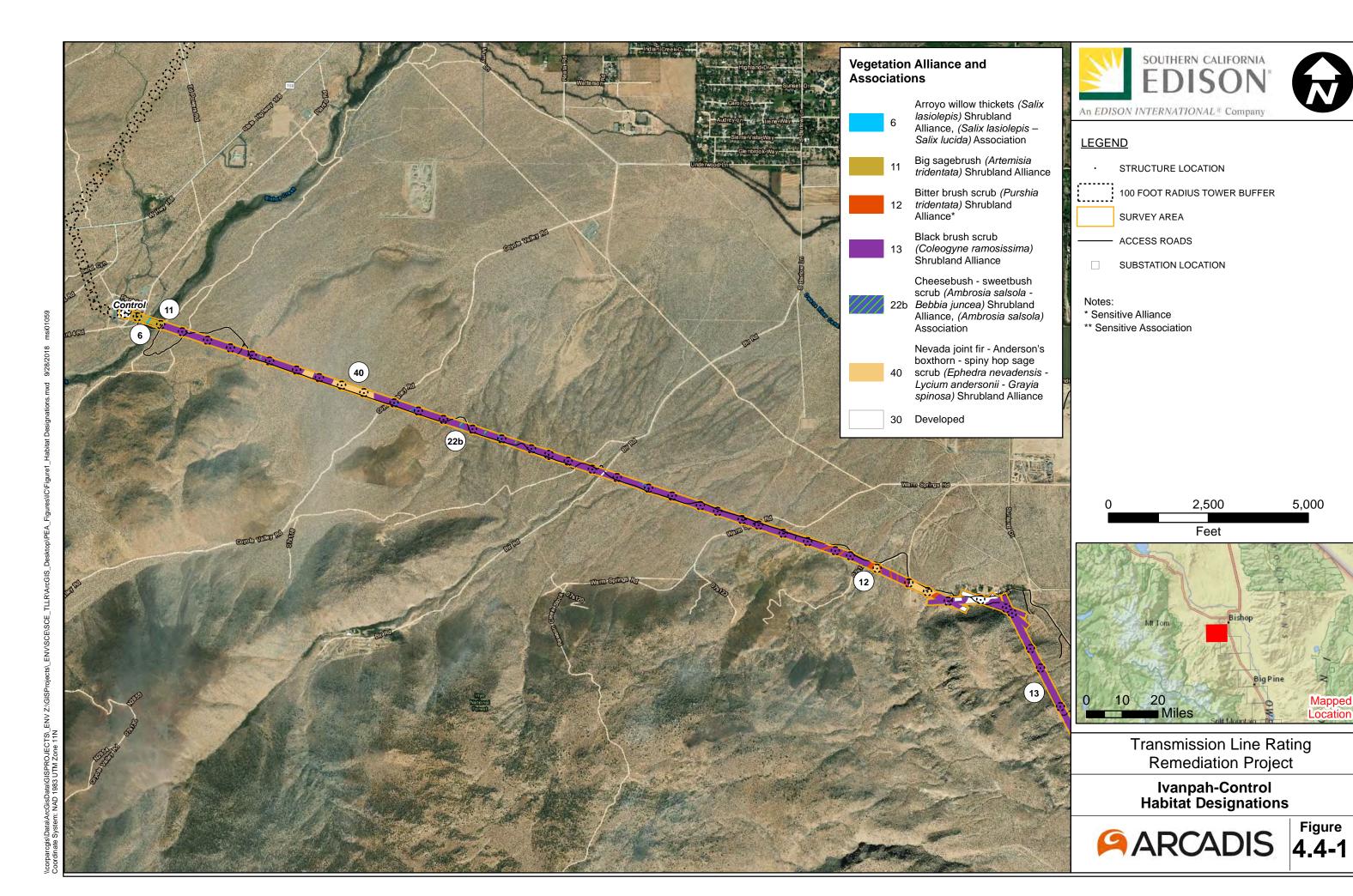
Alternatives to the IC Project are addressed in Section 5.2, Description of Project Alternatives and Impact Analysis.

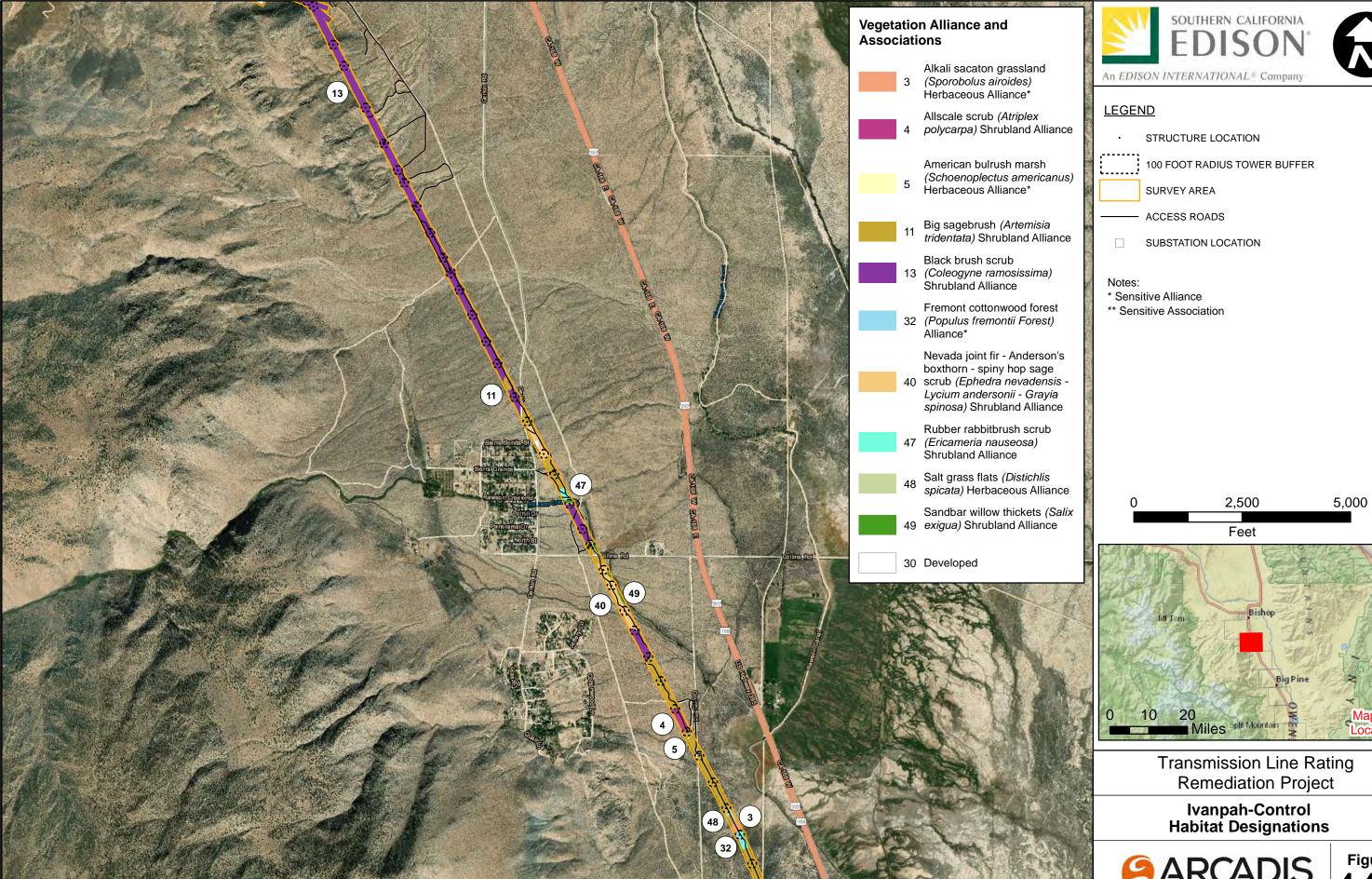
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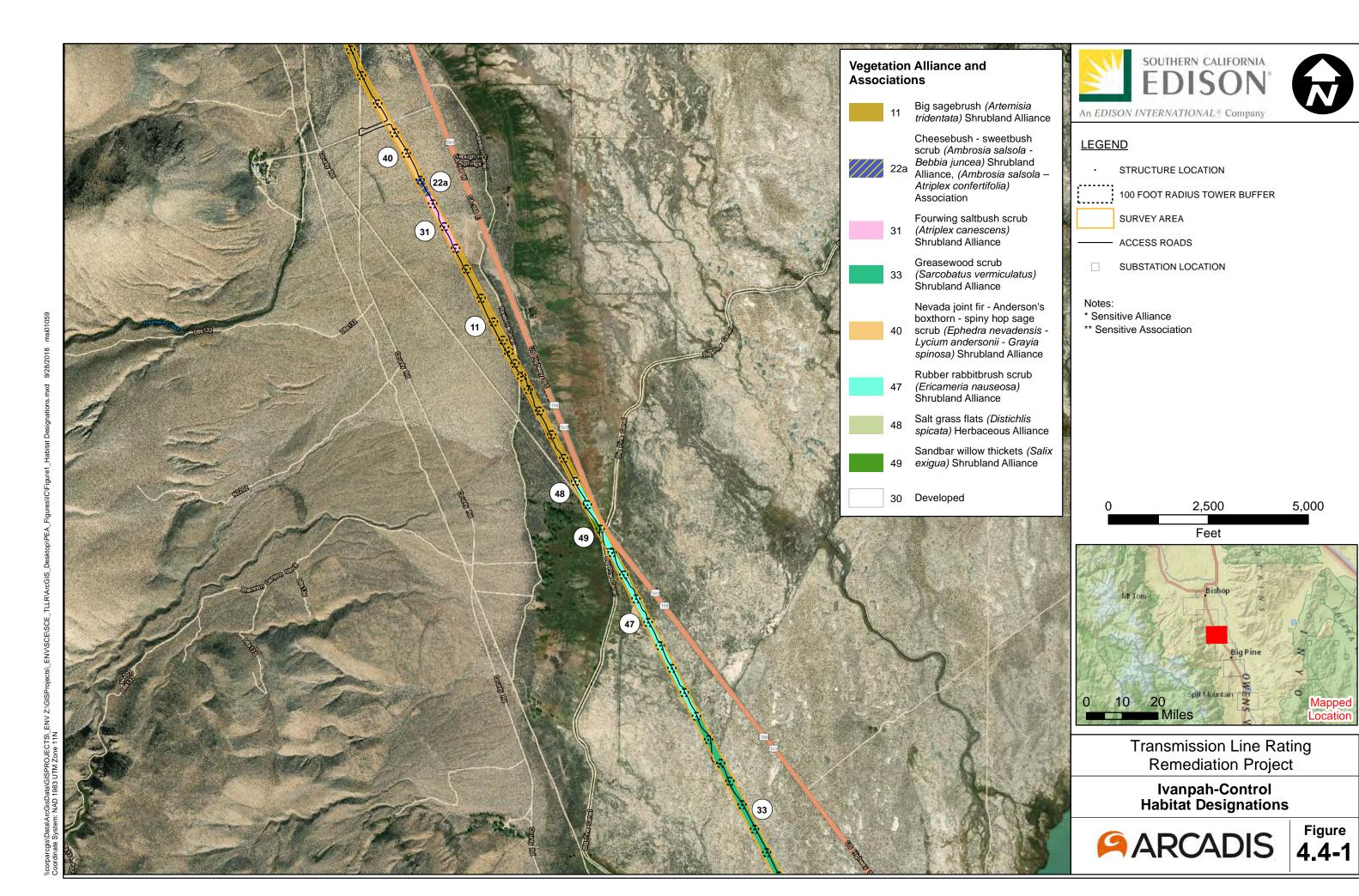
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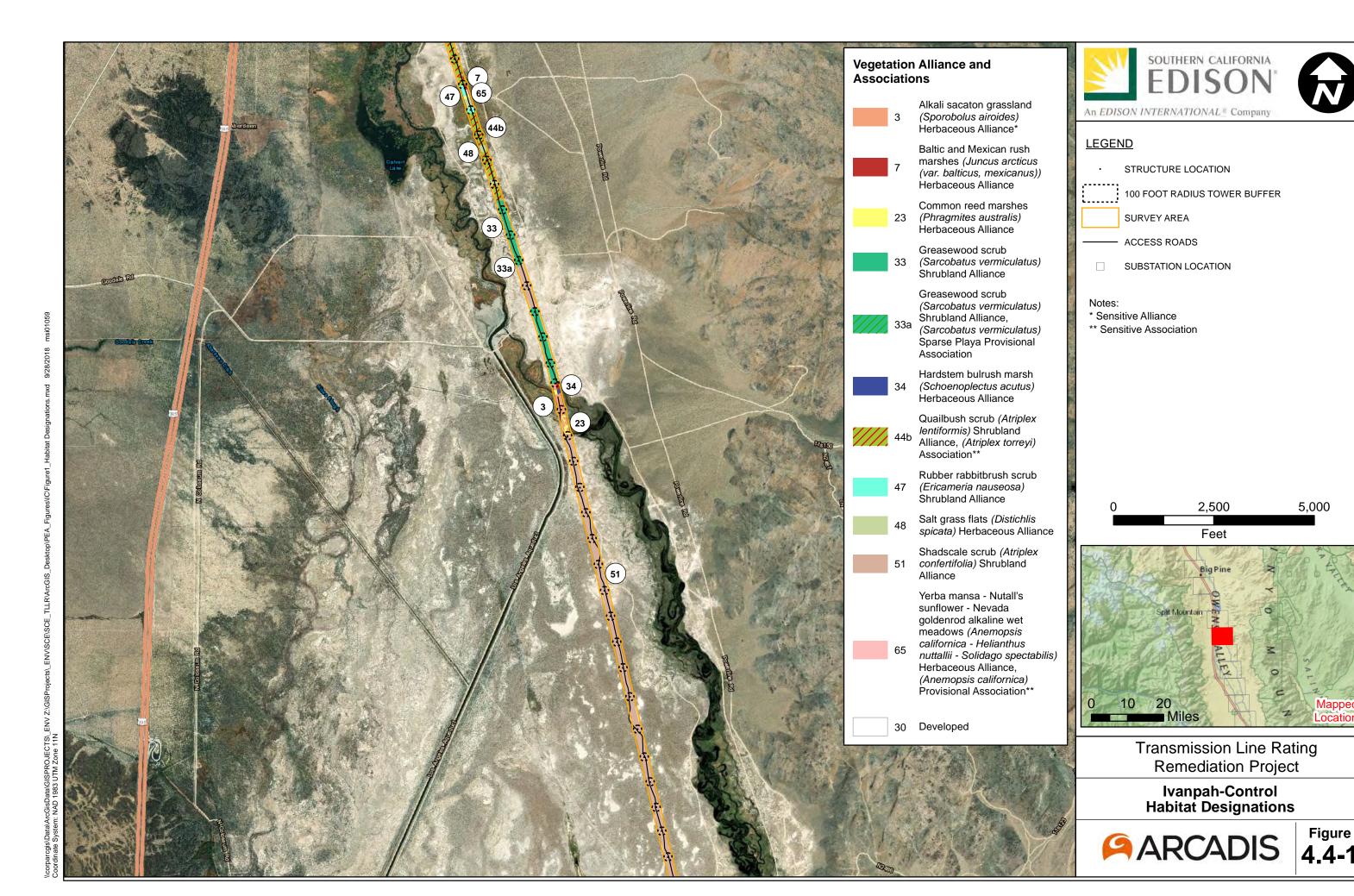


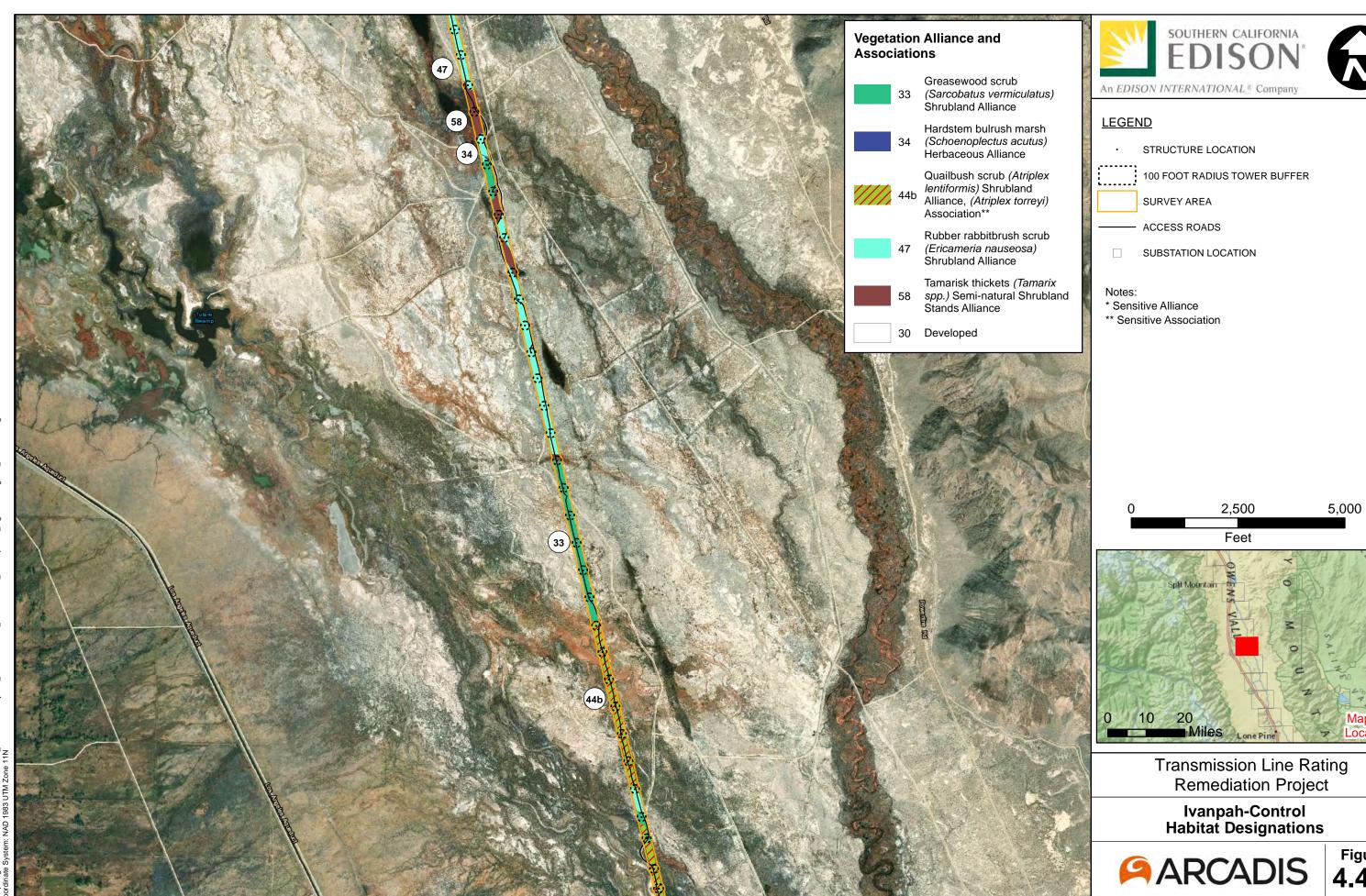


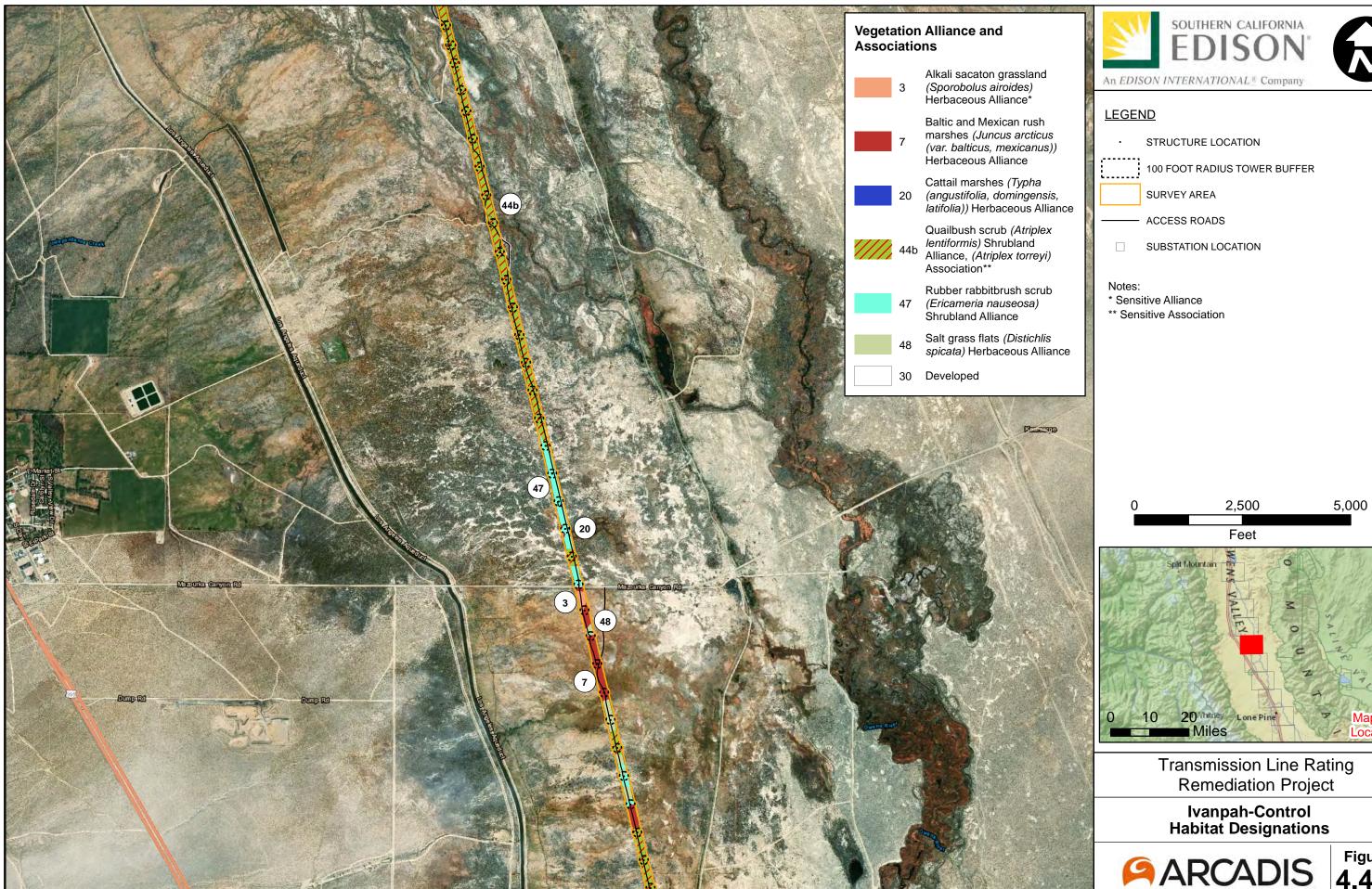
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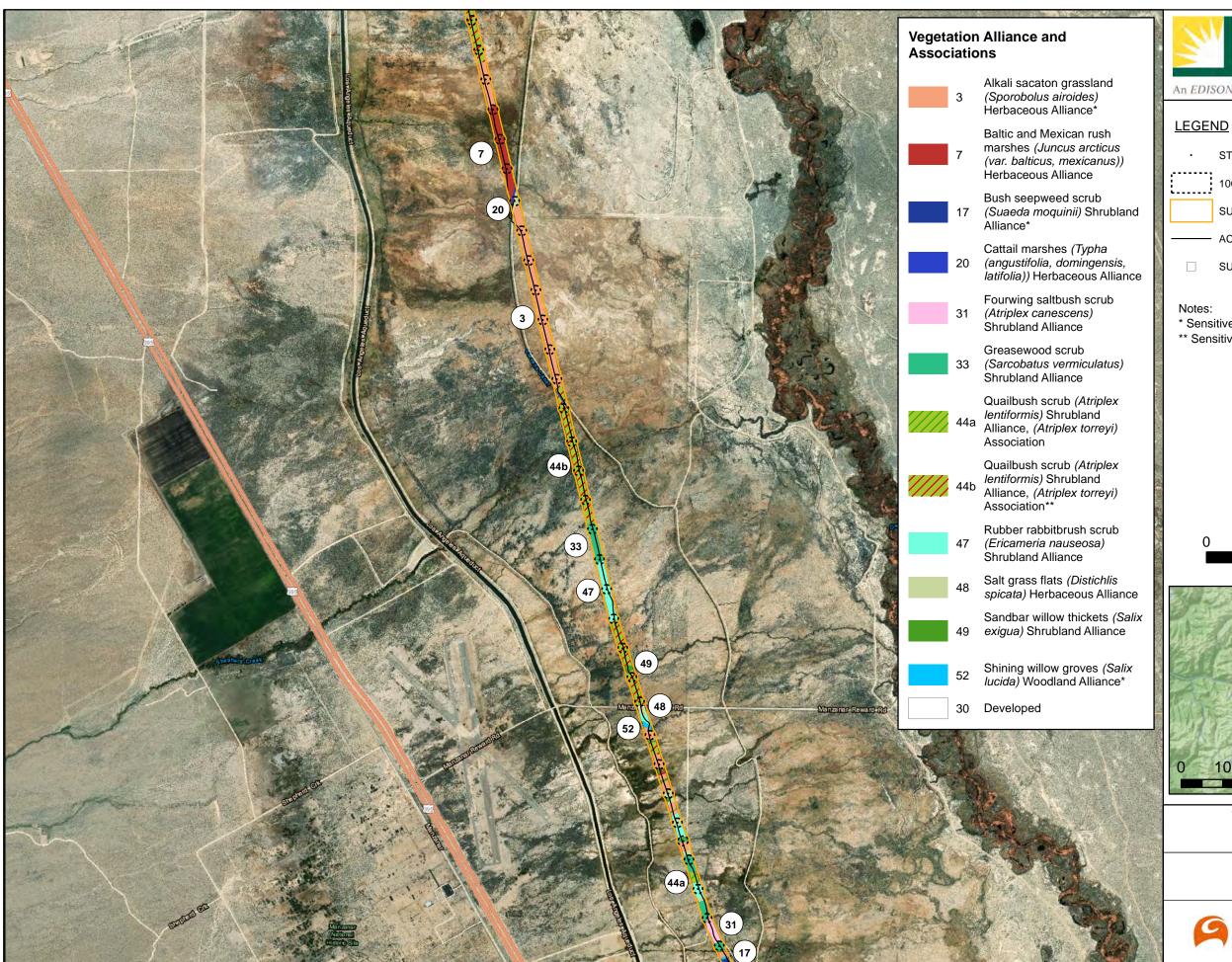
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**Figure** 











STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

SUBSTATION LOCATION

ACCESS ROADS

- \* Sensitive Alliance
- \*\* Sensitive Association

2,500 5,000 Feet



Transmission Line Rating Remediation Project

Ivanpah-Control Habitat Designations





### **LEGEND**

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

— ACCESS ROADS

SUBSTATION LOCATION

### Notes:

- \* Sensitive Alliance
- \*\* Sensitive Association

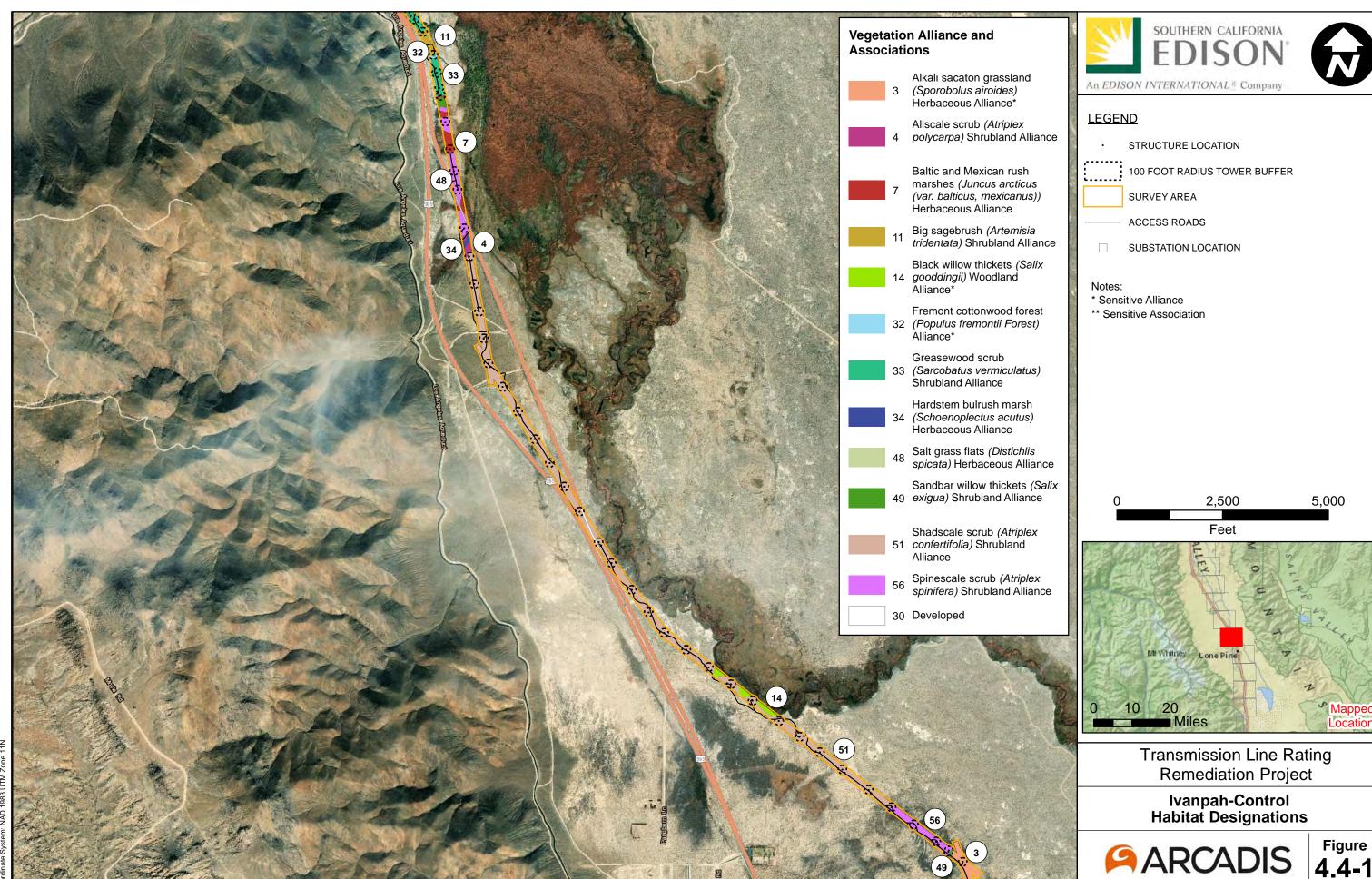
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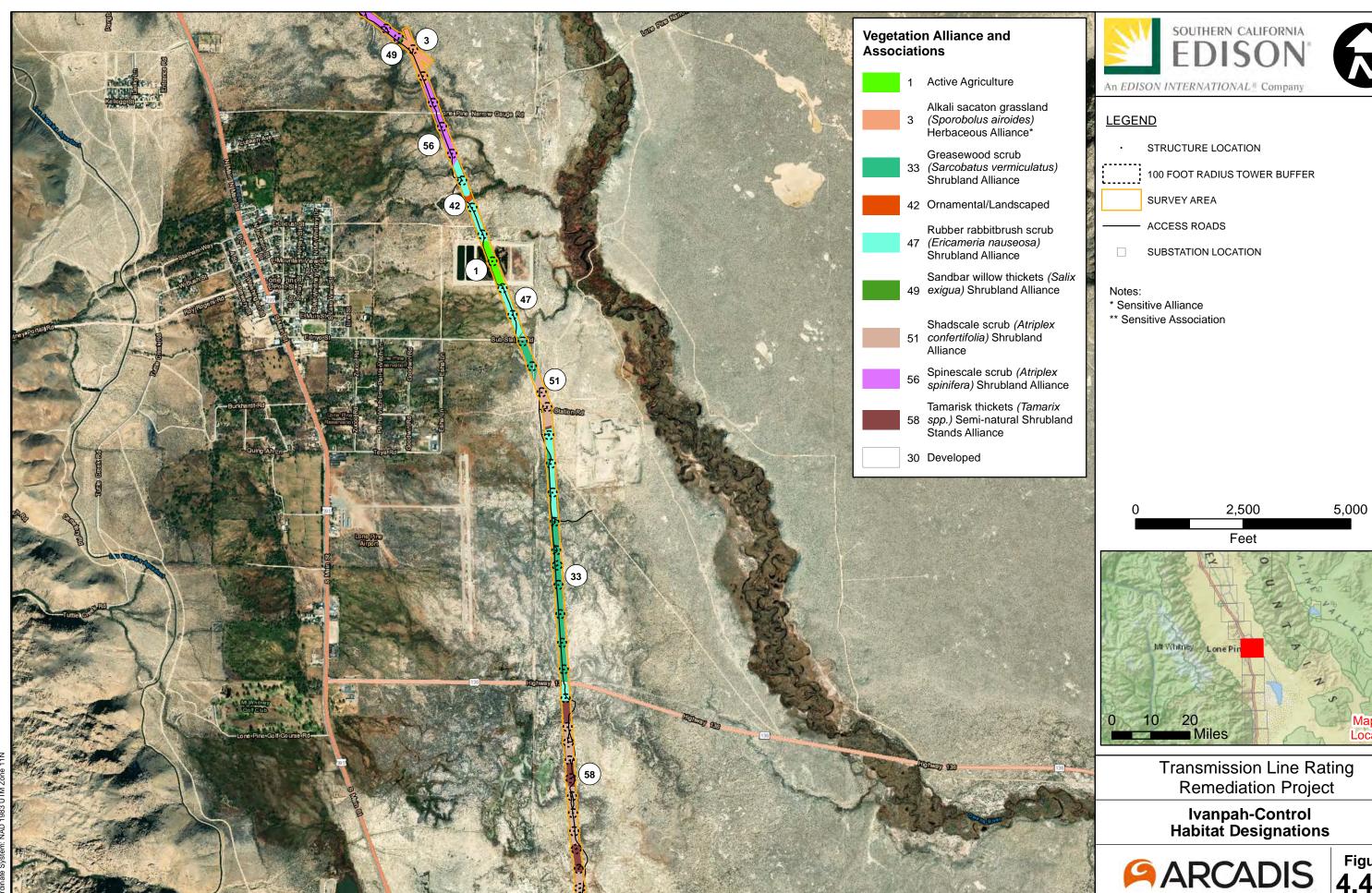
Transmission Line Rating Remediation Project

Ivanpah-Control Habitat Designations

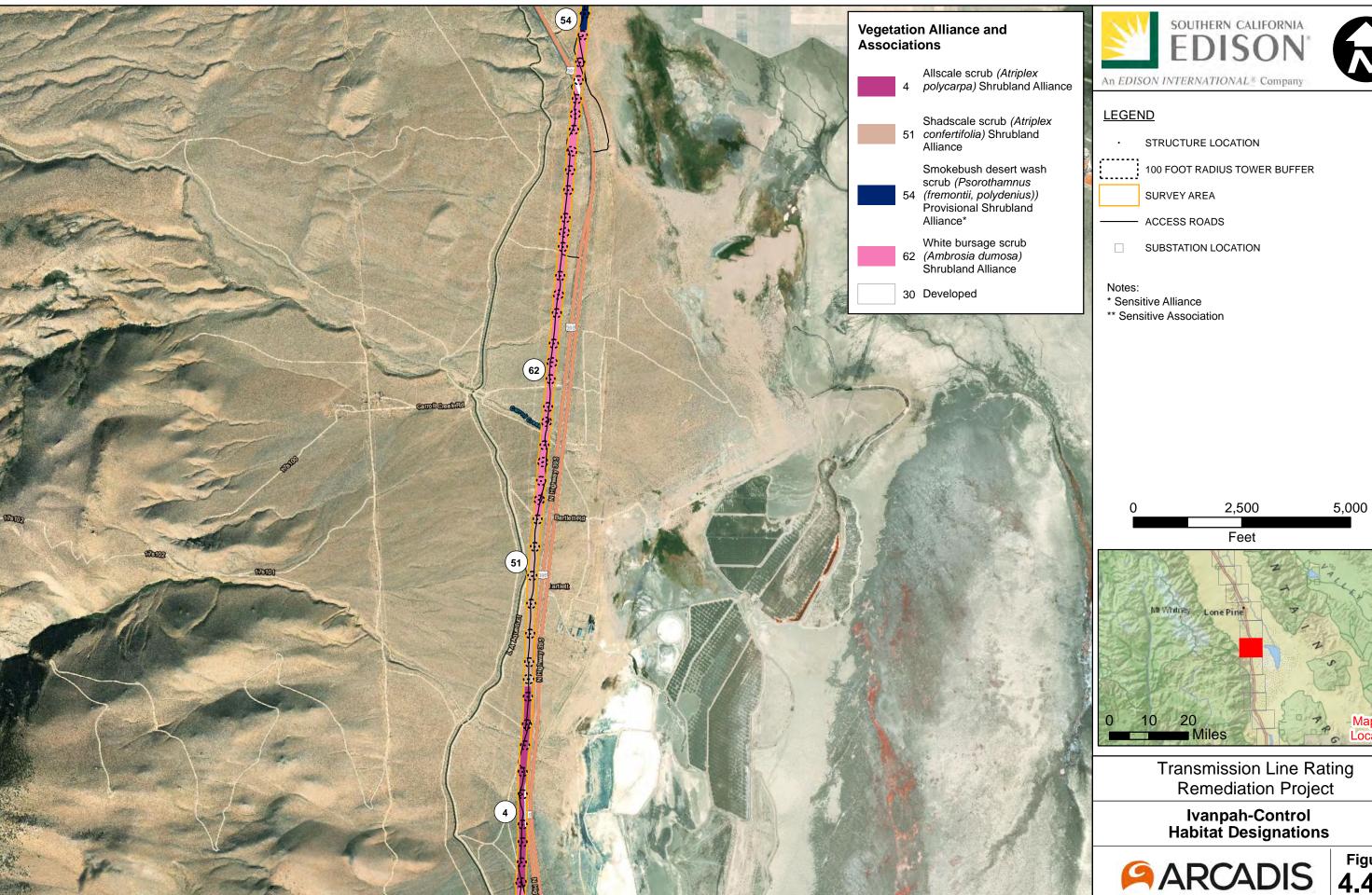


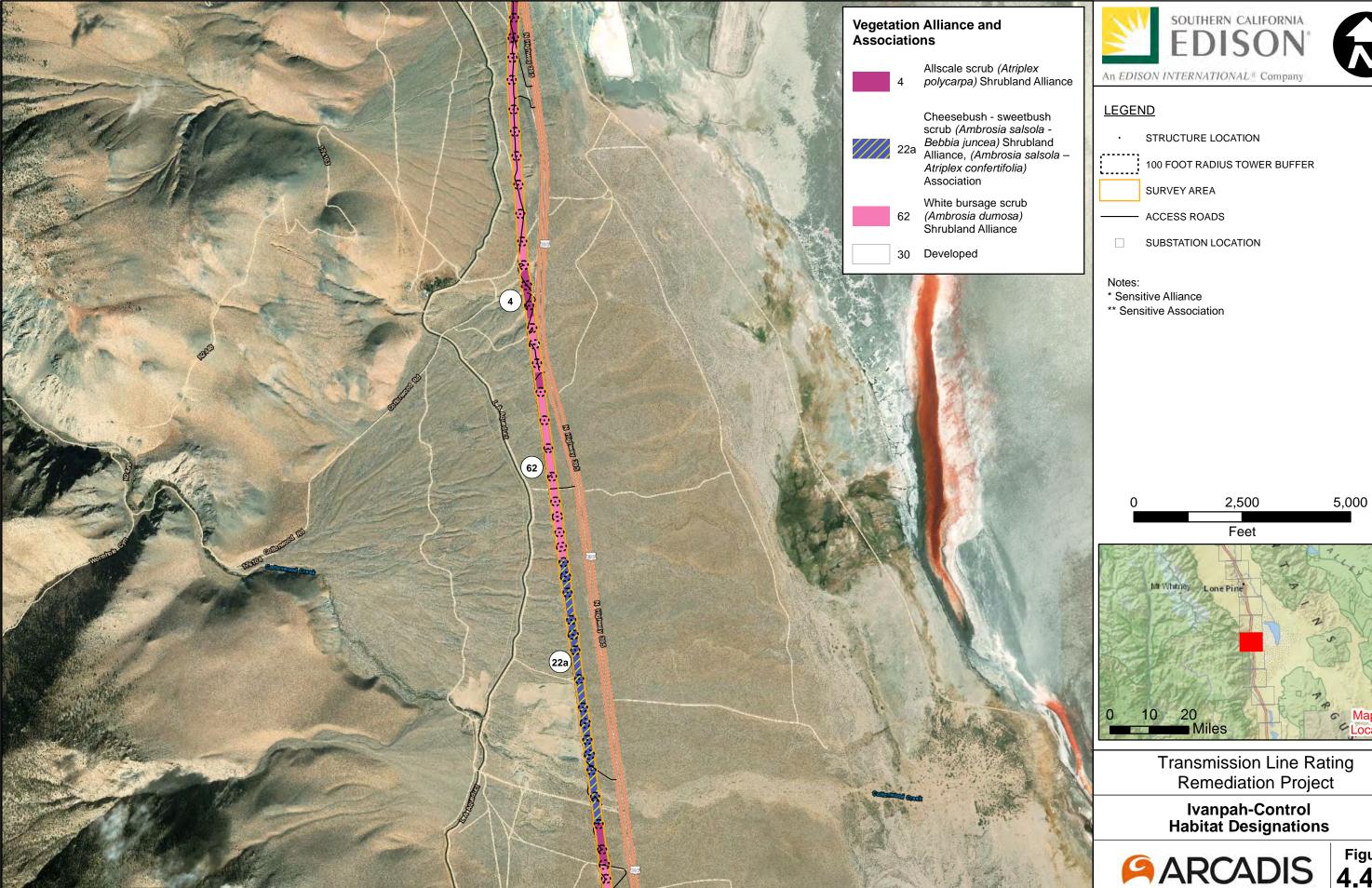


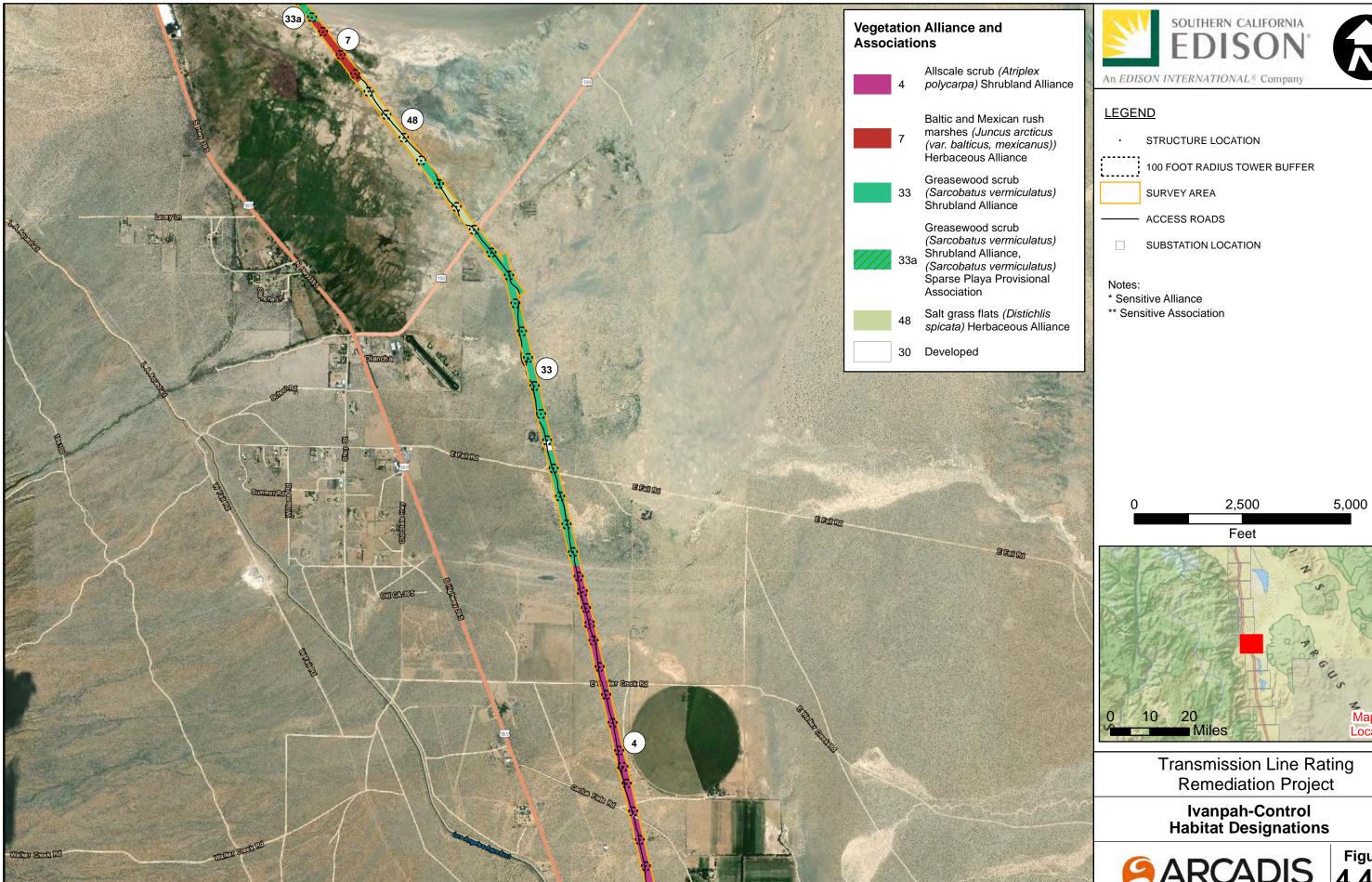
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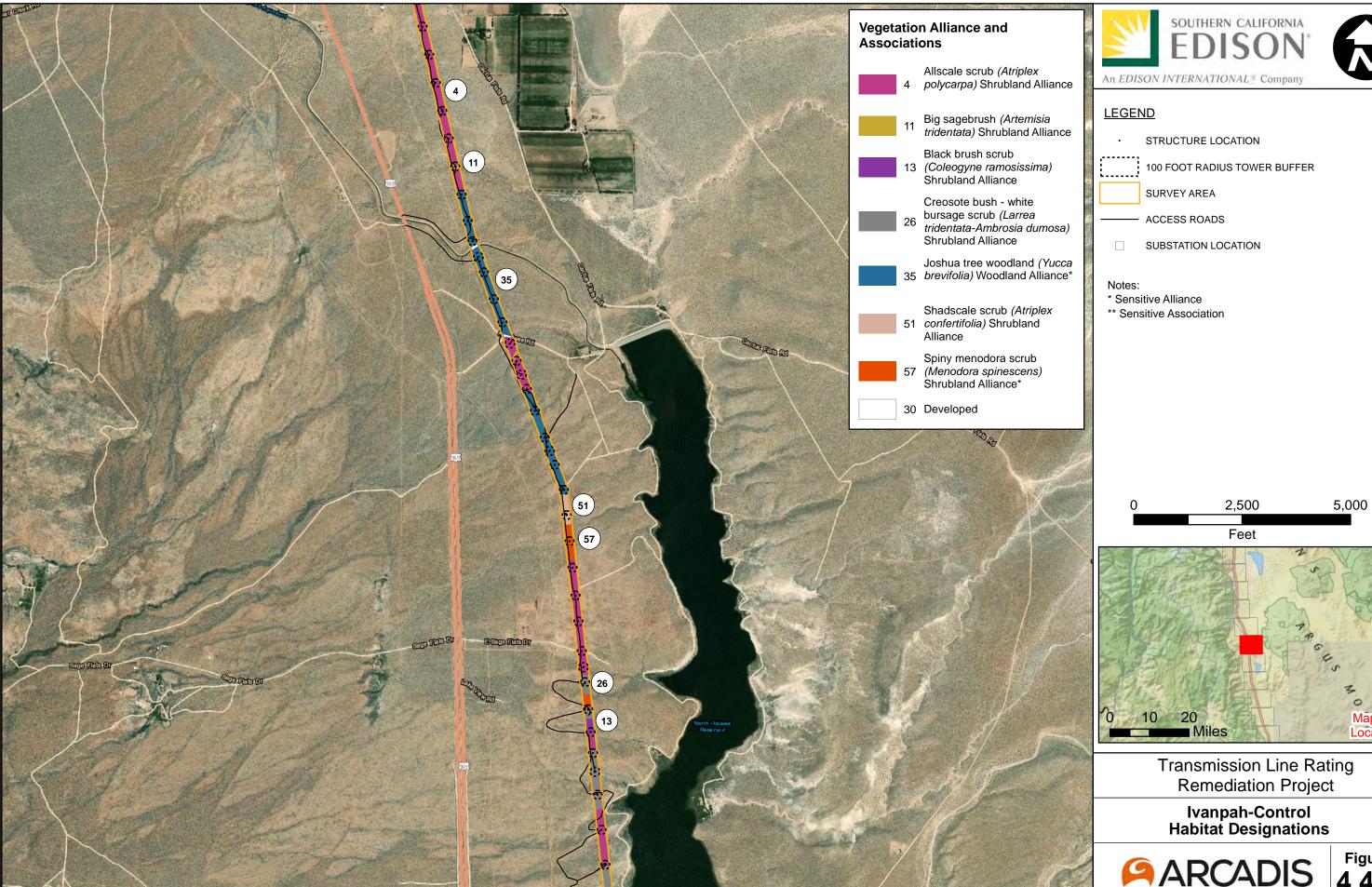




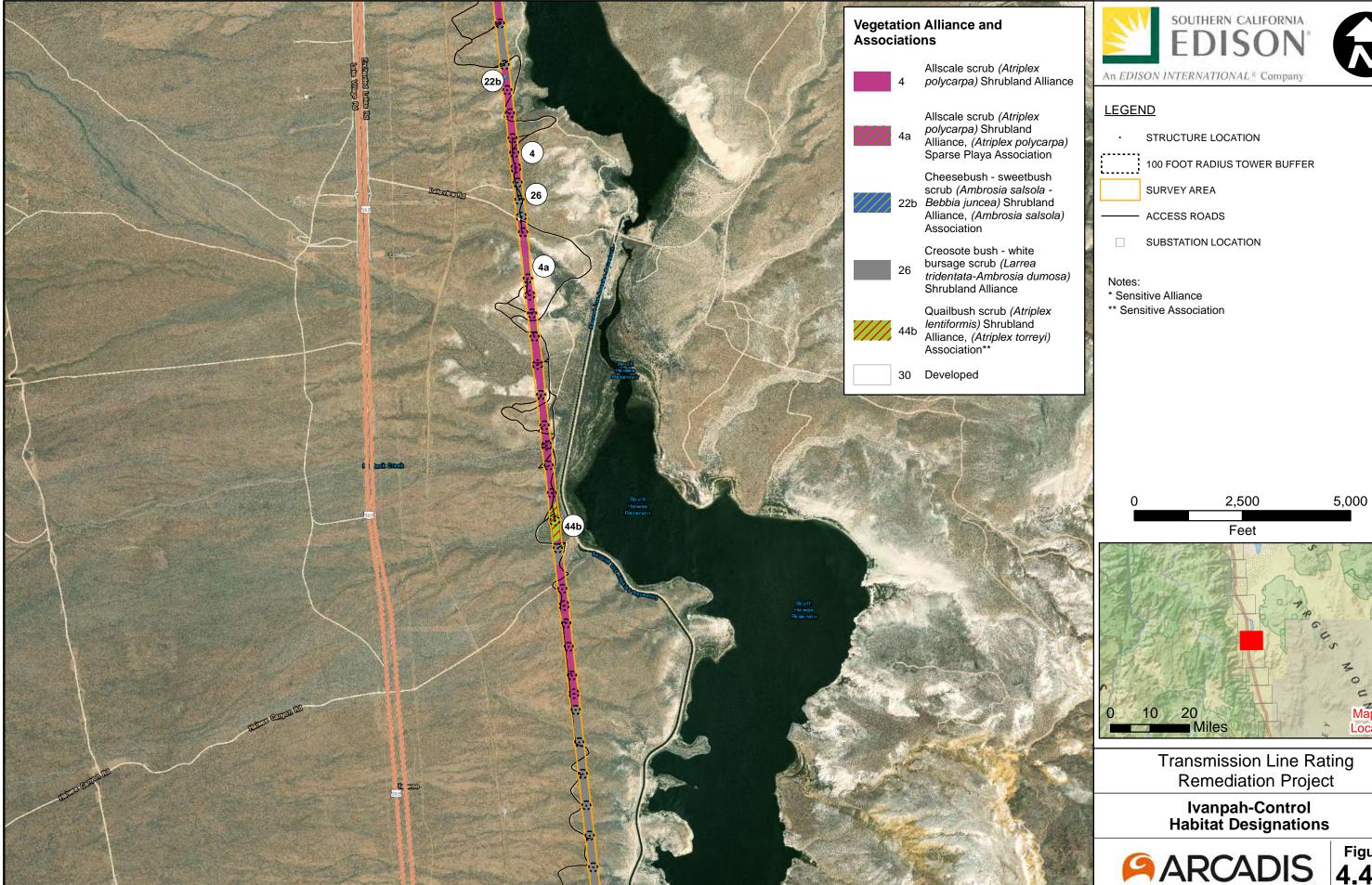


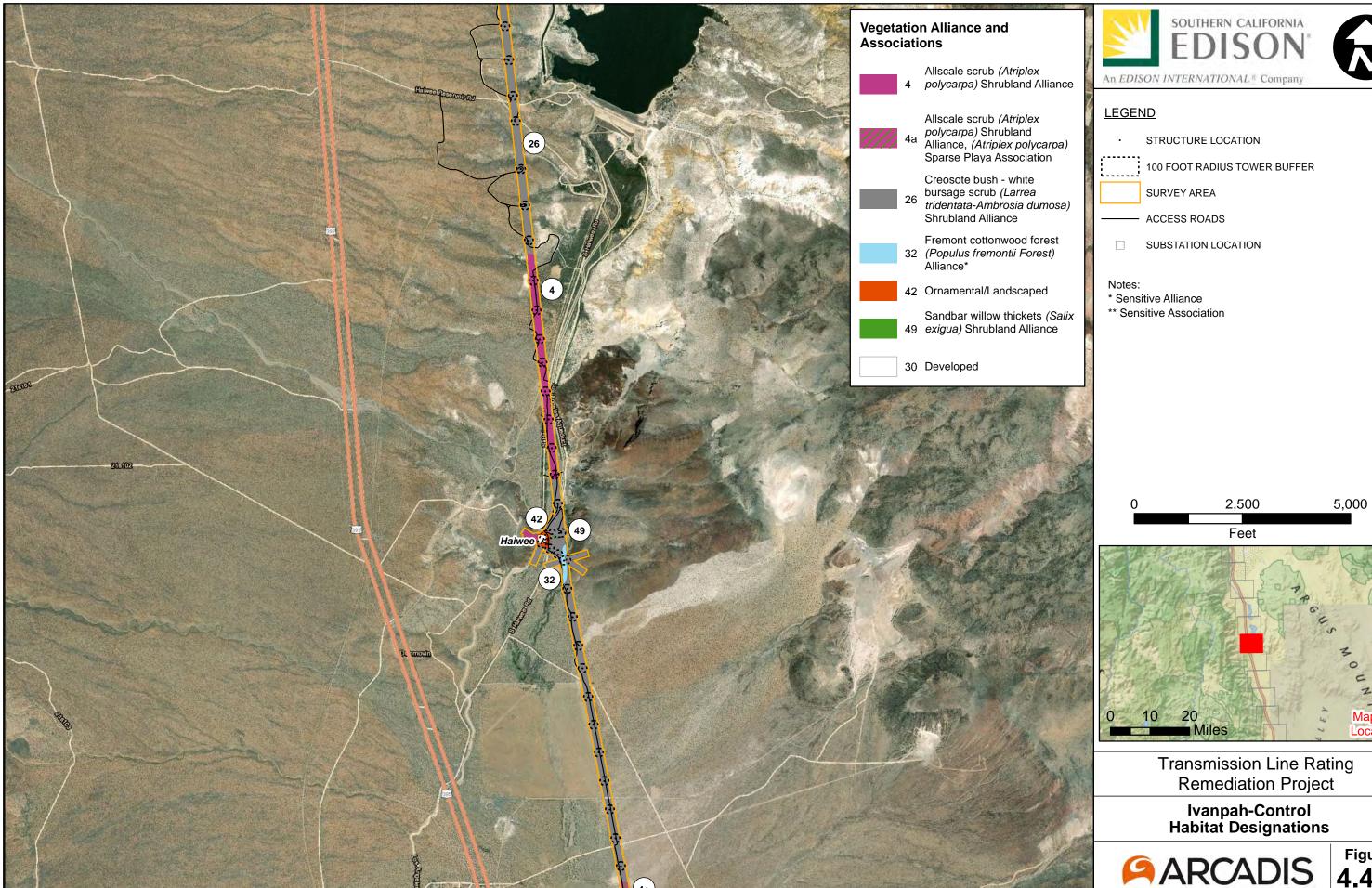
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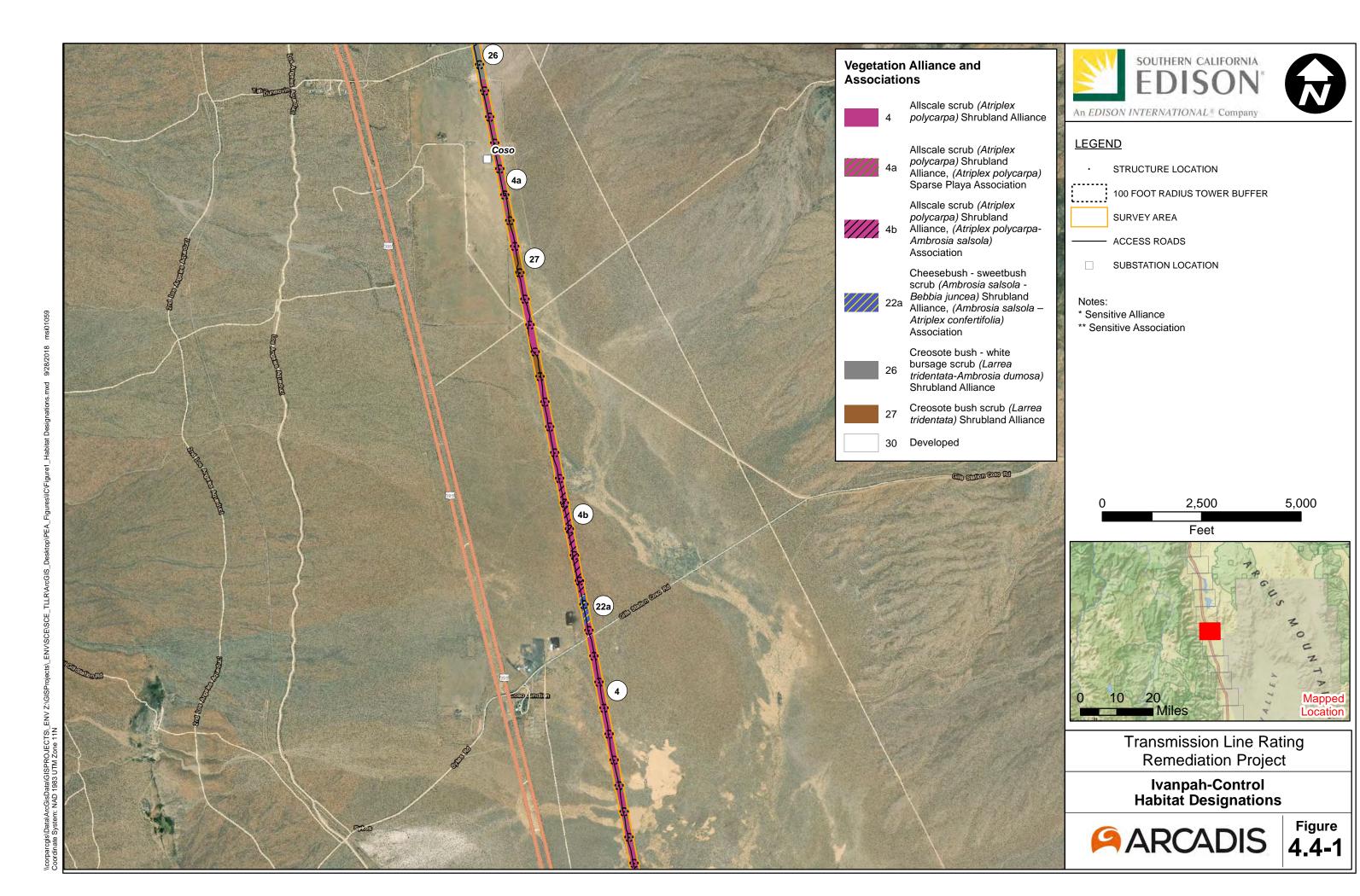


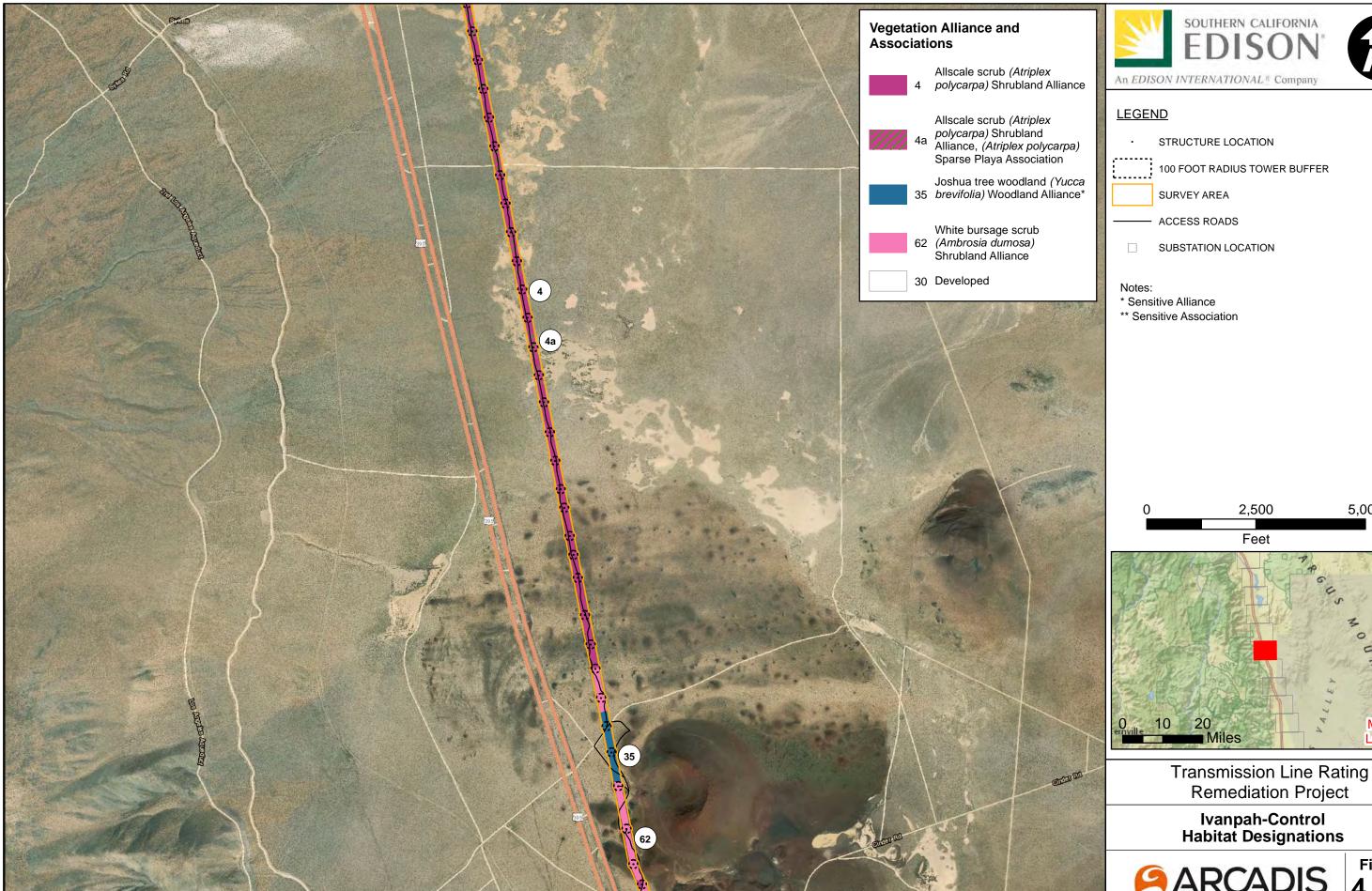






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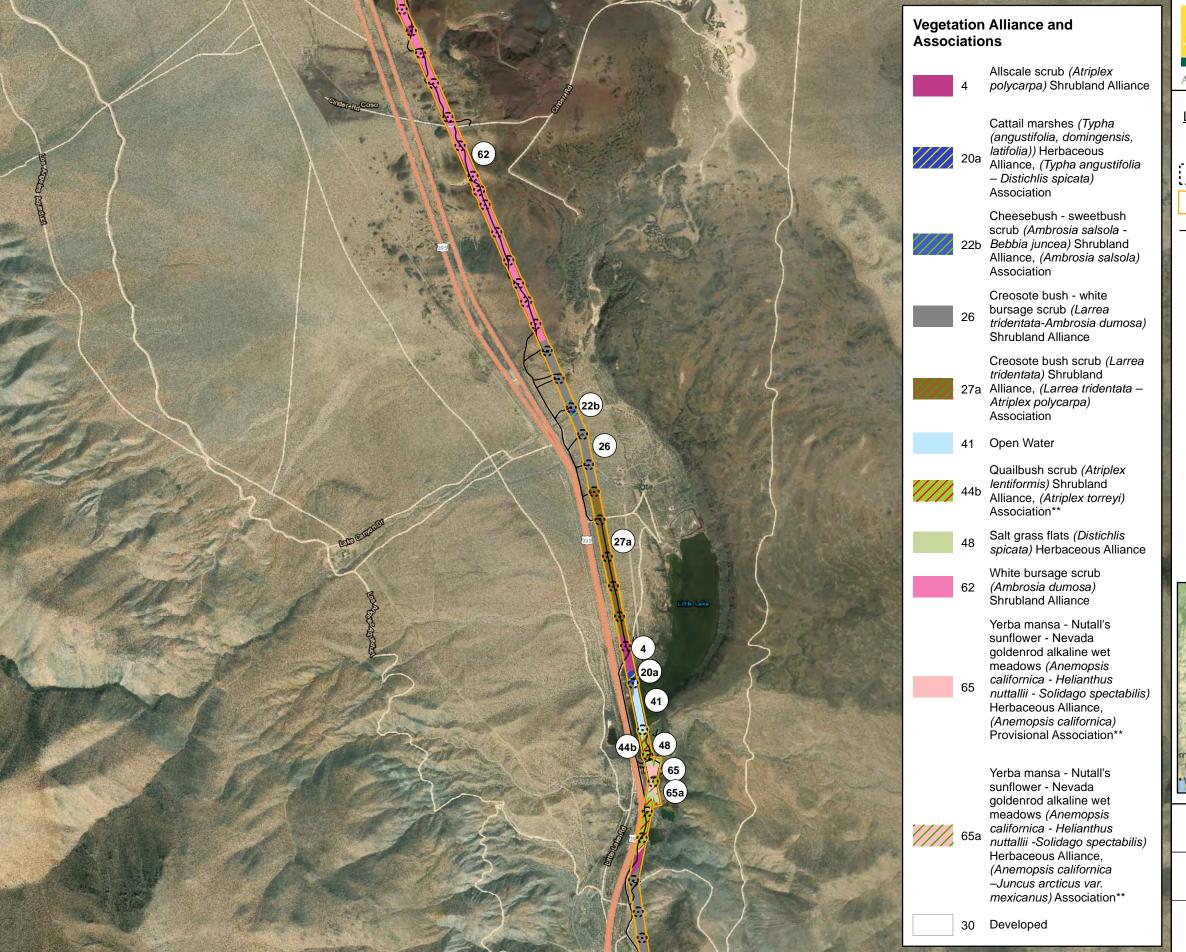




5,000









# **LEGEND**

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

- ACCESS ROADS

☐ SUBSTATION LOCATION

## Notes:

- \* Sensitive Alliance
- \*\* Sensitive Association

0 2,500 5,000 Feet



Transmission Line Rating Remediation Project

Ivanpah-Control Habitat Designations



Figure **4.4-1** 

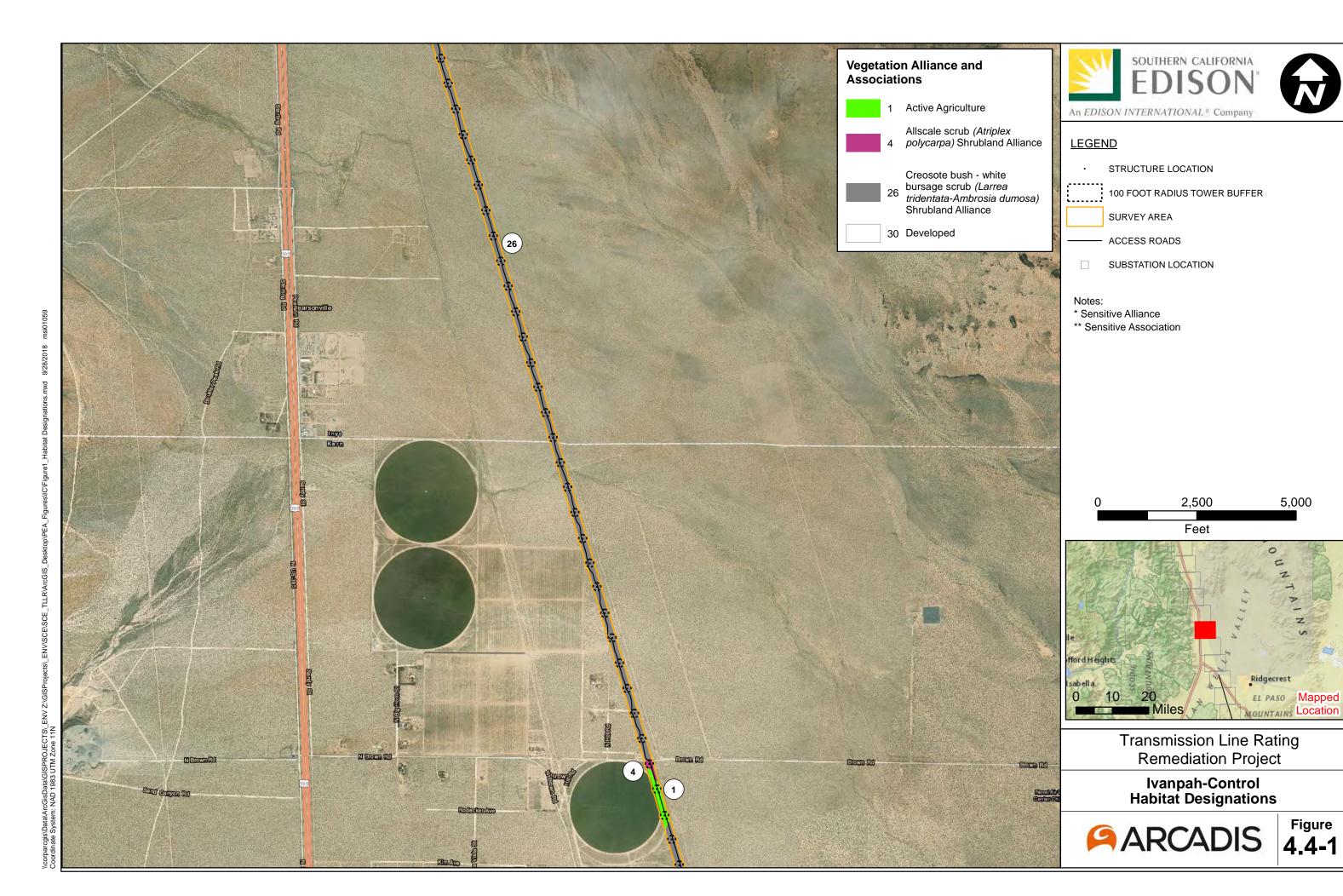


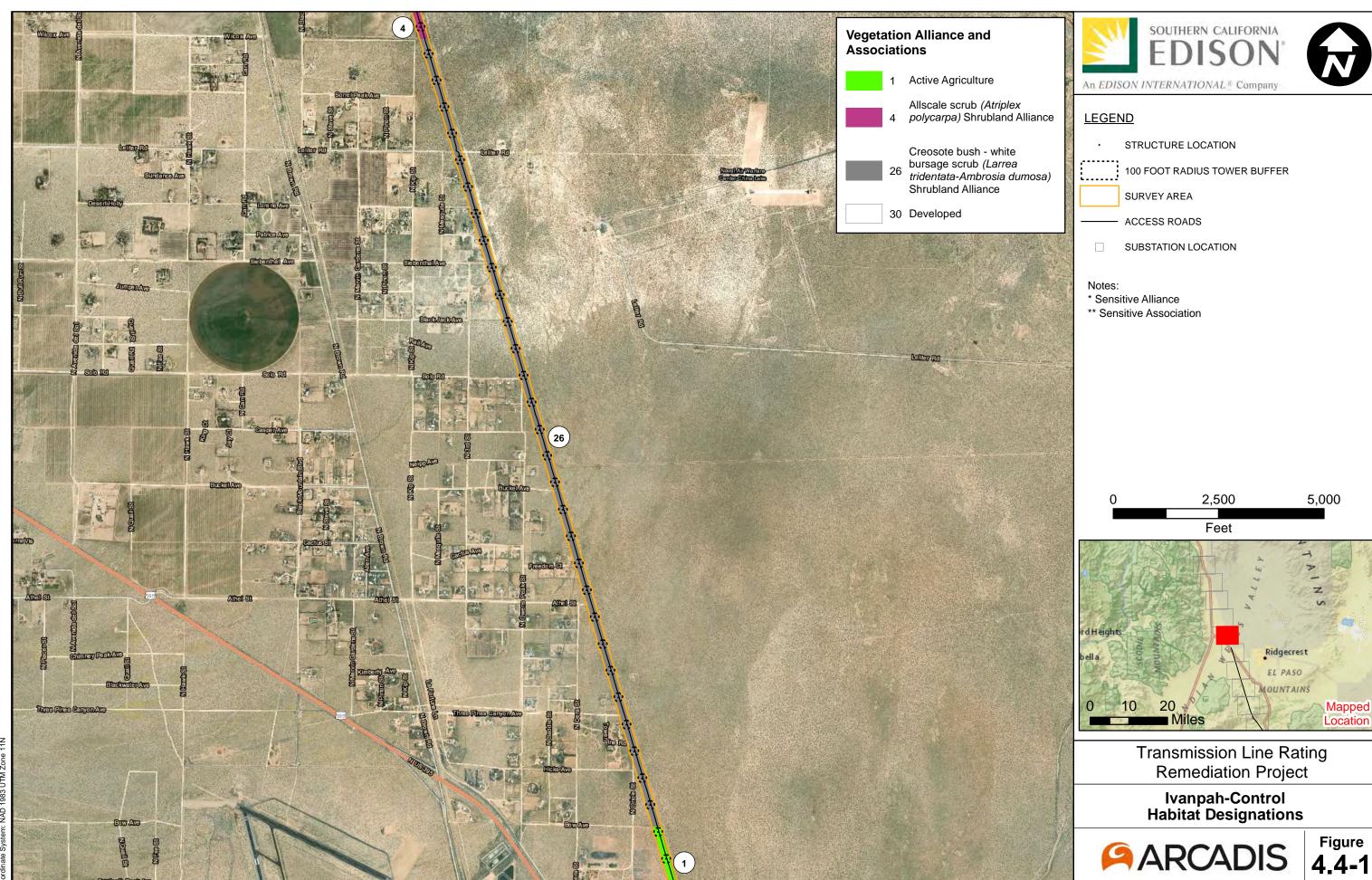


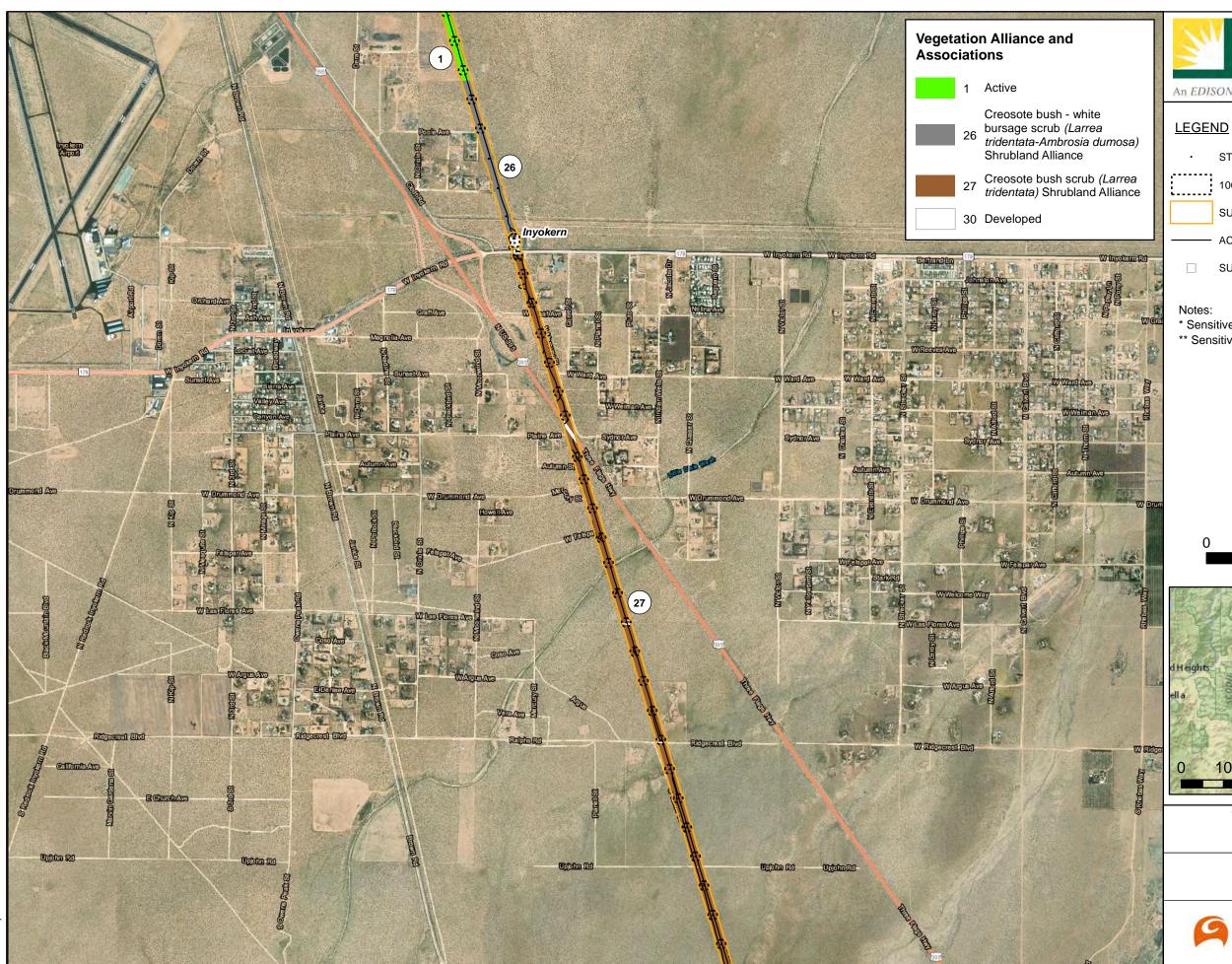
Transmission Line Rating



Figure **4.4-1** 









STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

ACCESS ROADS

SUBSTATION LOCATION

- \* Sensitive Alliance
- \*\* Sensitive Association

2,500 5,000 Feet

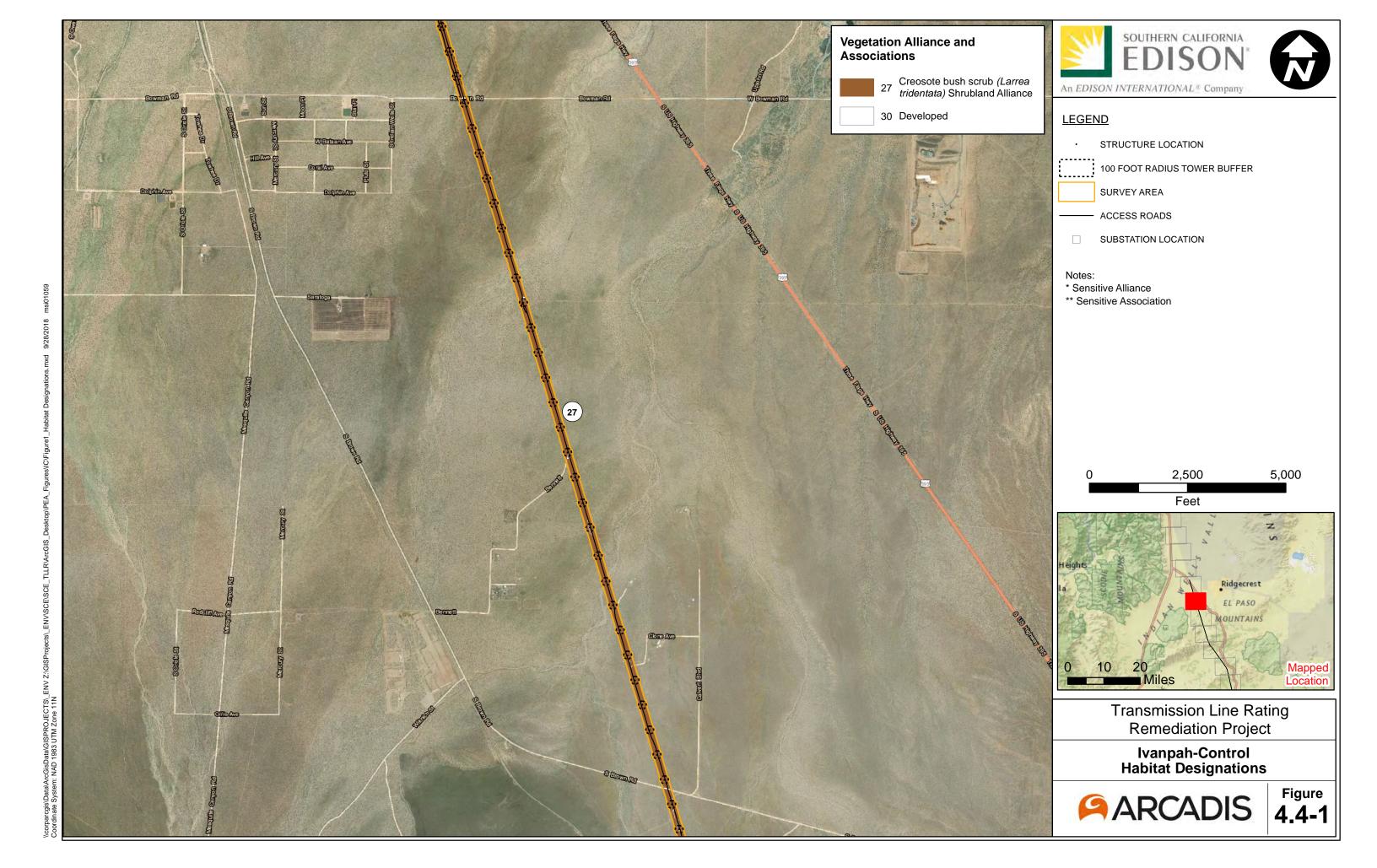


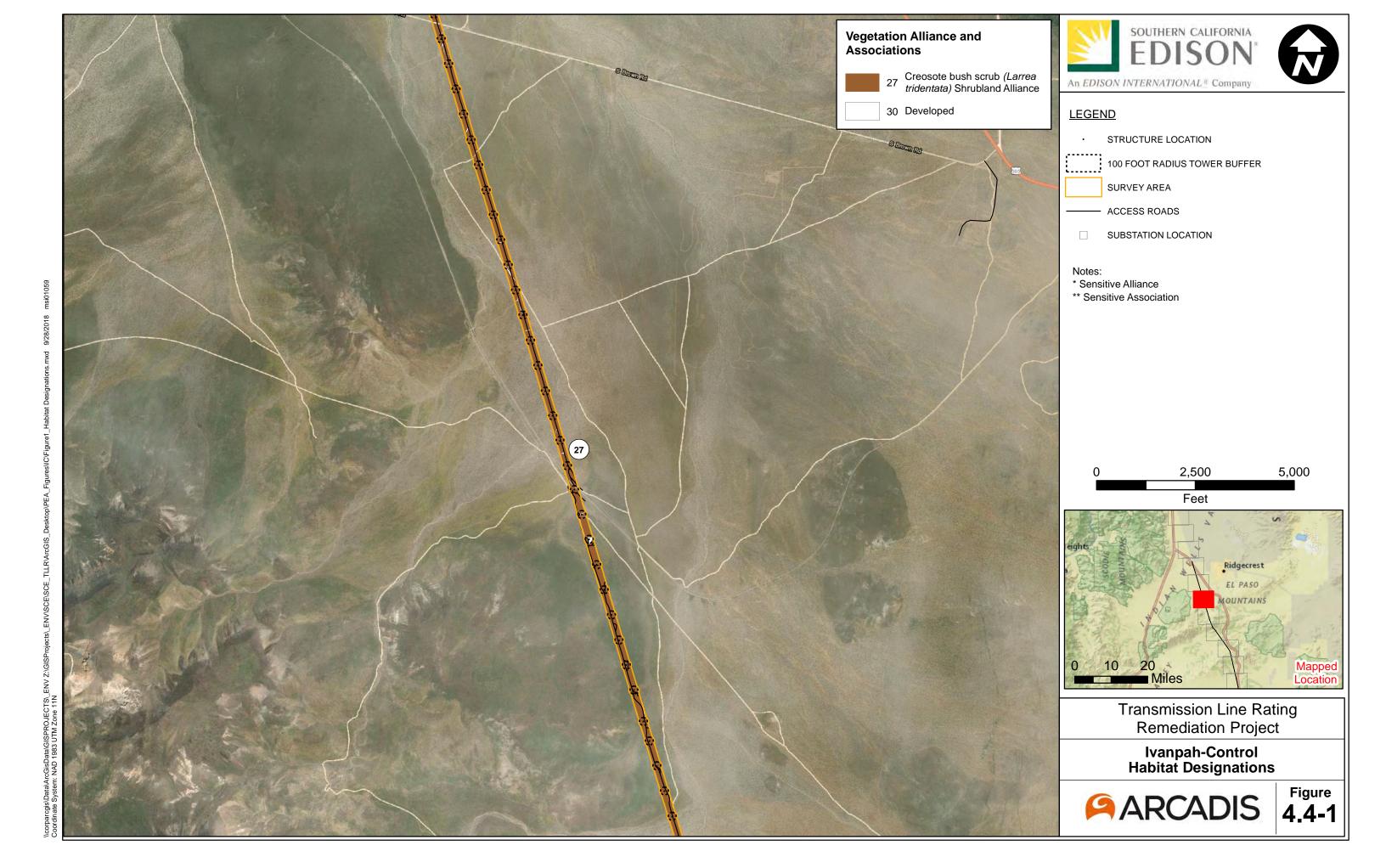
Transmission Line Rating Remediation Project

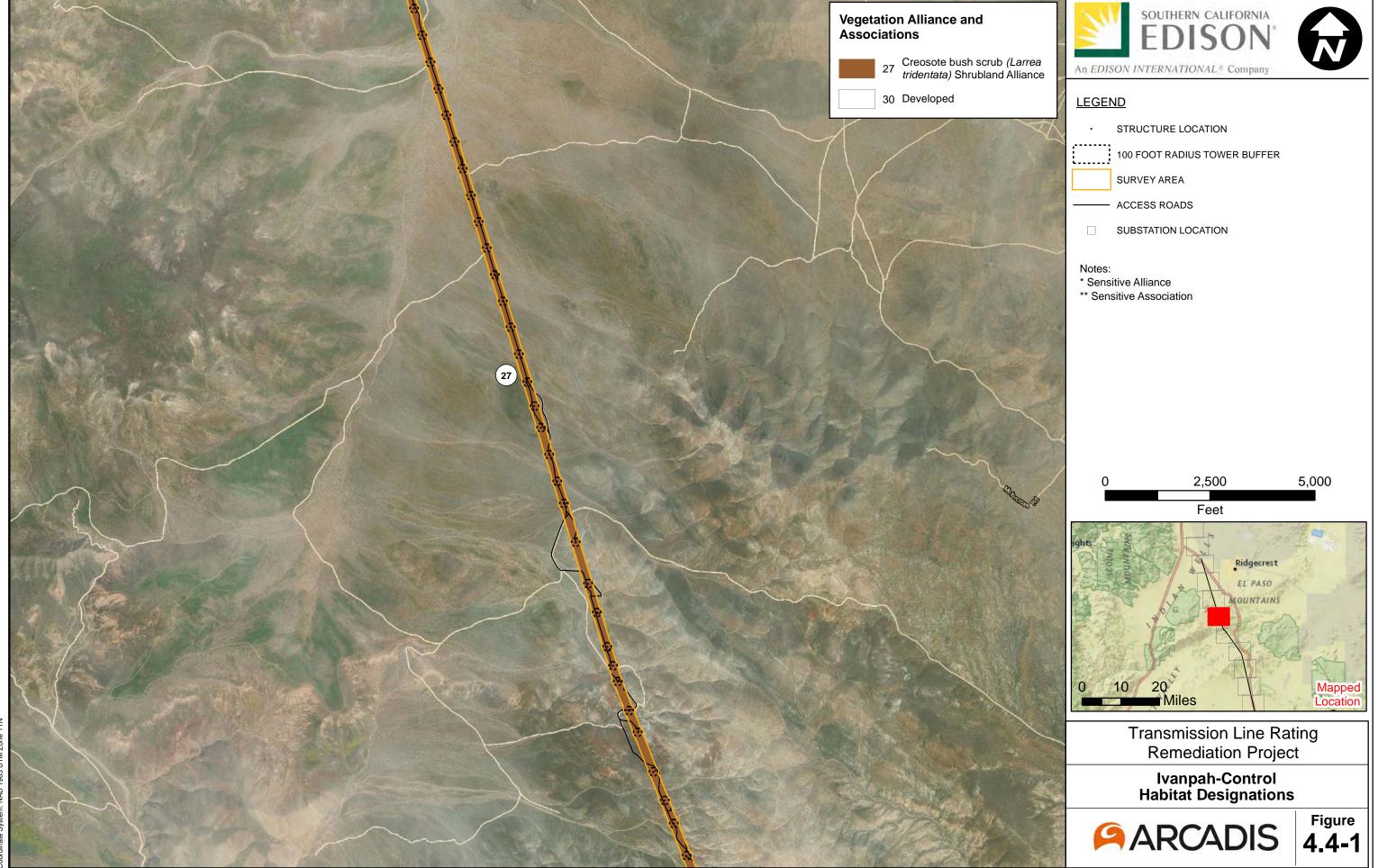
Ivanpah-Control Habitat Designations



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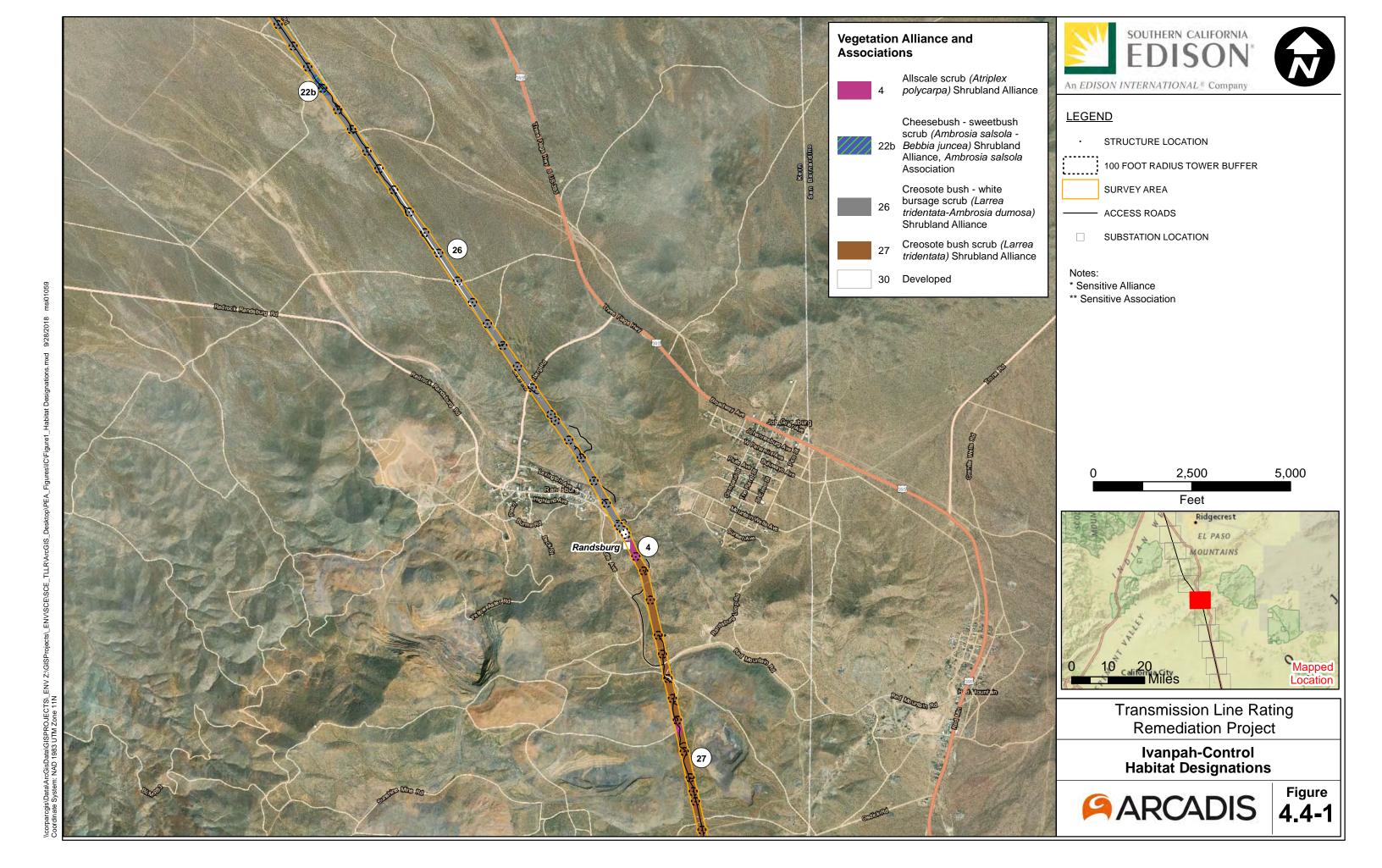


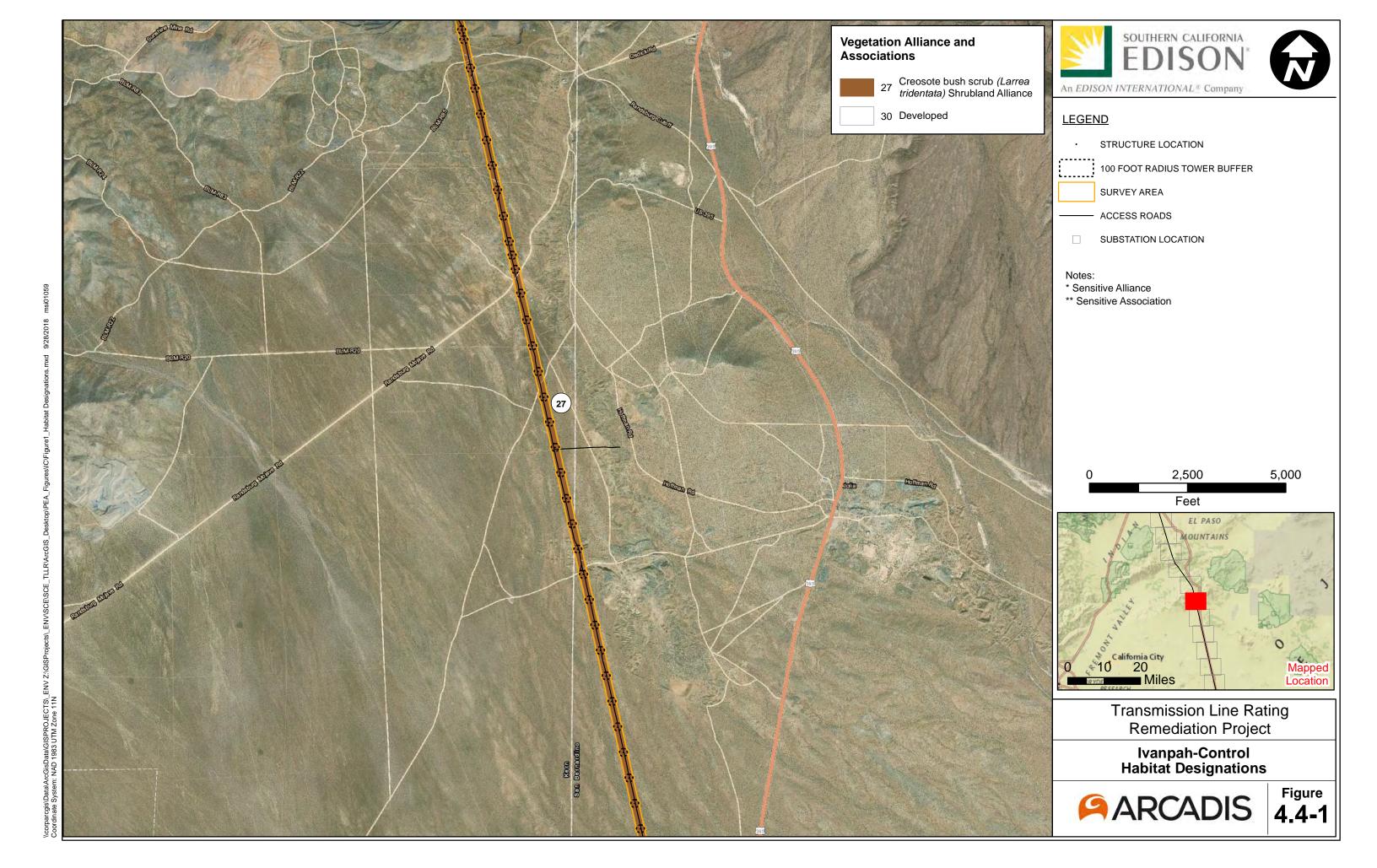


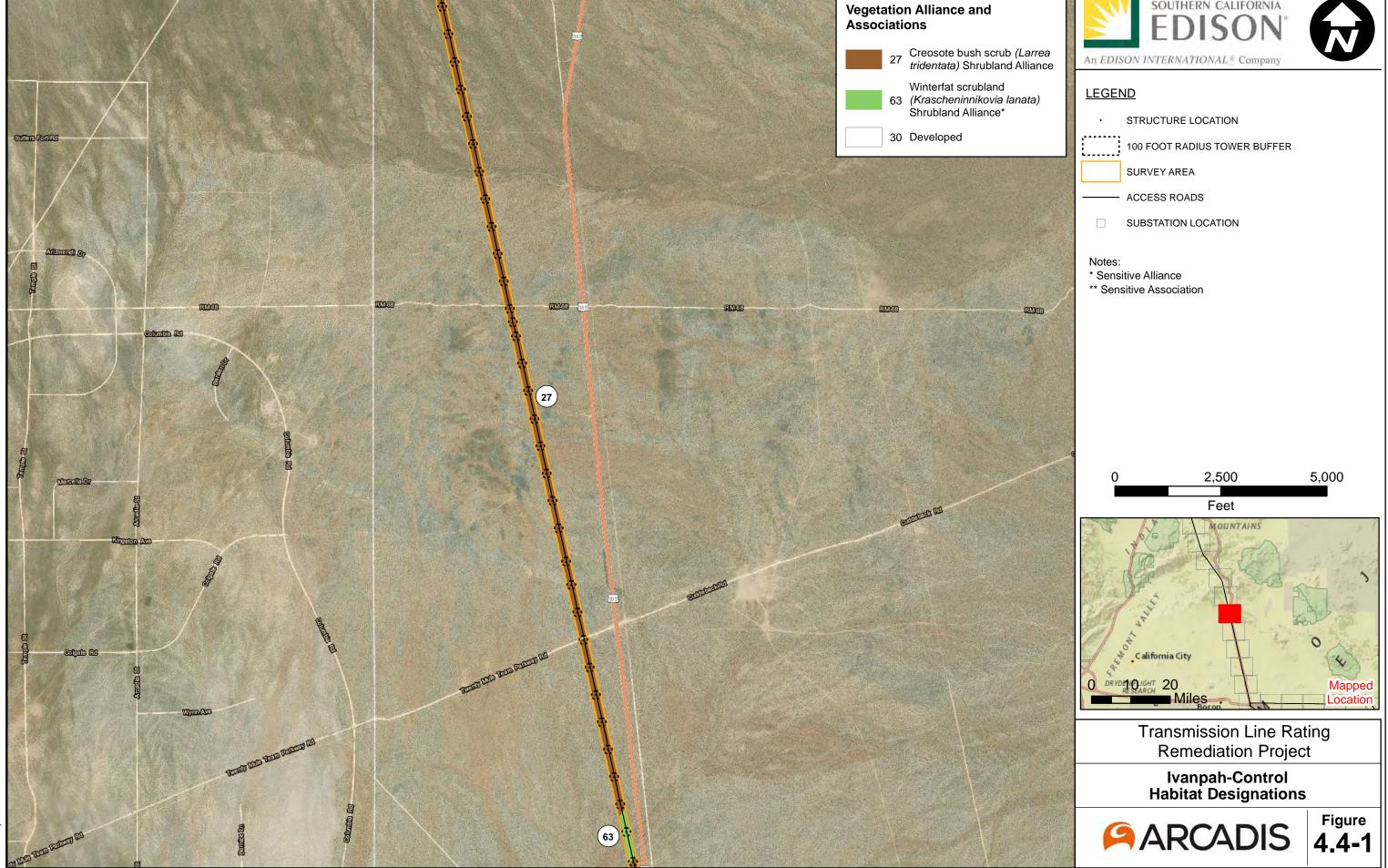




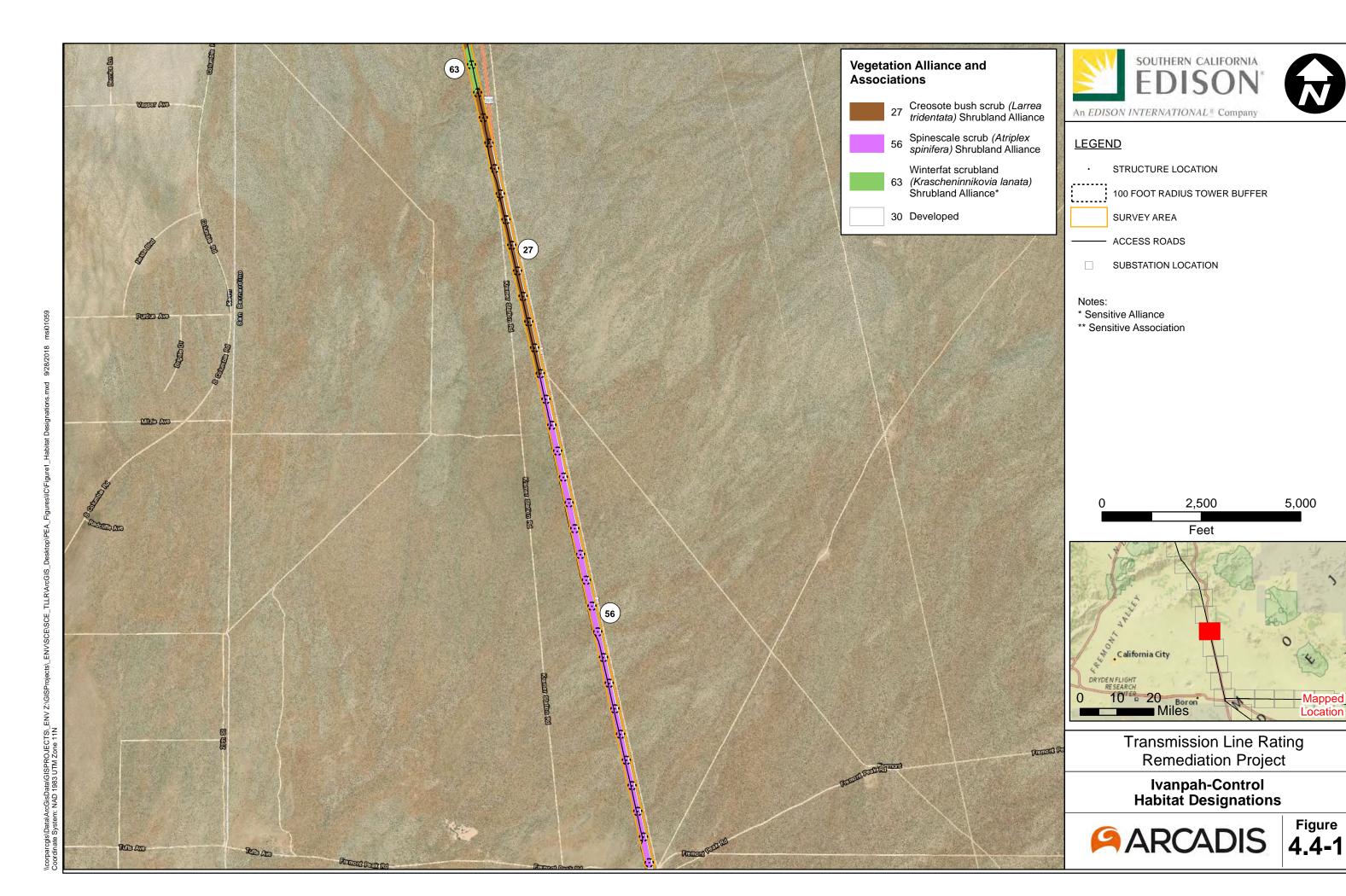
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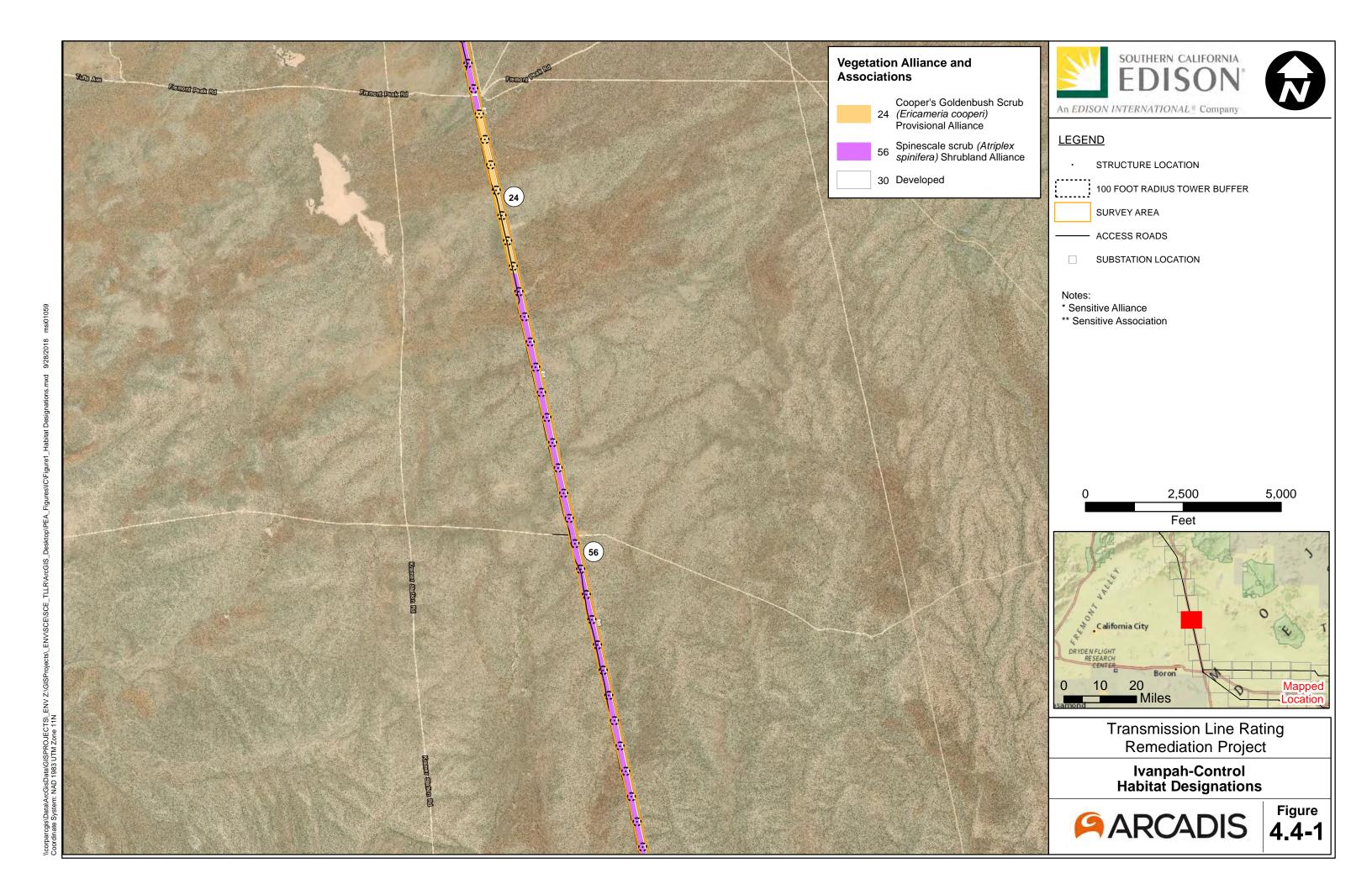


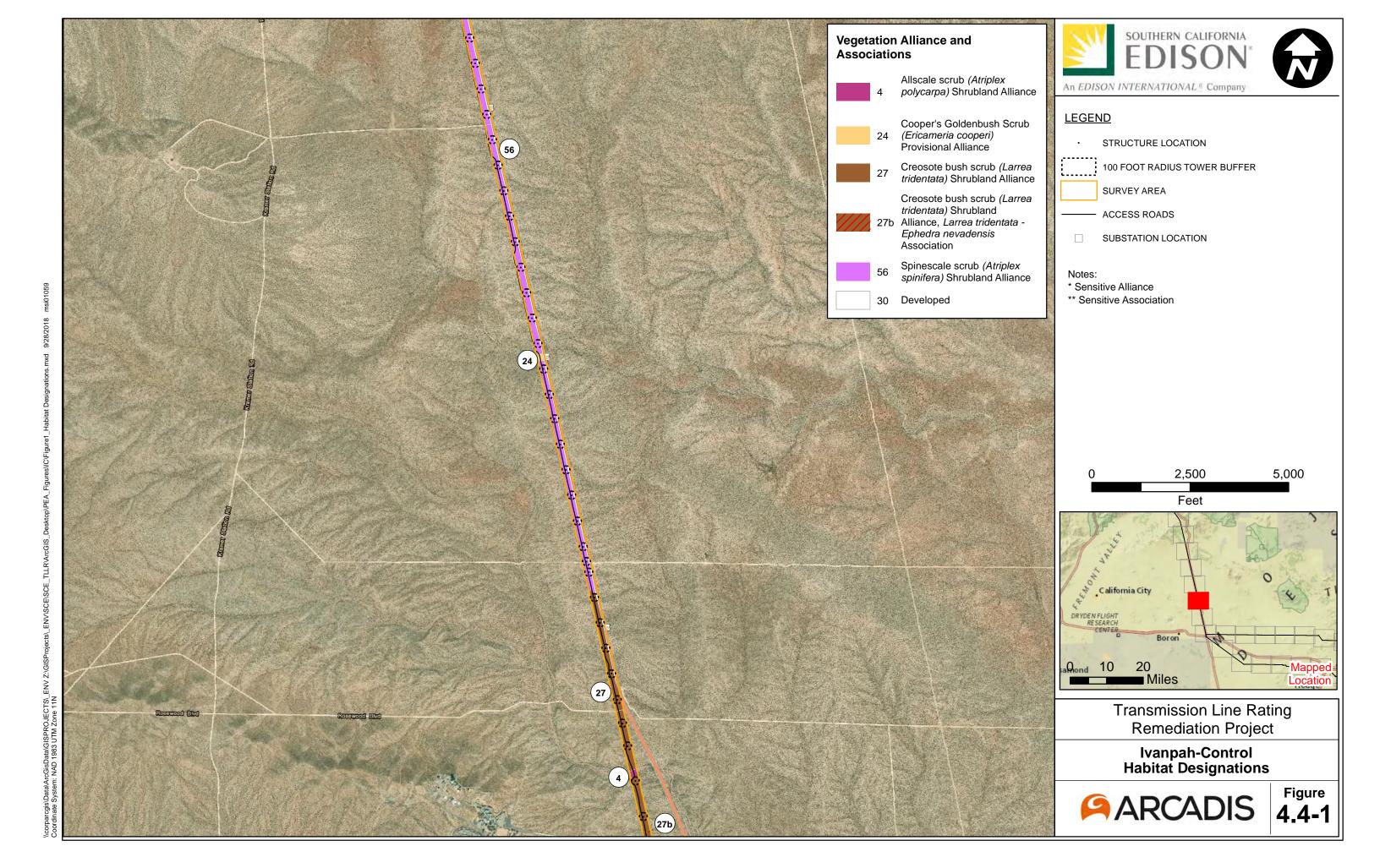


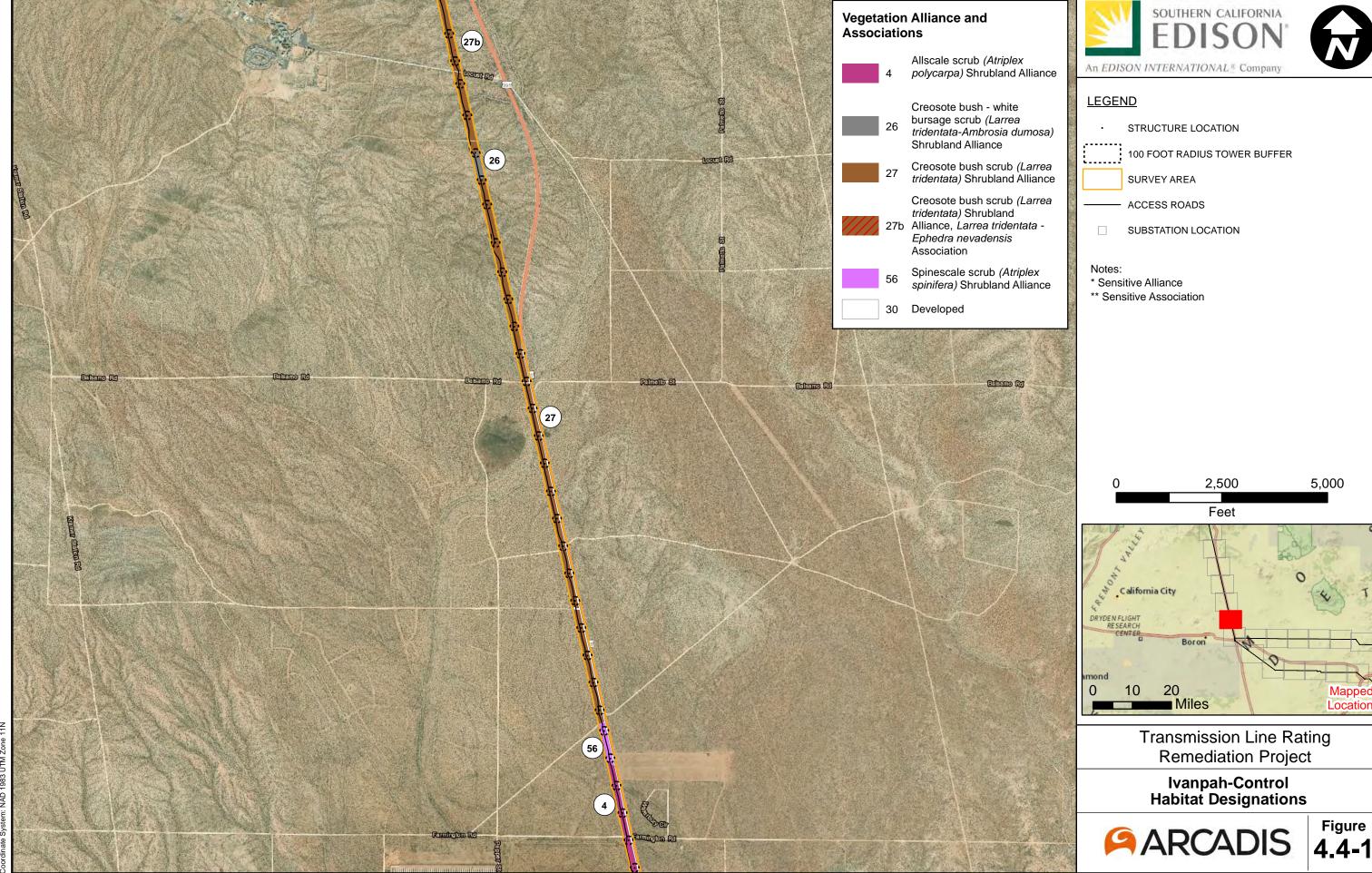


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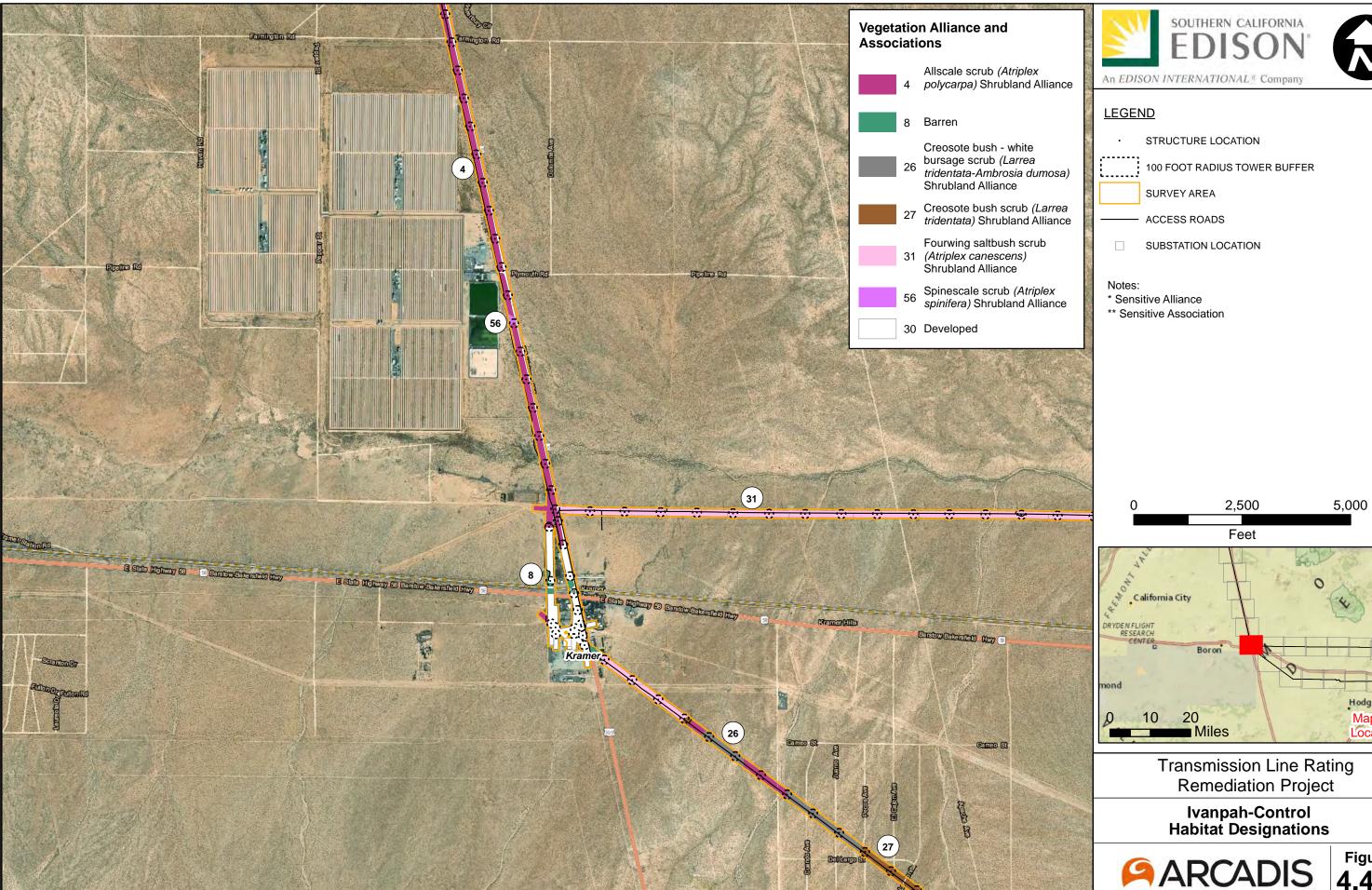
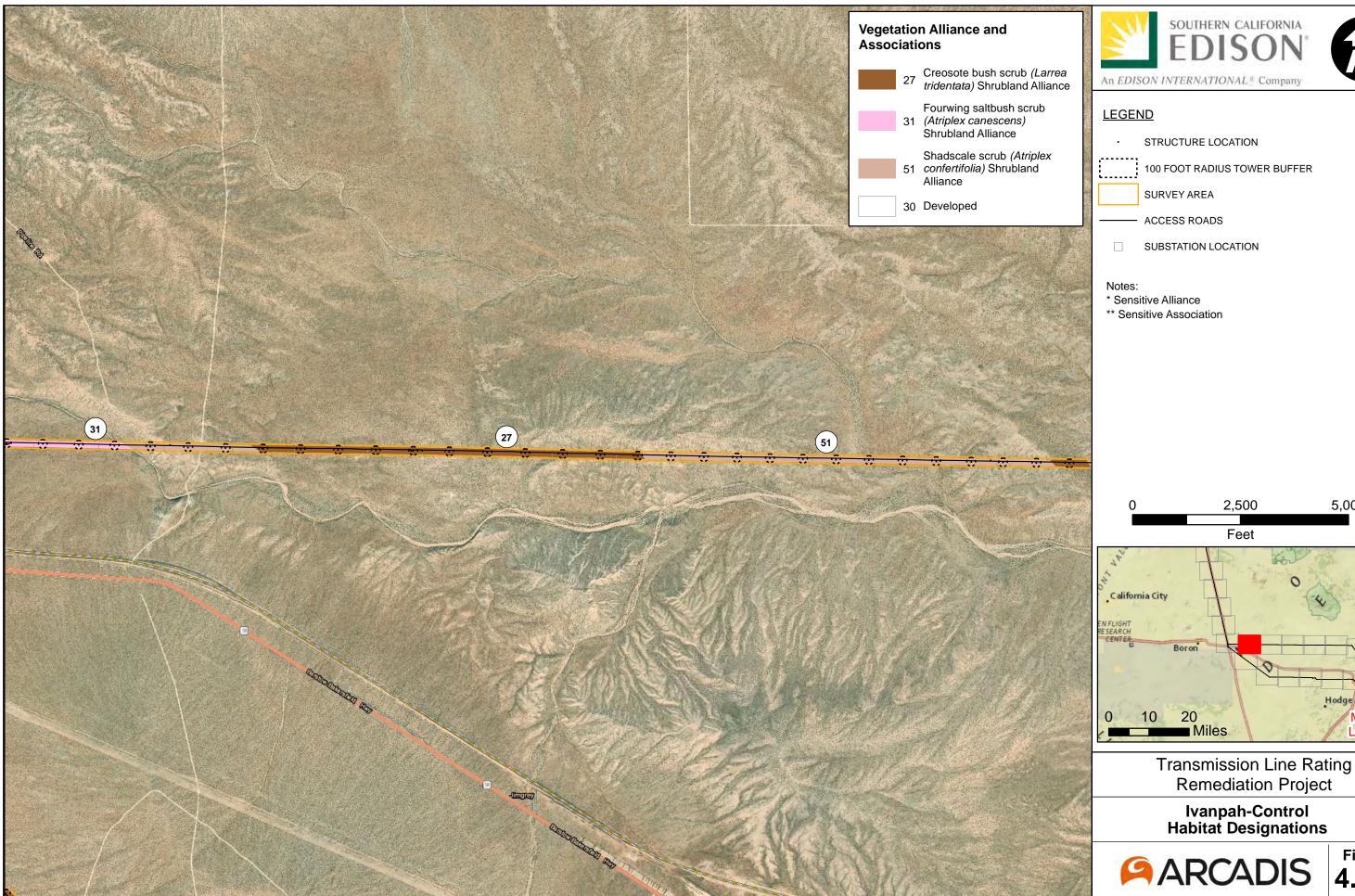


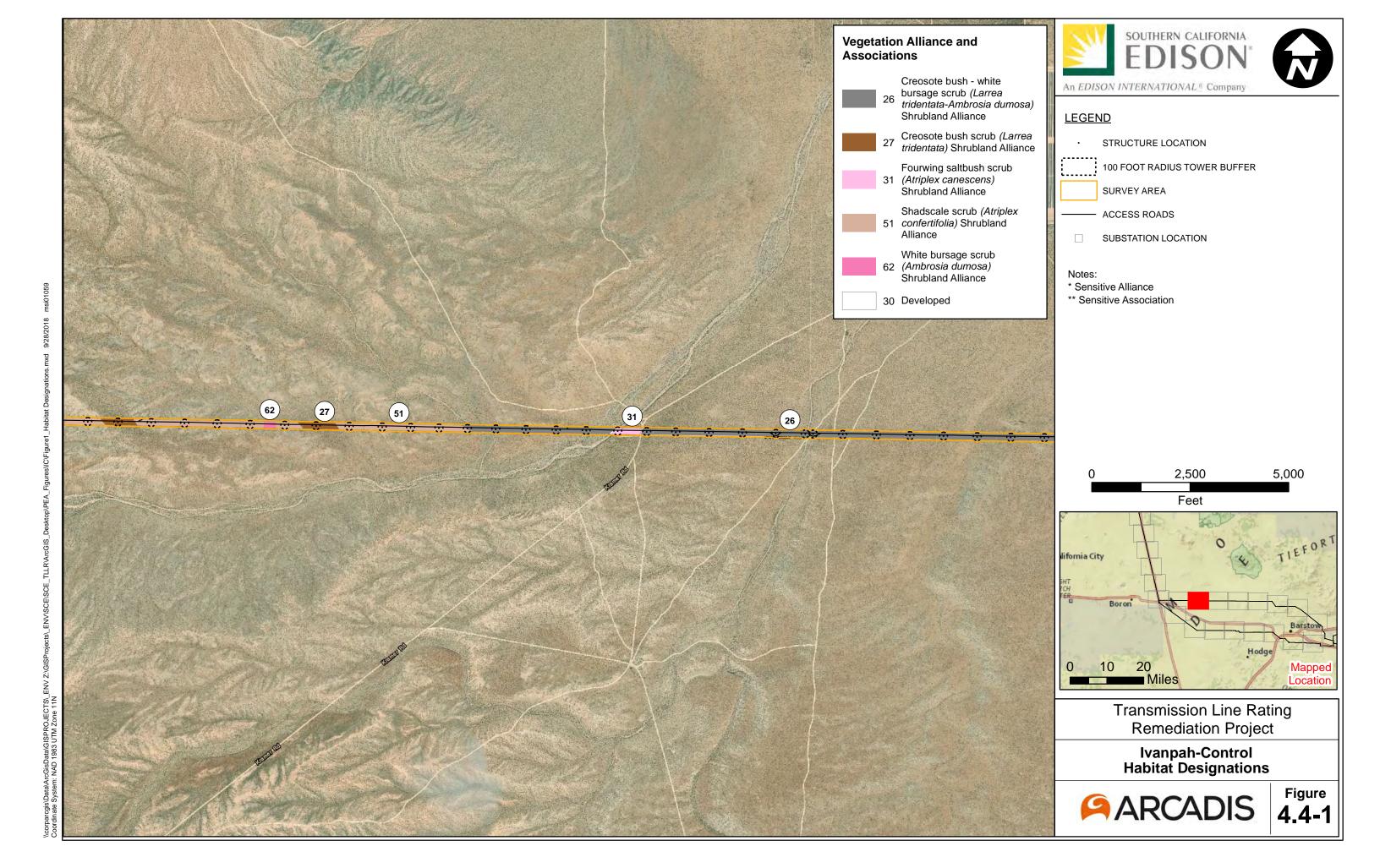
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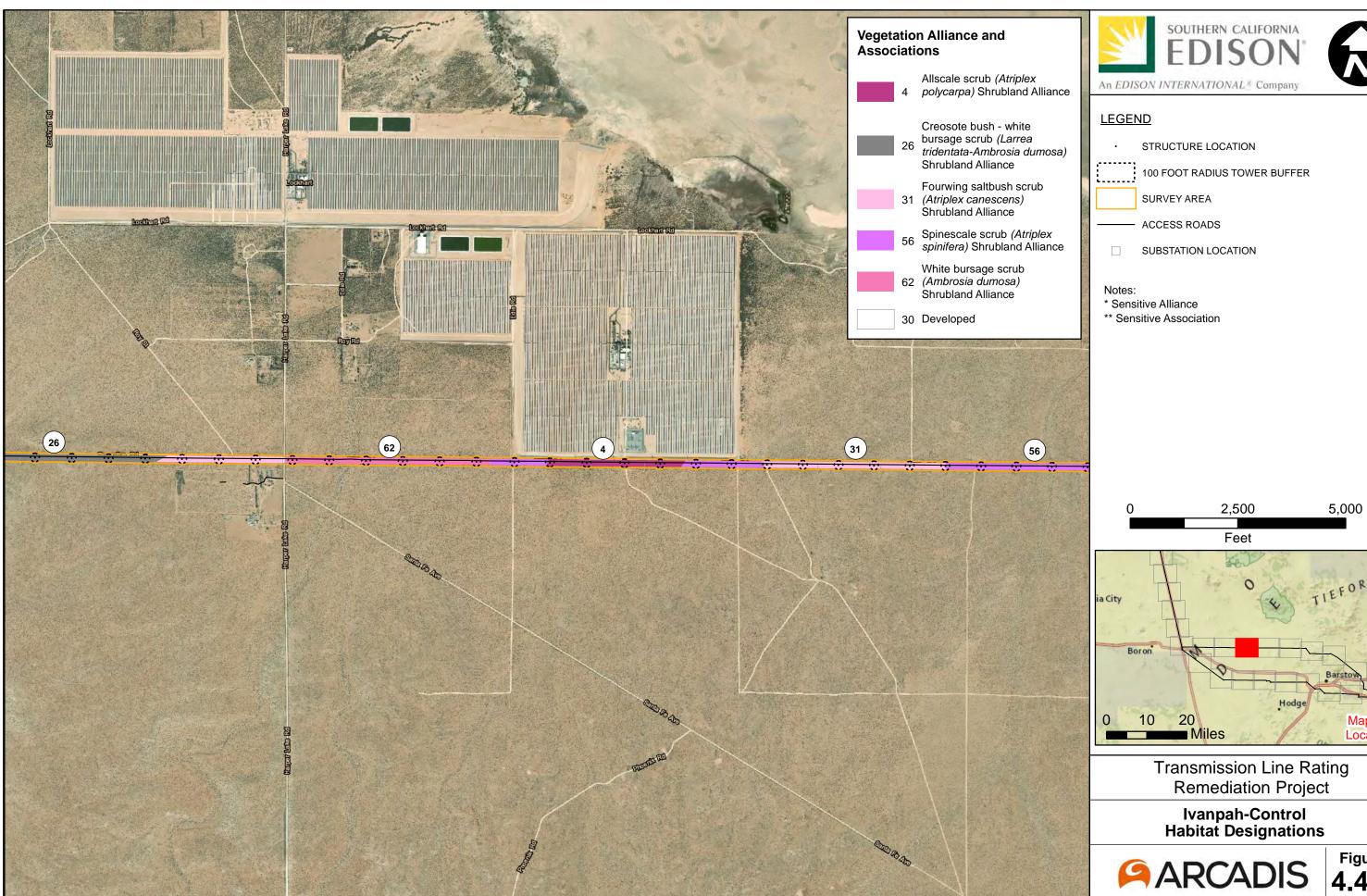
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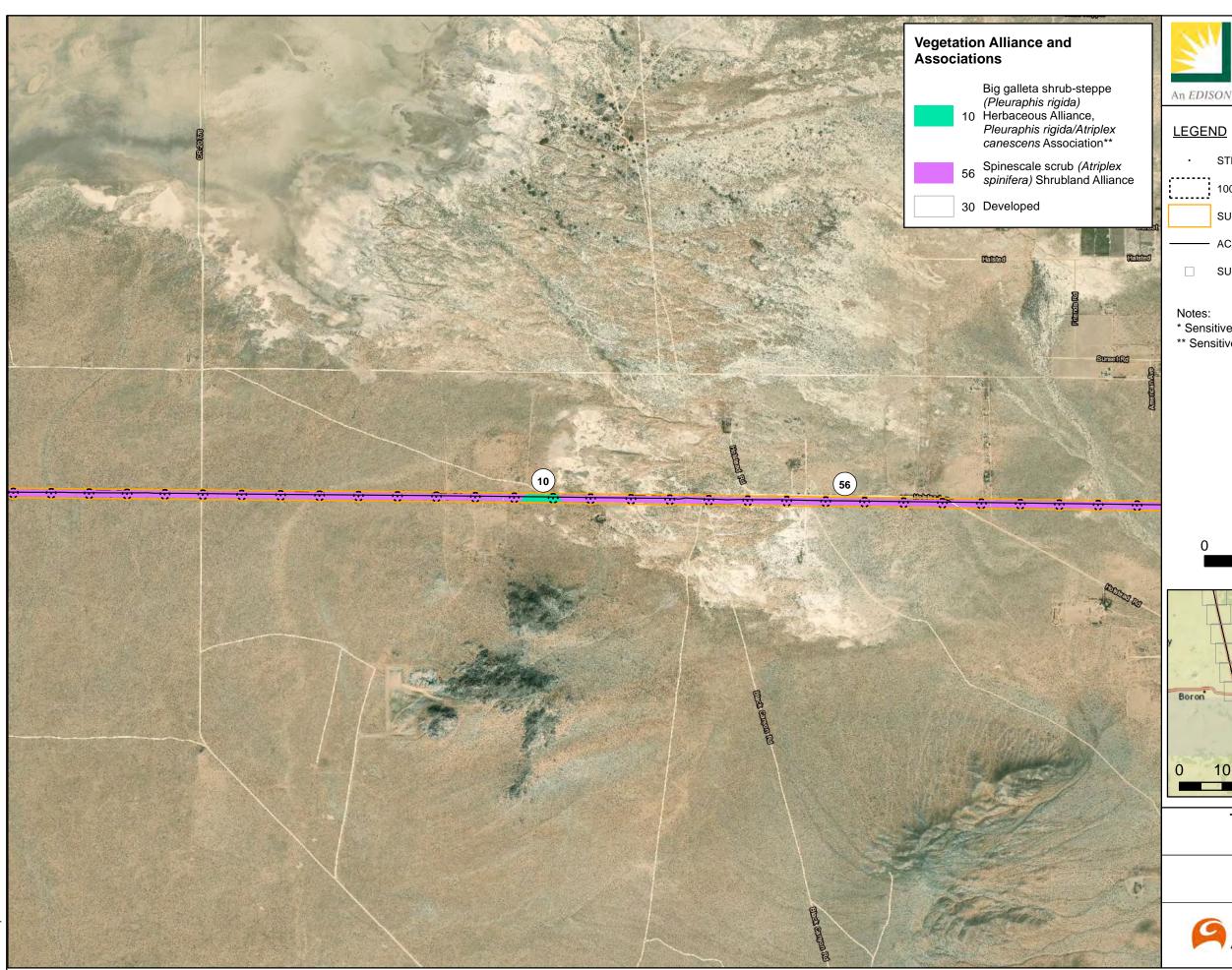


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STRUCTURE LOCATION

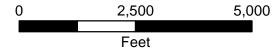
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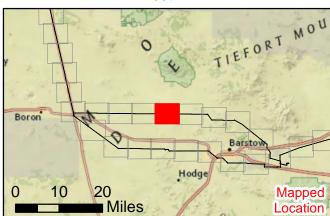
SURVEY AREA

ACCESS ROADS

☐ SUBSTATION LOCATION

- \* Sensitive Alliance
- \*\* Sensitive Association

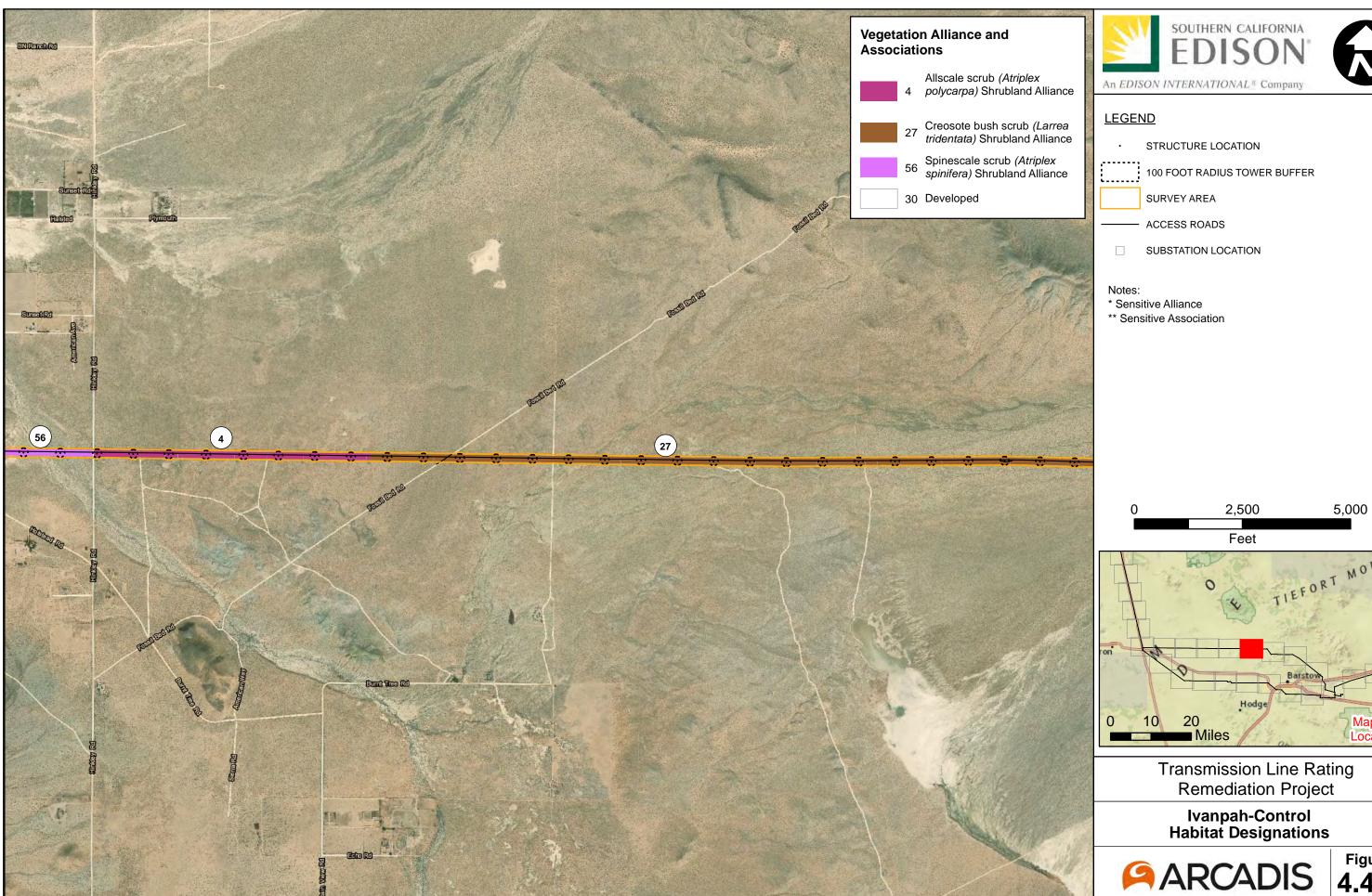


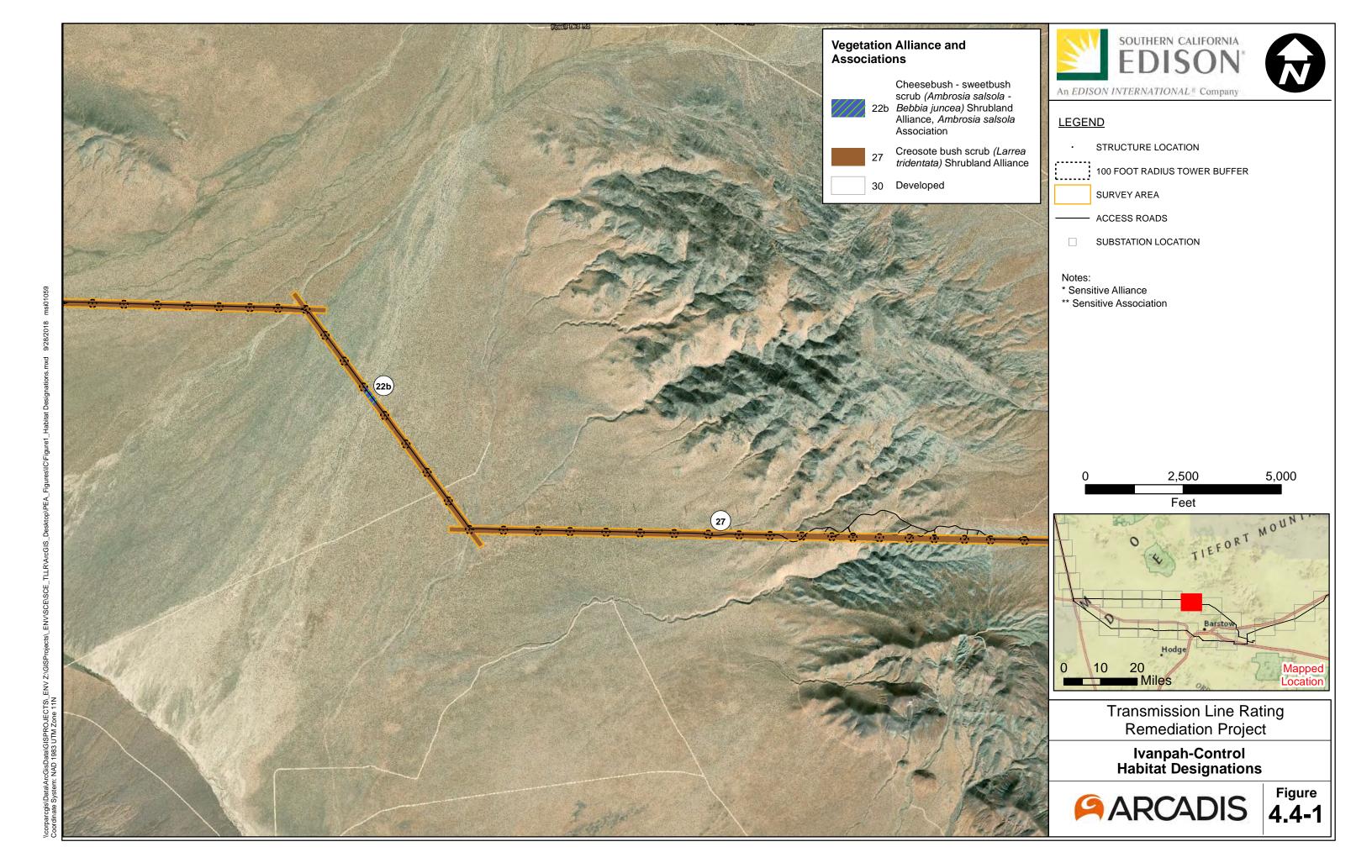


Transmission Line Rating Remediation Project

Ivanpah-Control Habitat Designations







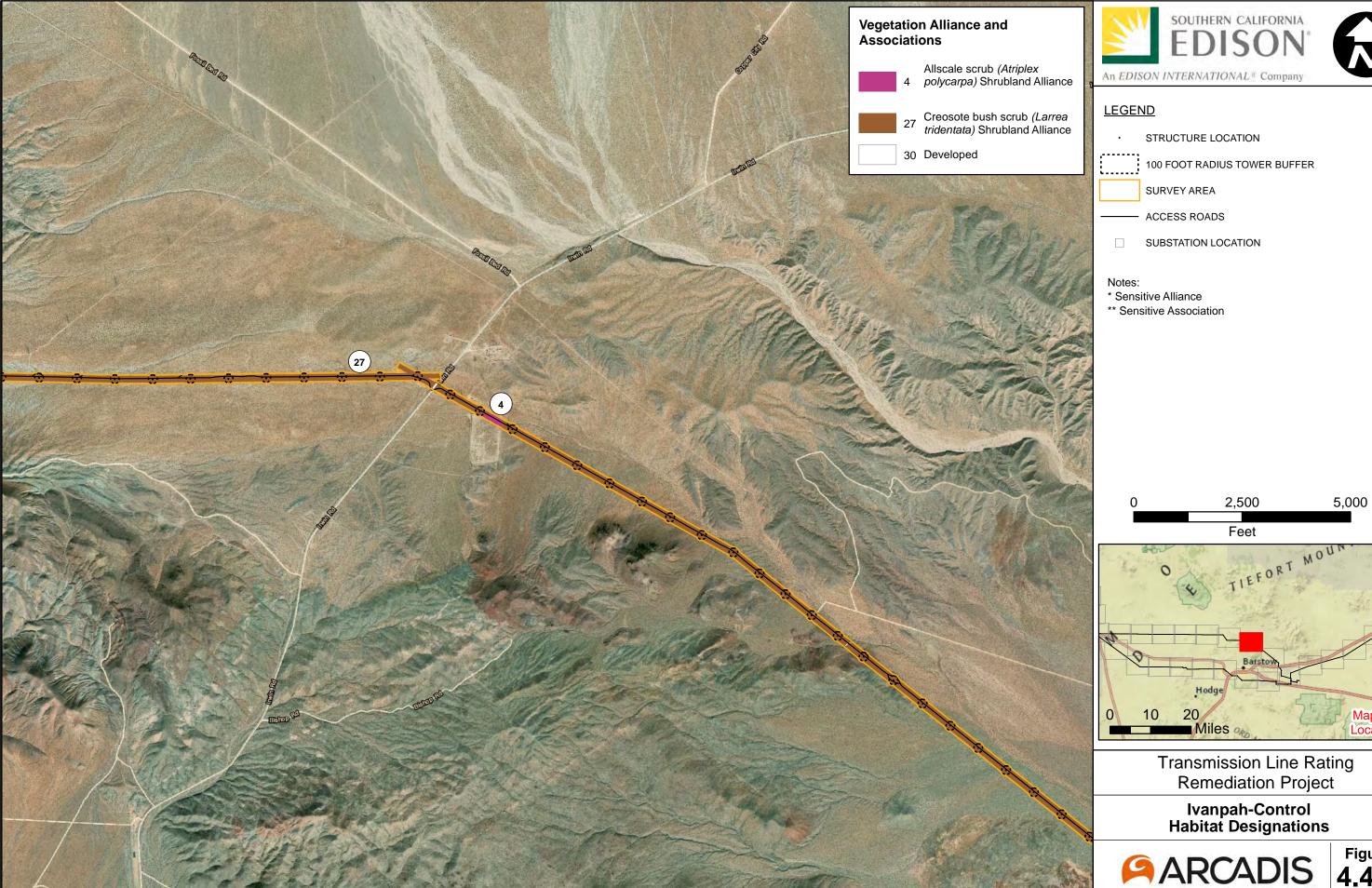
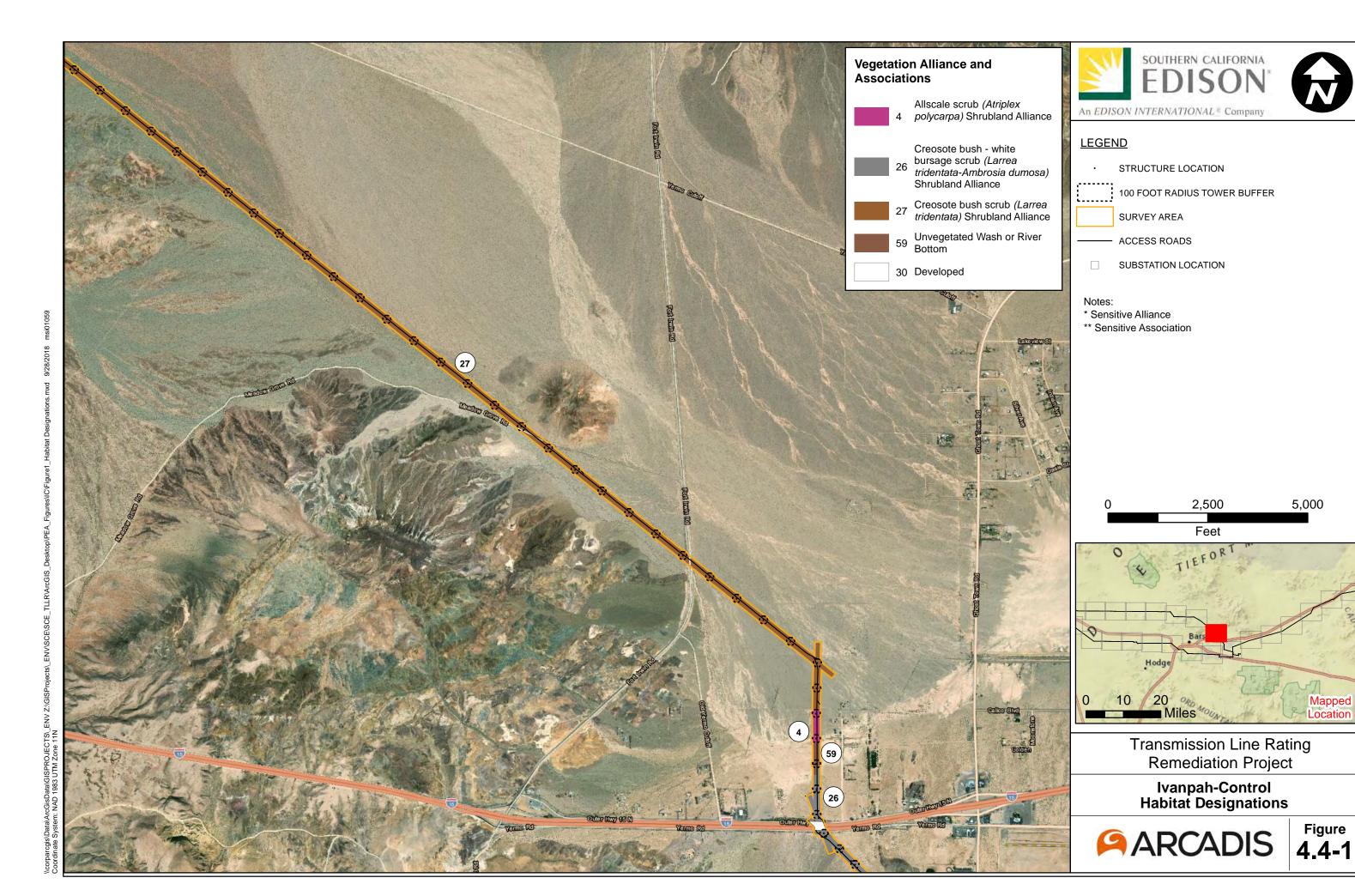
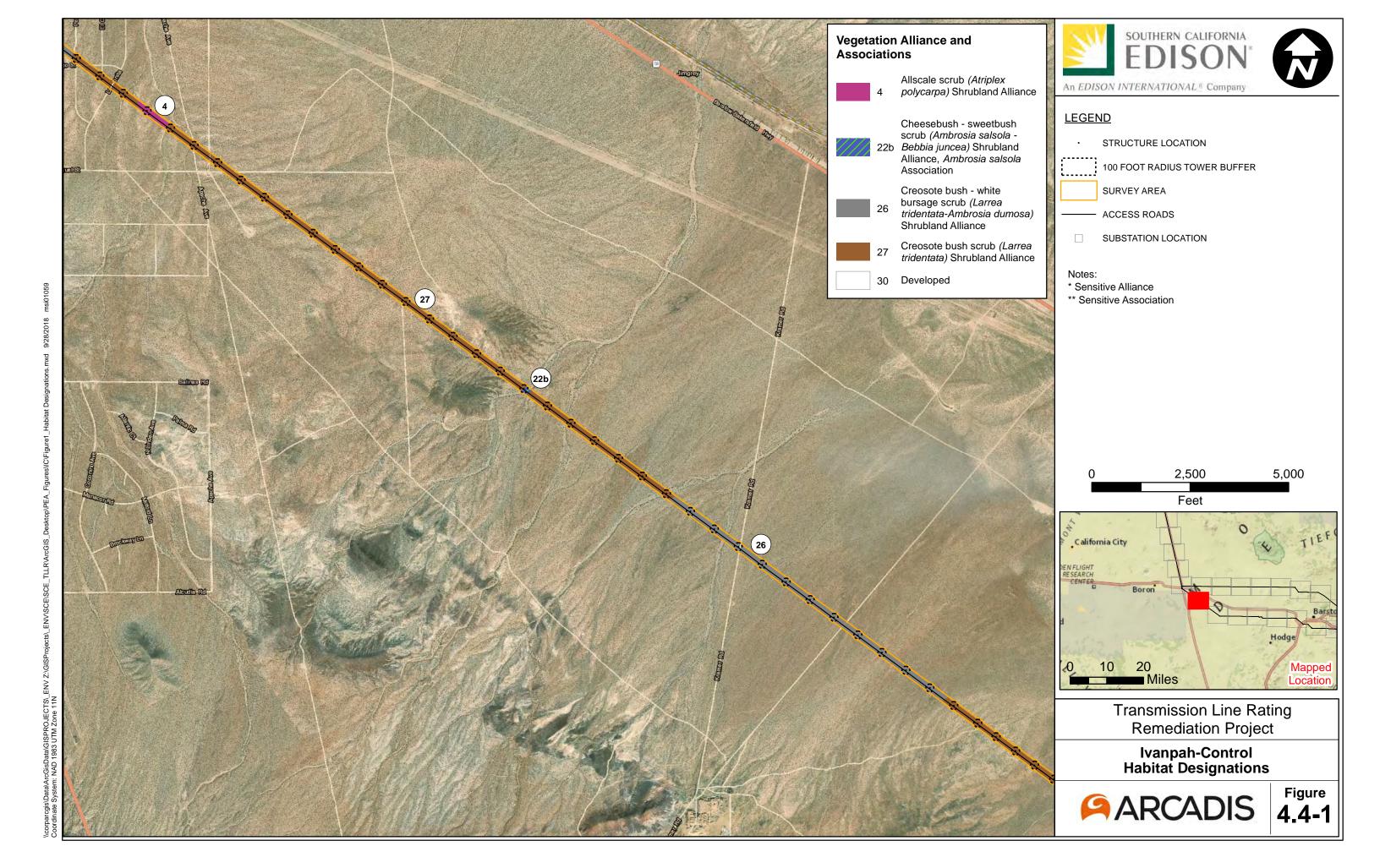
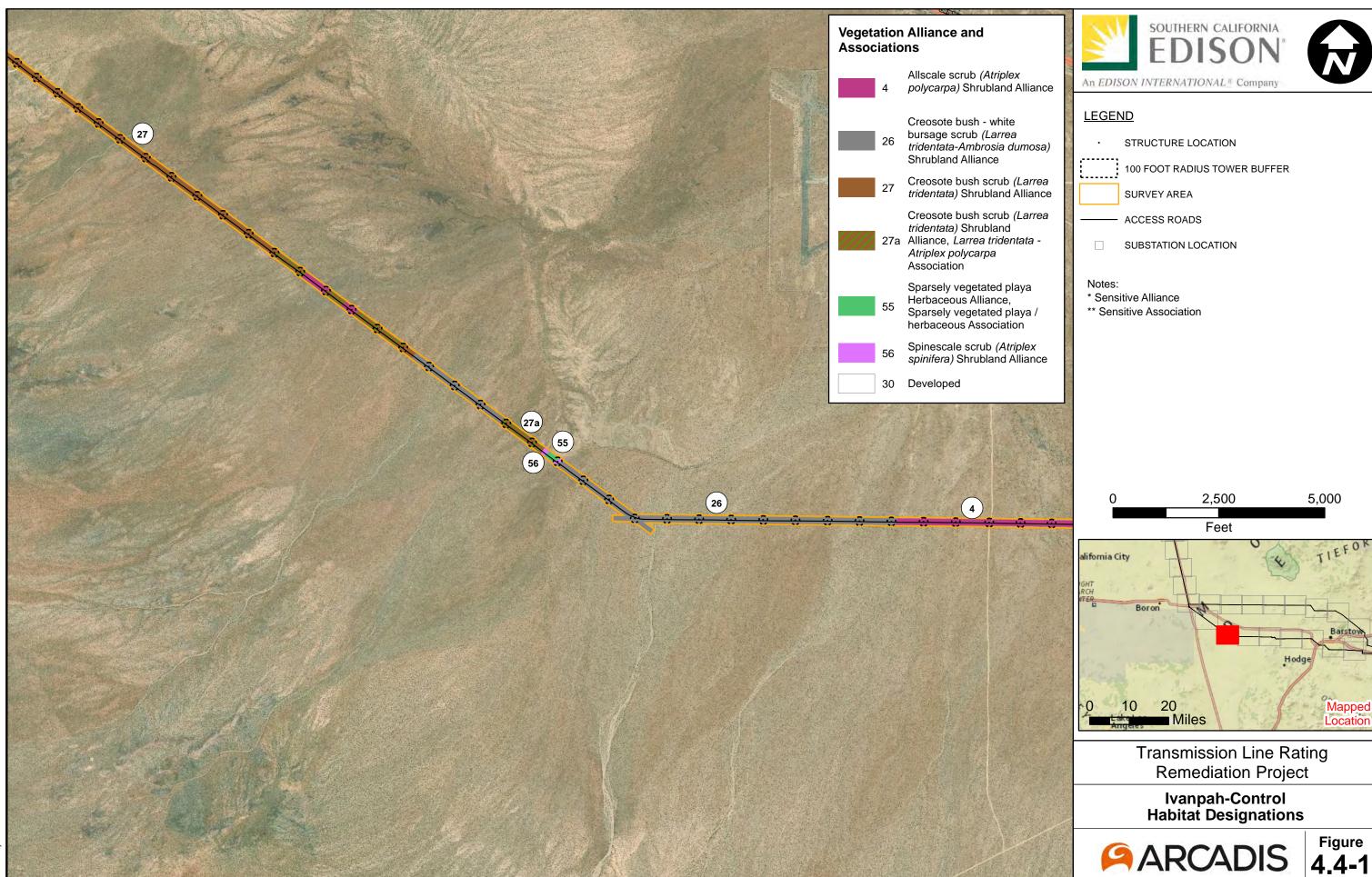


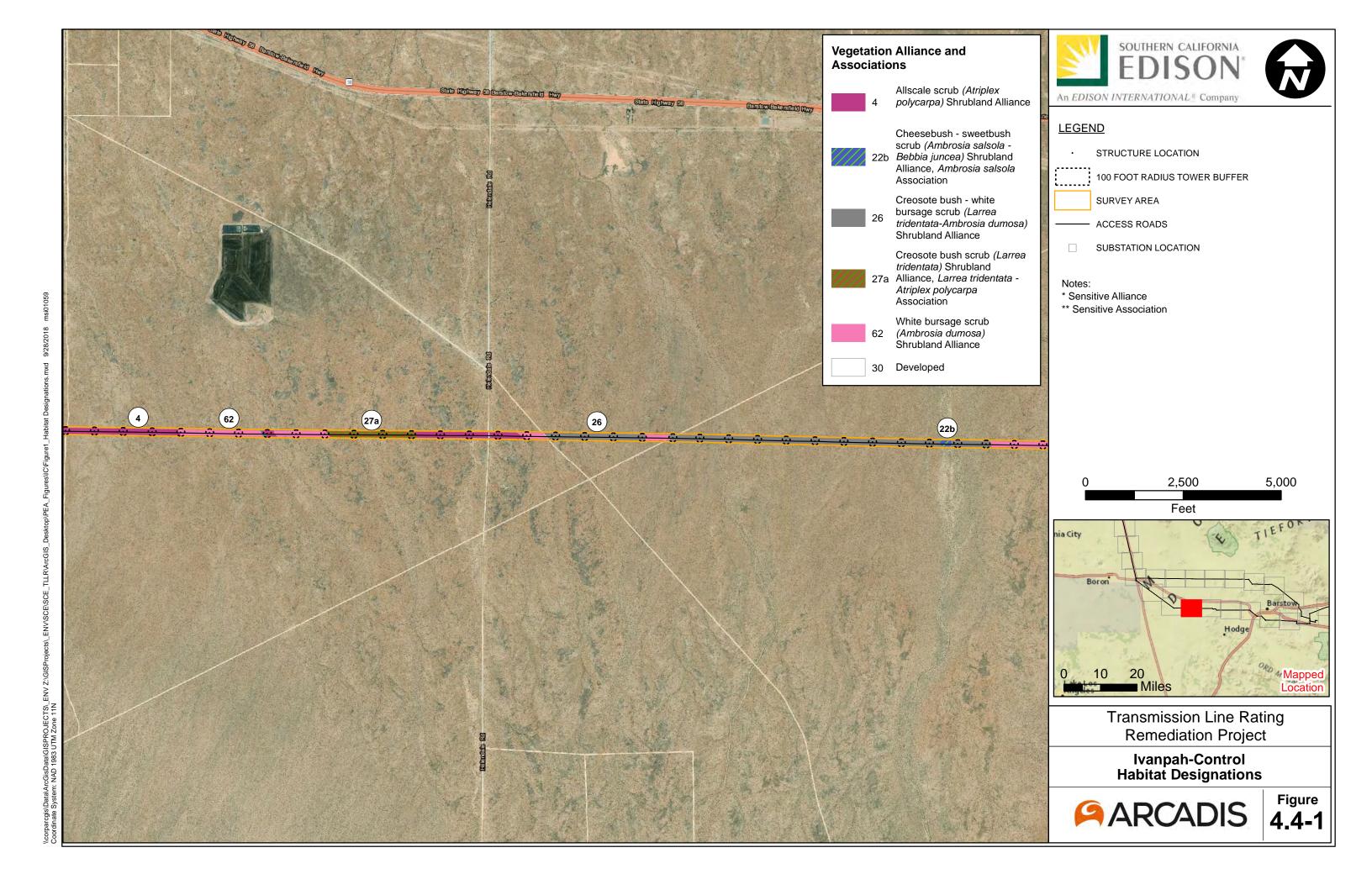
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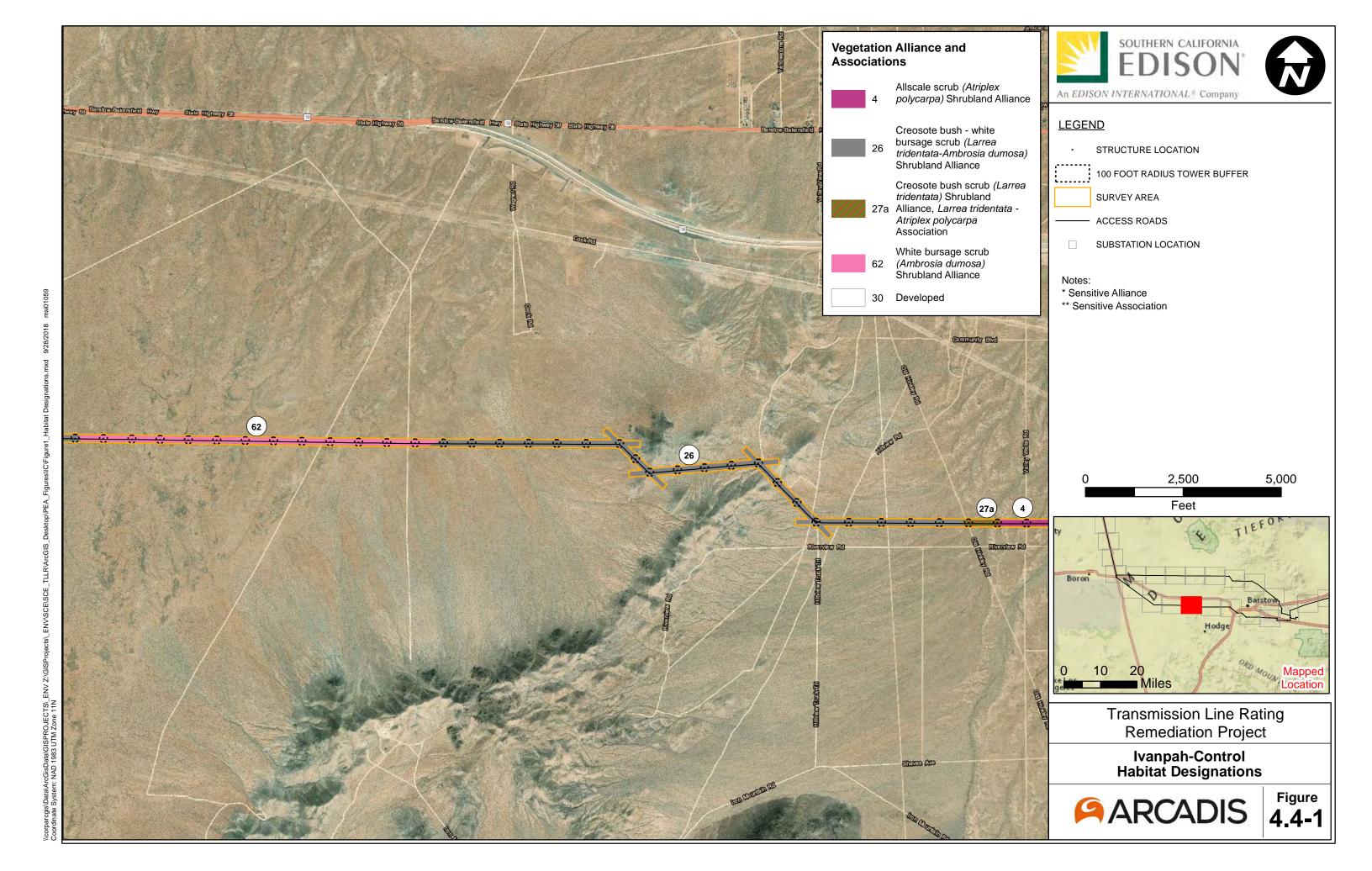
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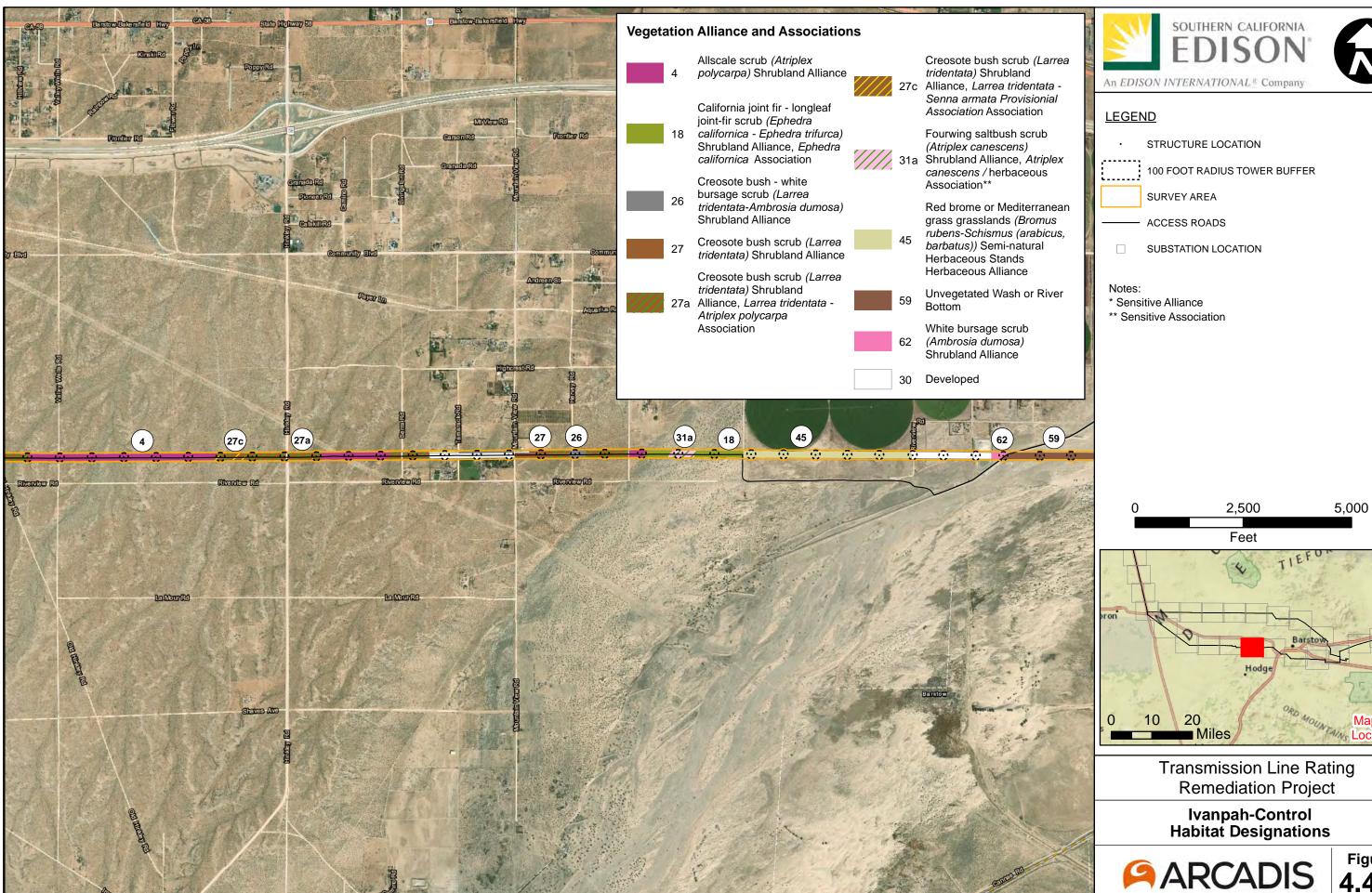


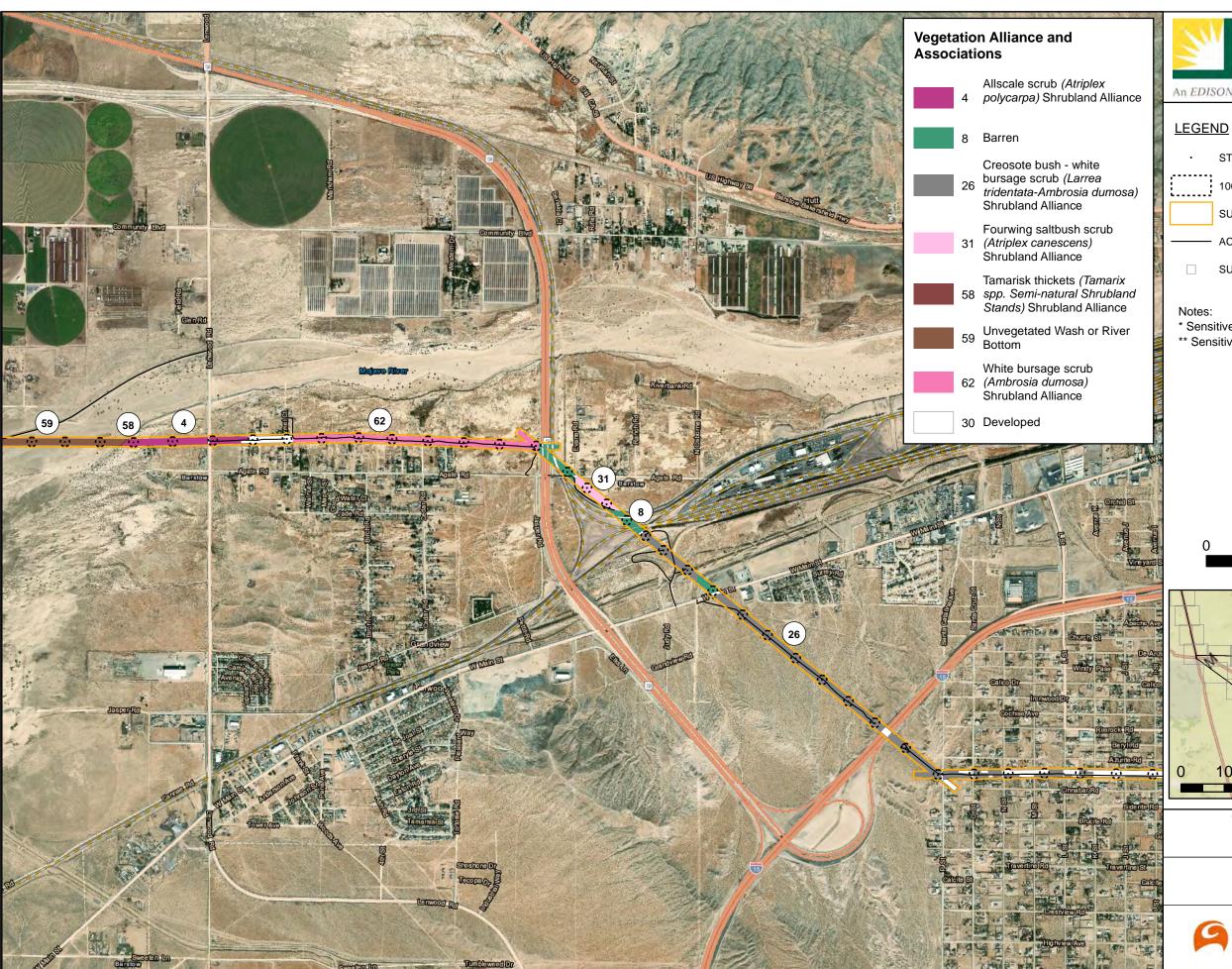














STRUCTURE LOCATION

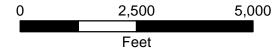
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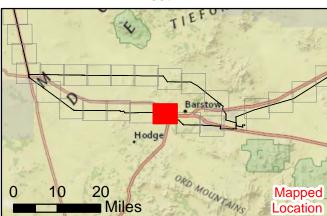
SURVEY AREA

ACCESS ROADS

SUBSTATION LOCATION

- \* Sensitive Alliance
- \*\* Sensitive Association





Transmission Line Rating Remediation Project

Ivanpah-Control Habitat Designations



**Figure** 4.4-1

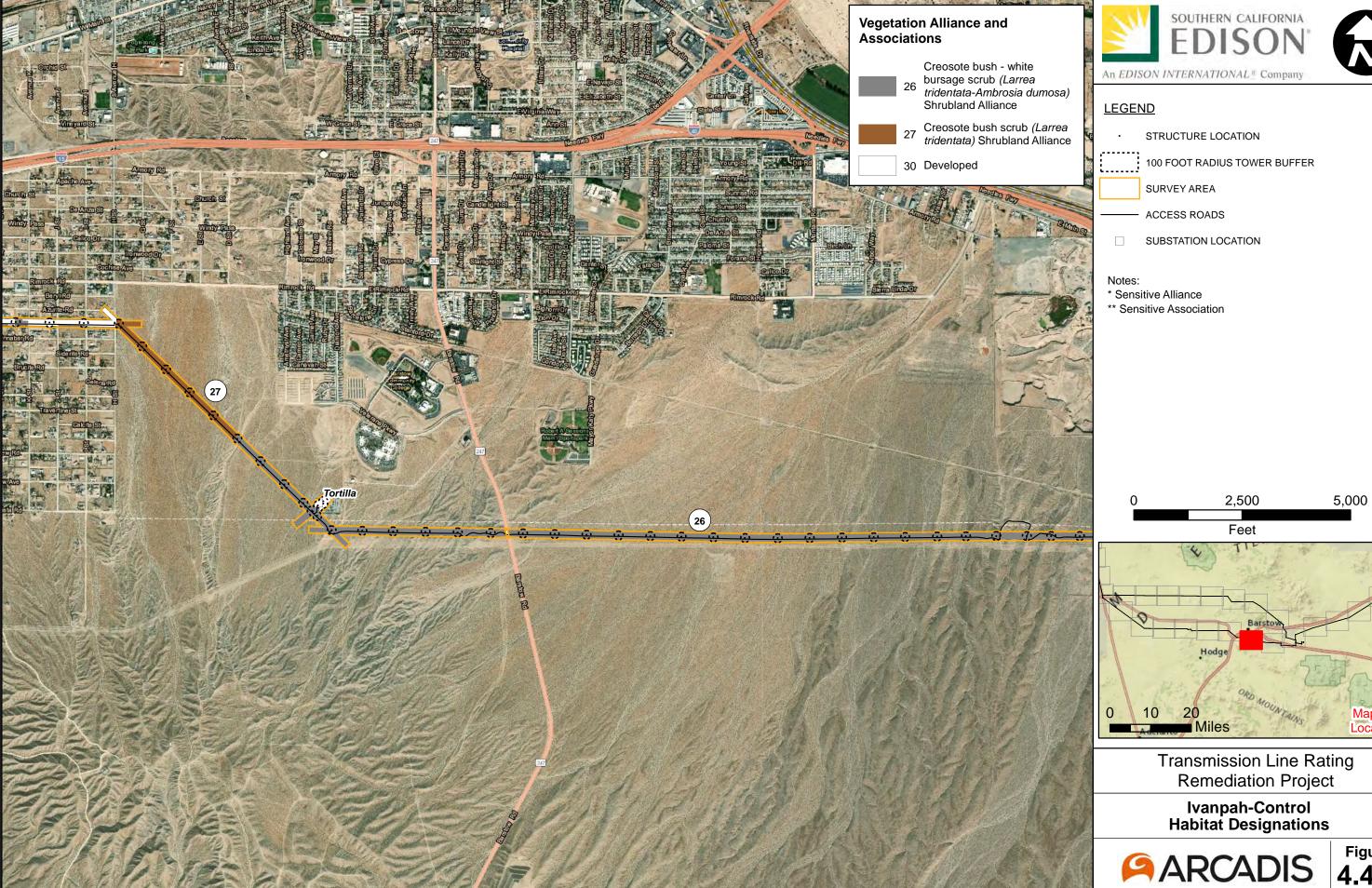
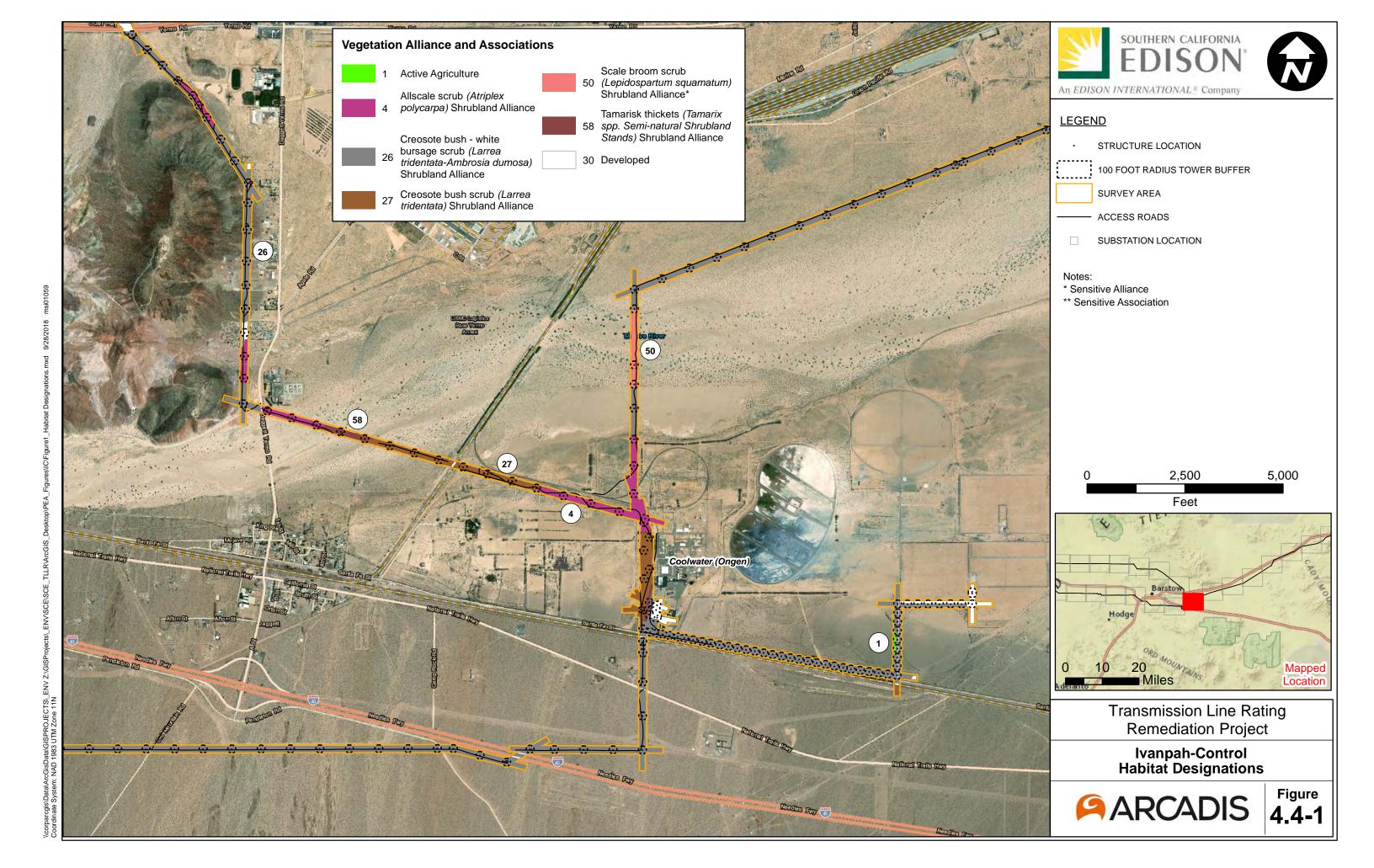
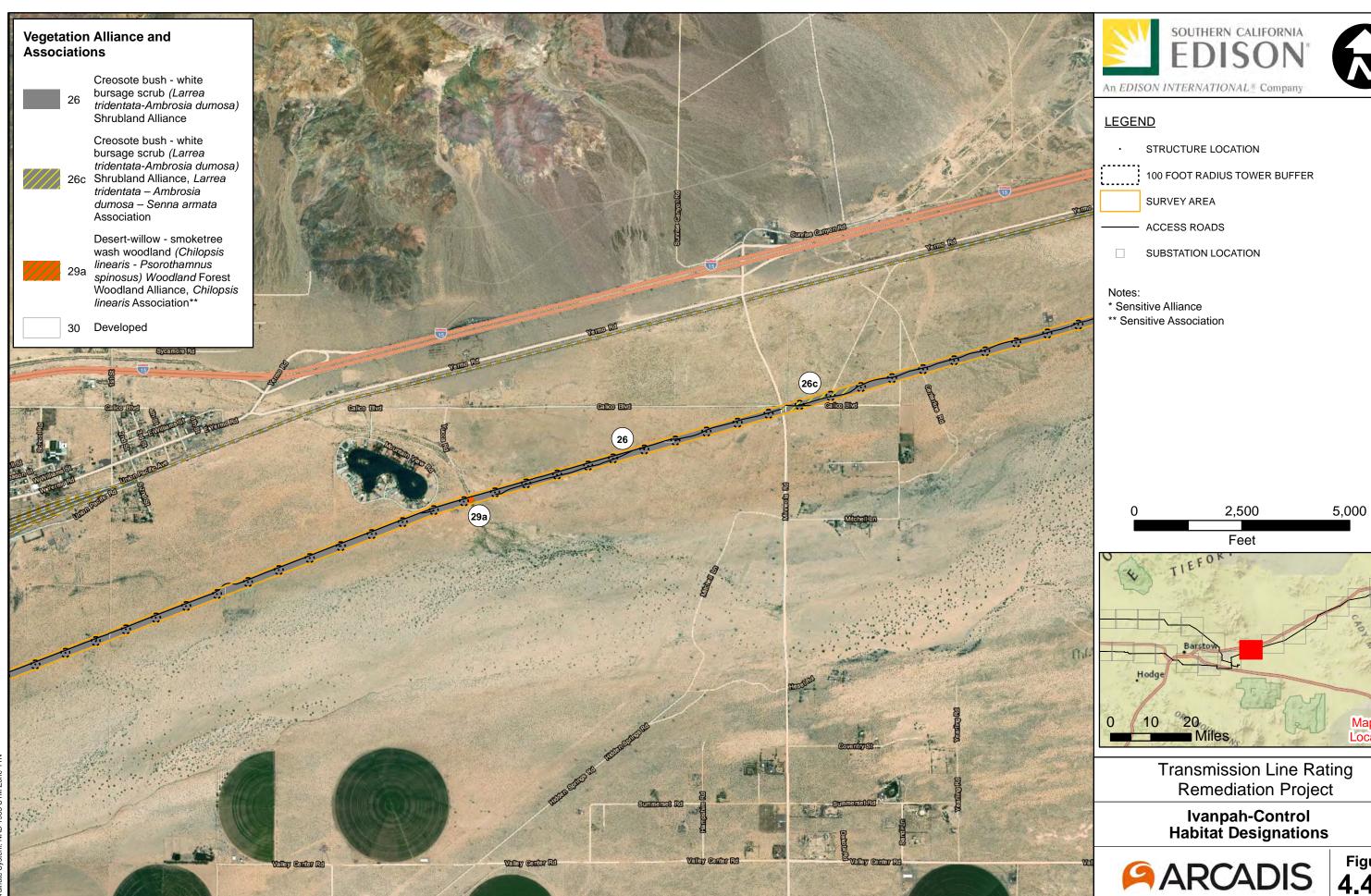




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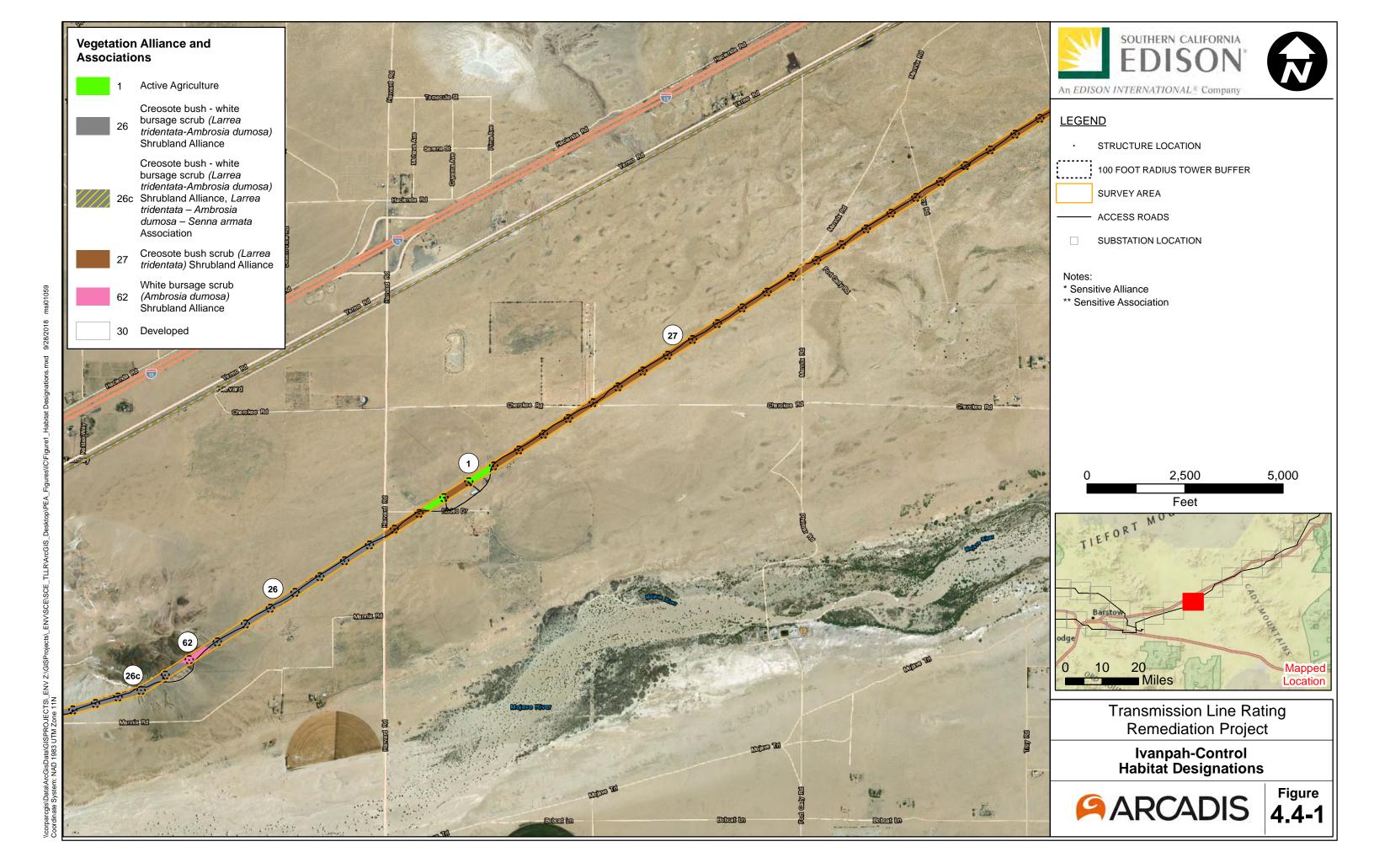


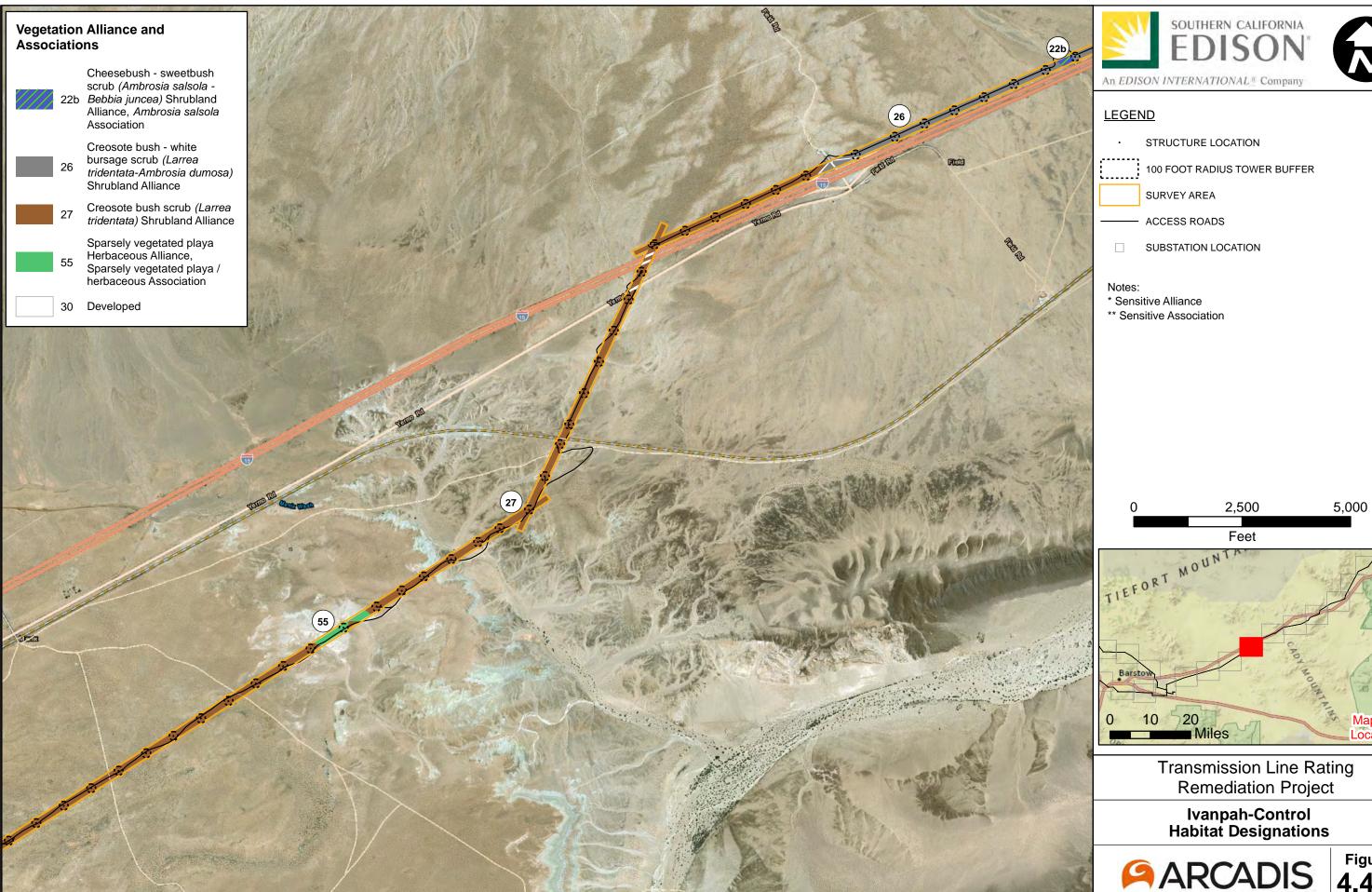


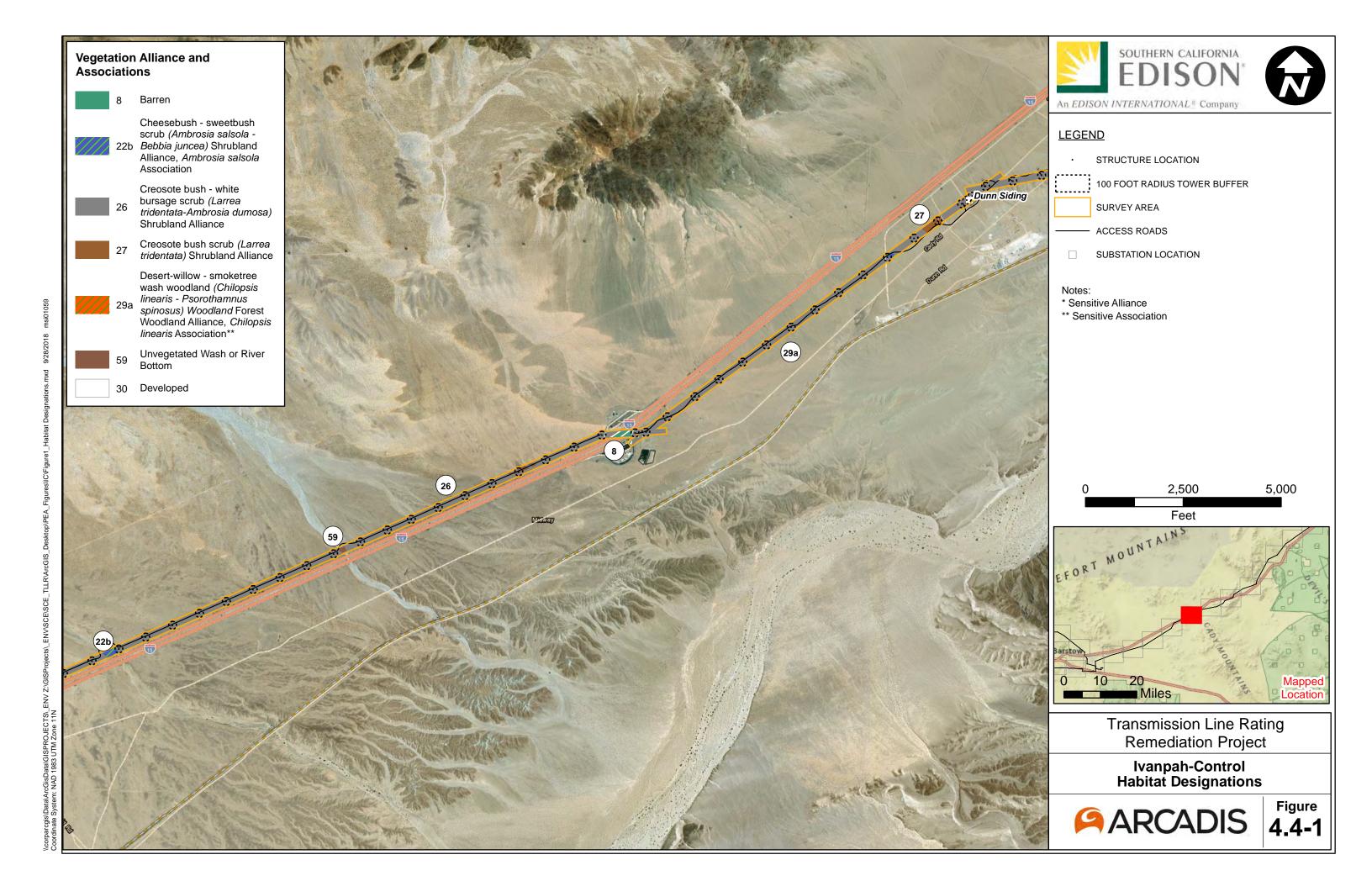
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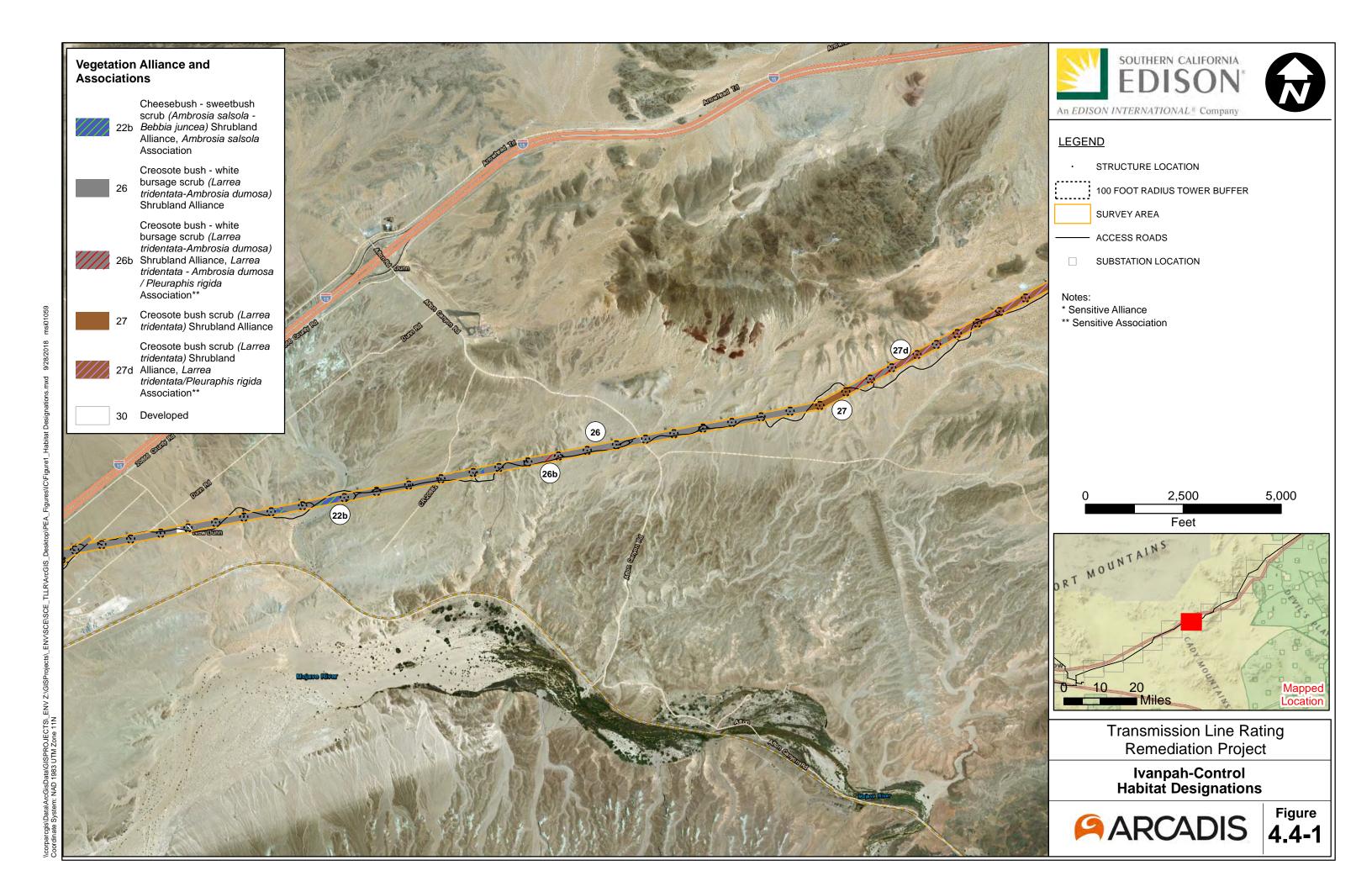
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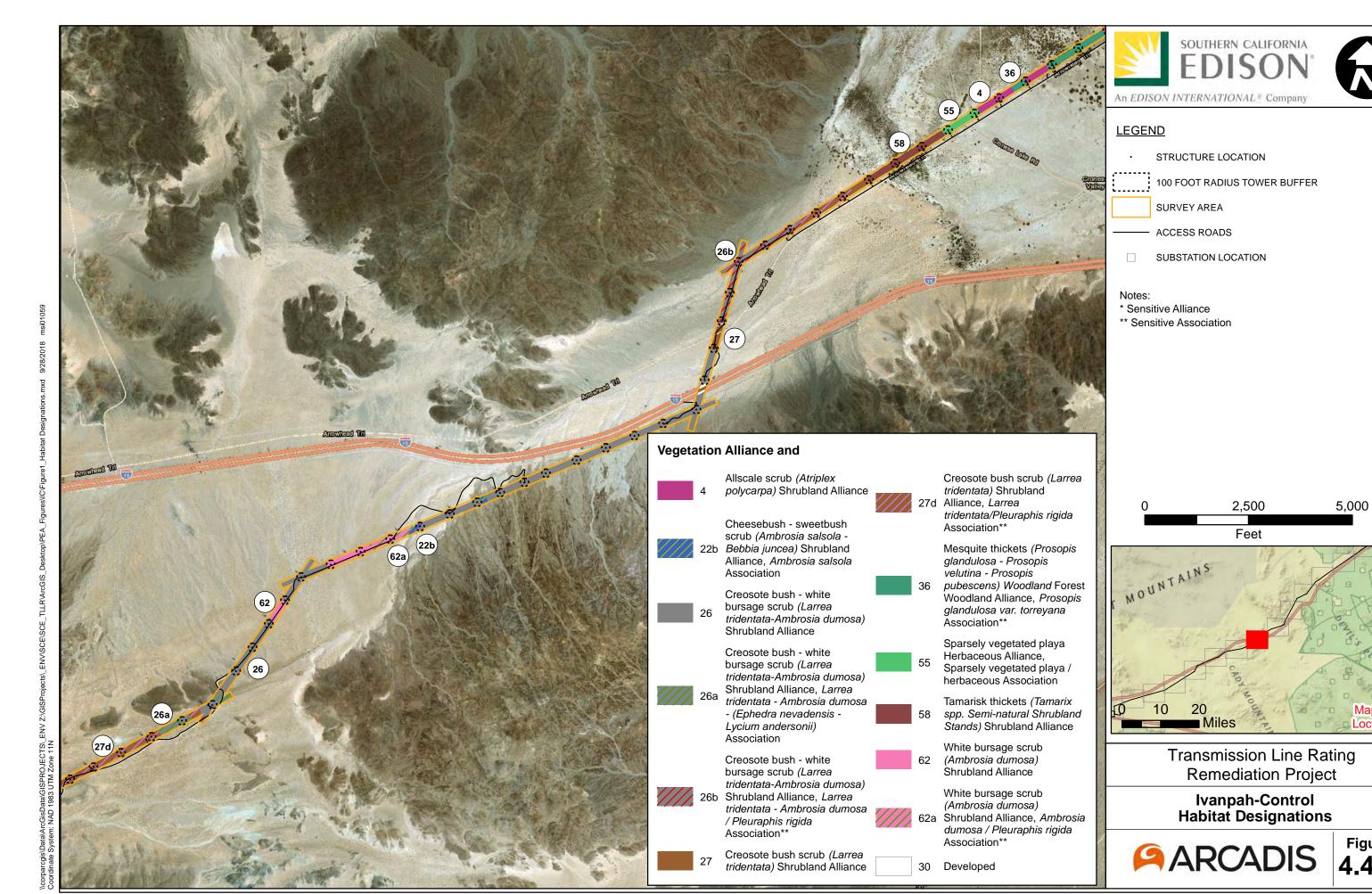


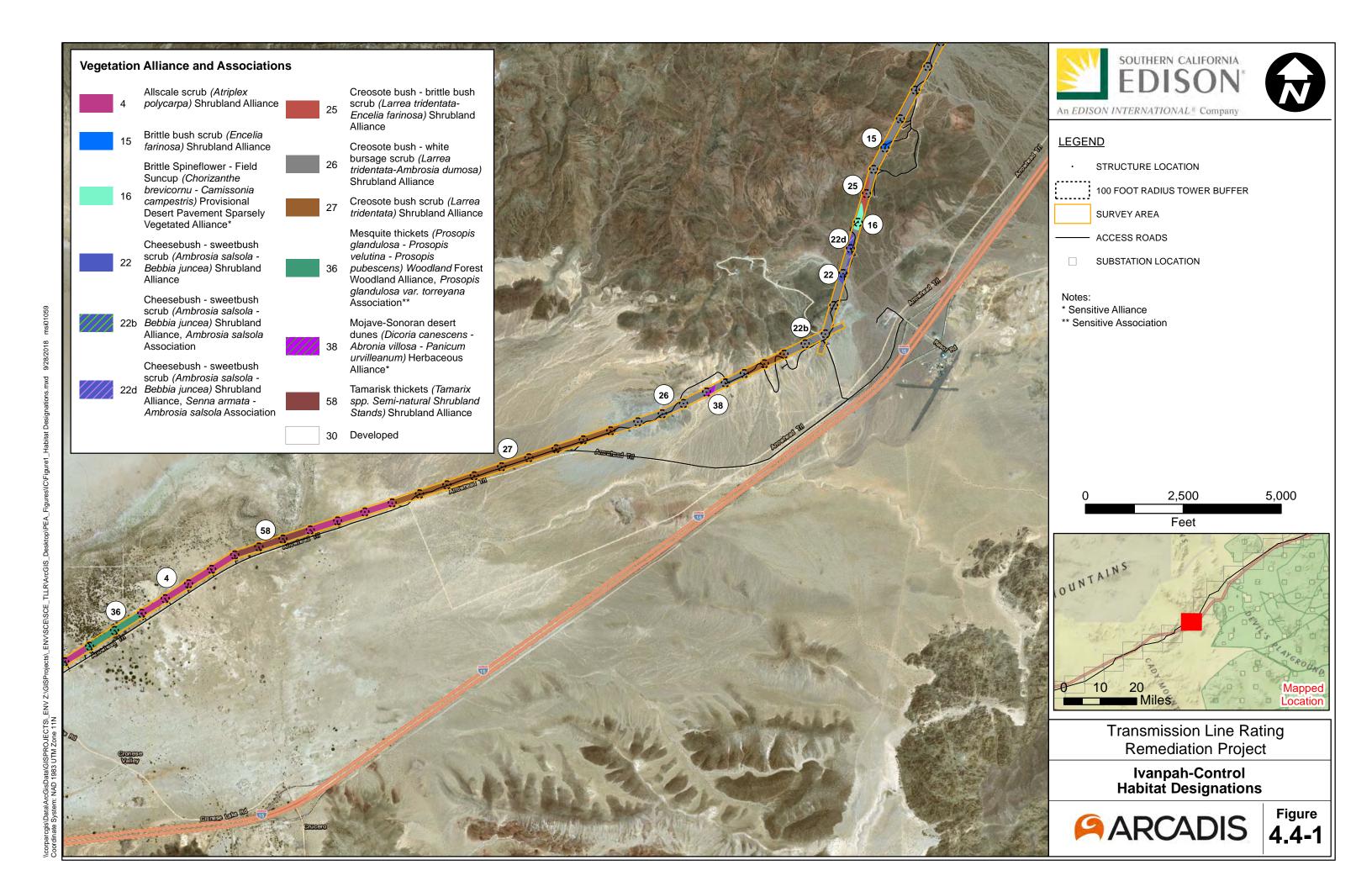


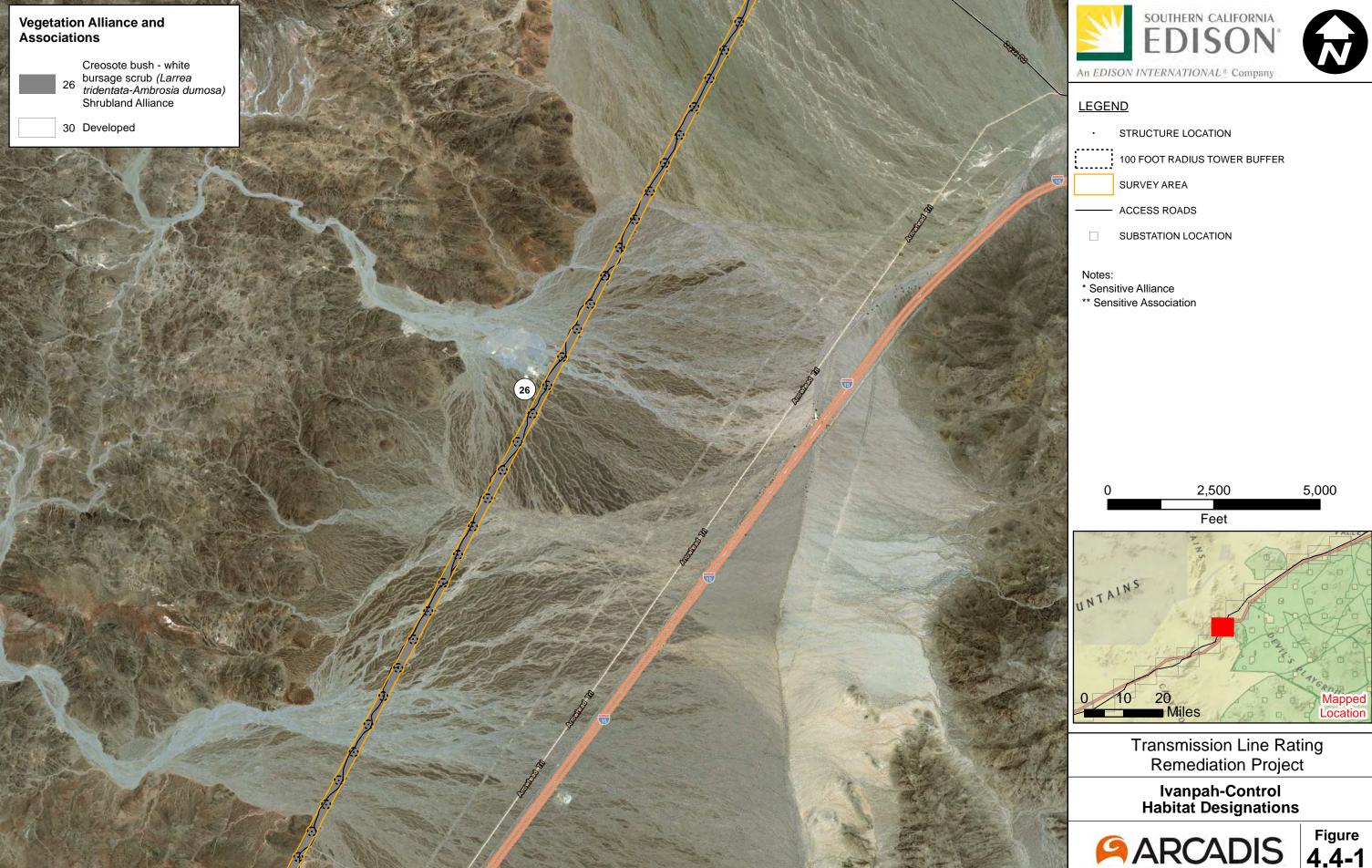


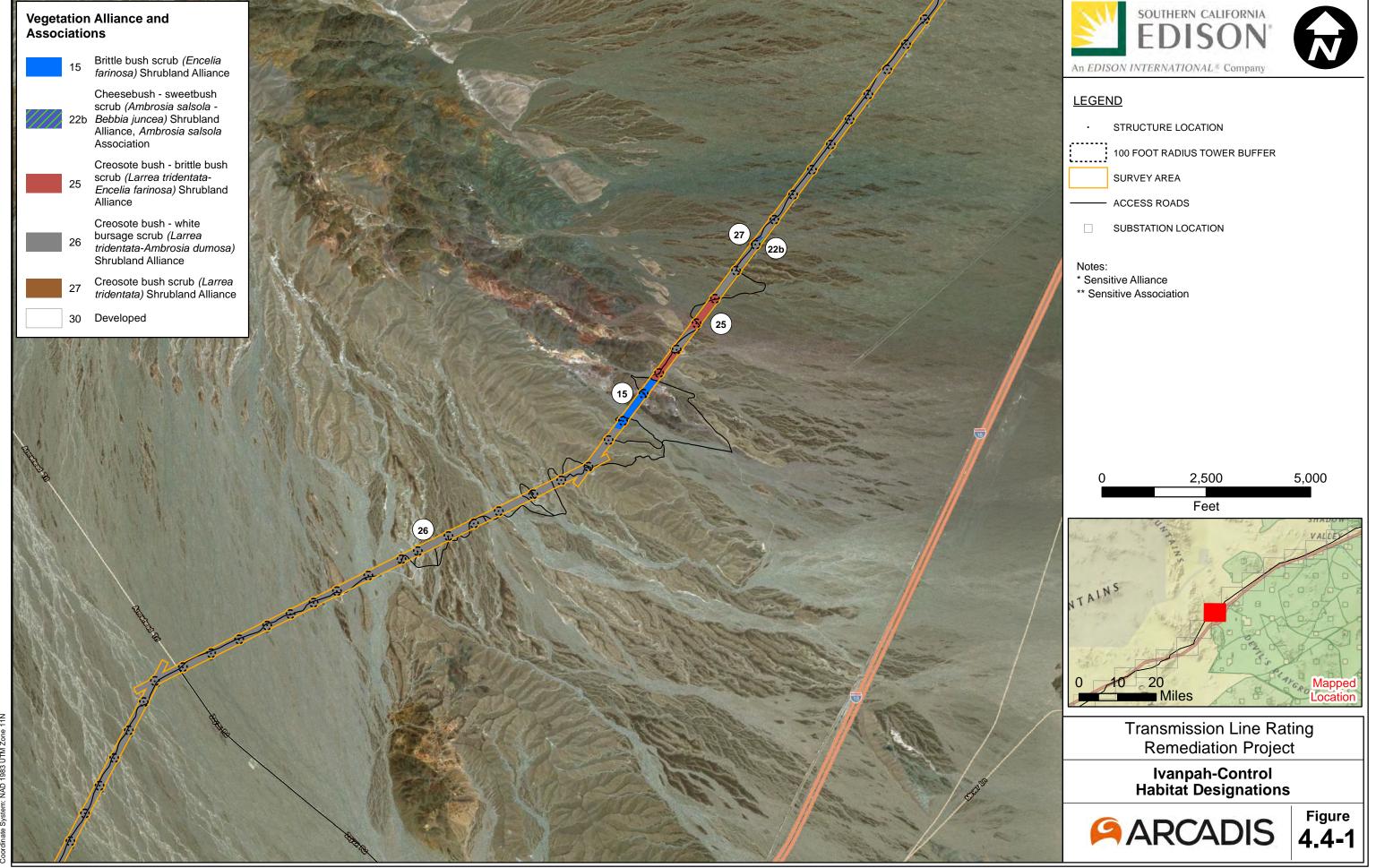




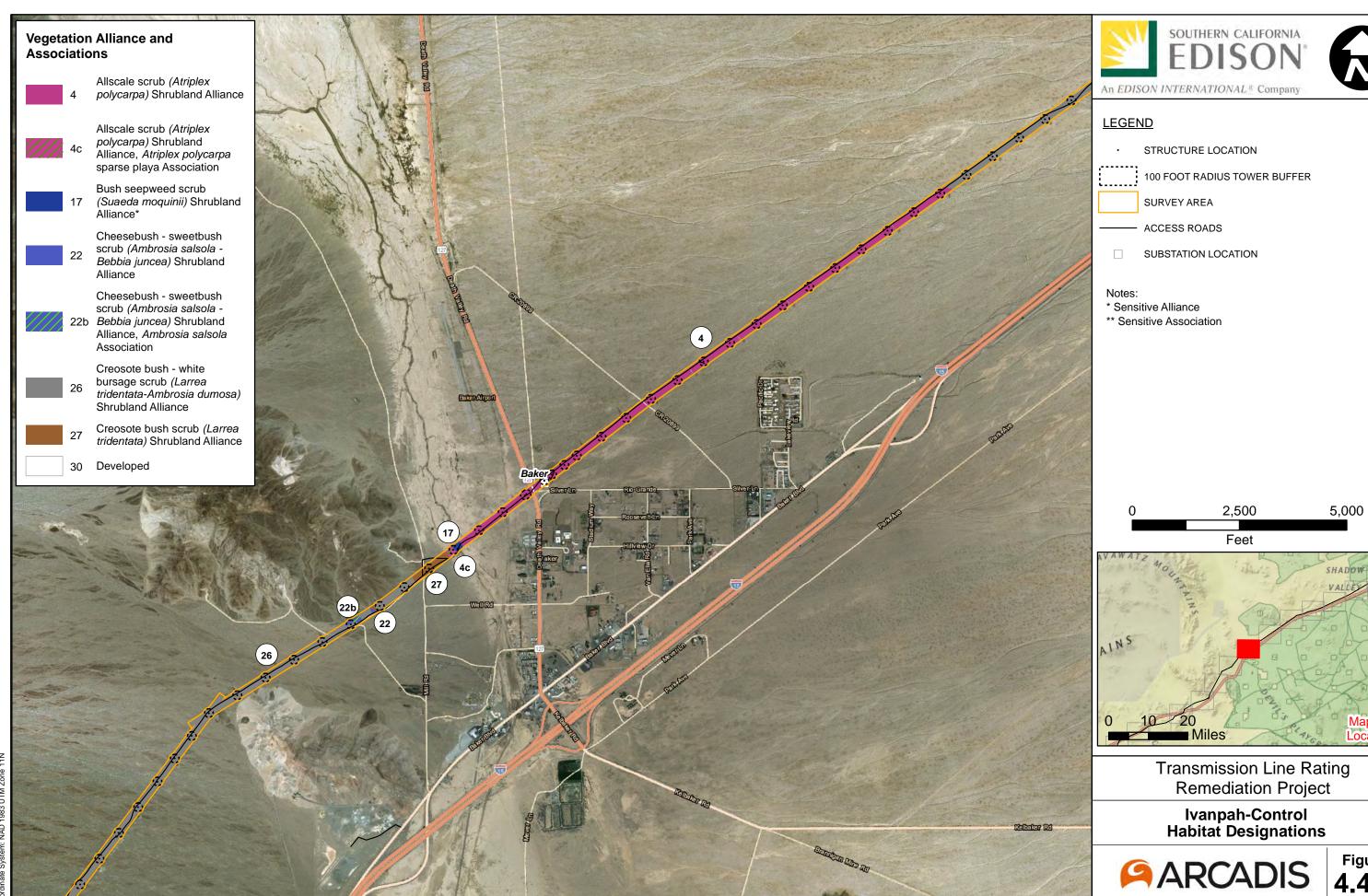




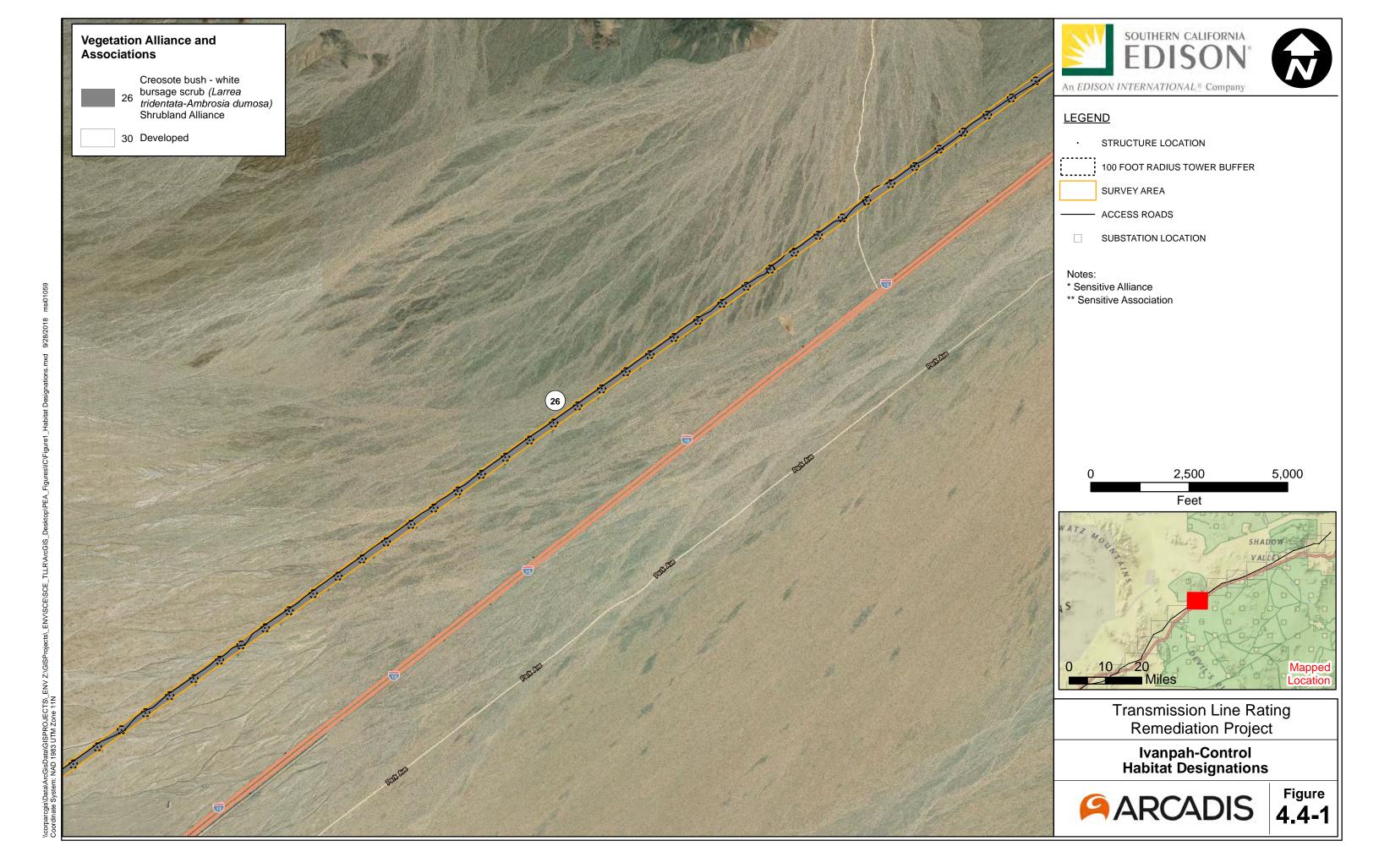


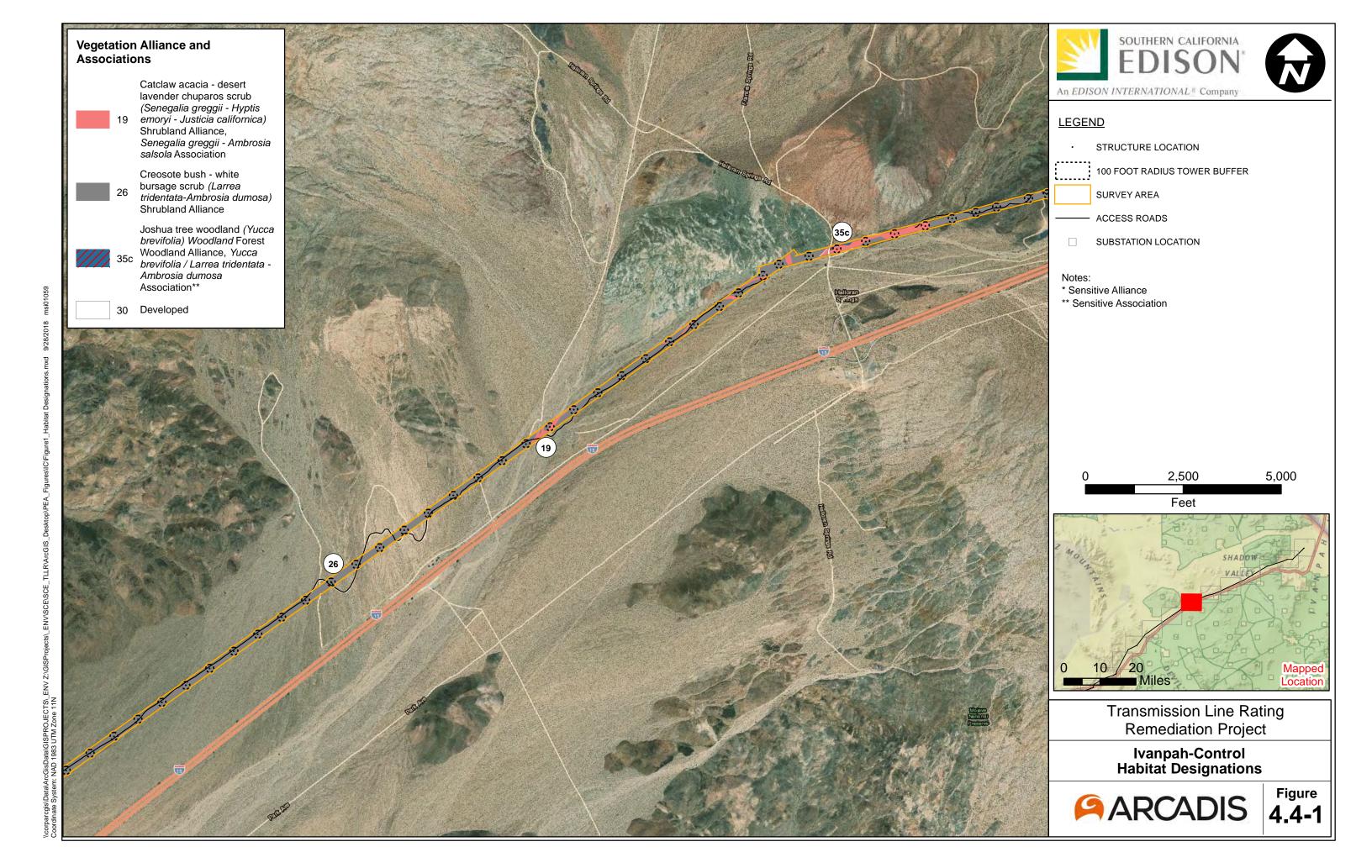


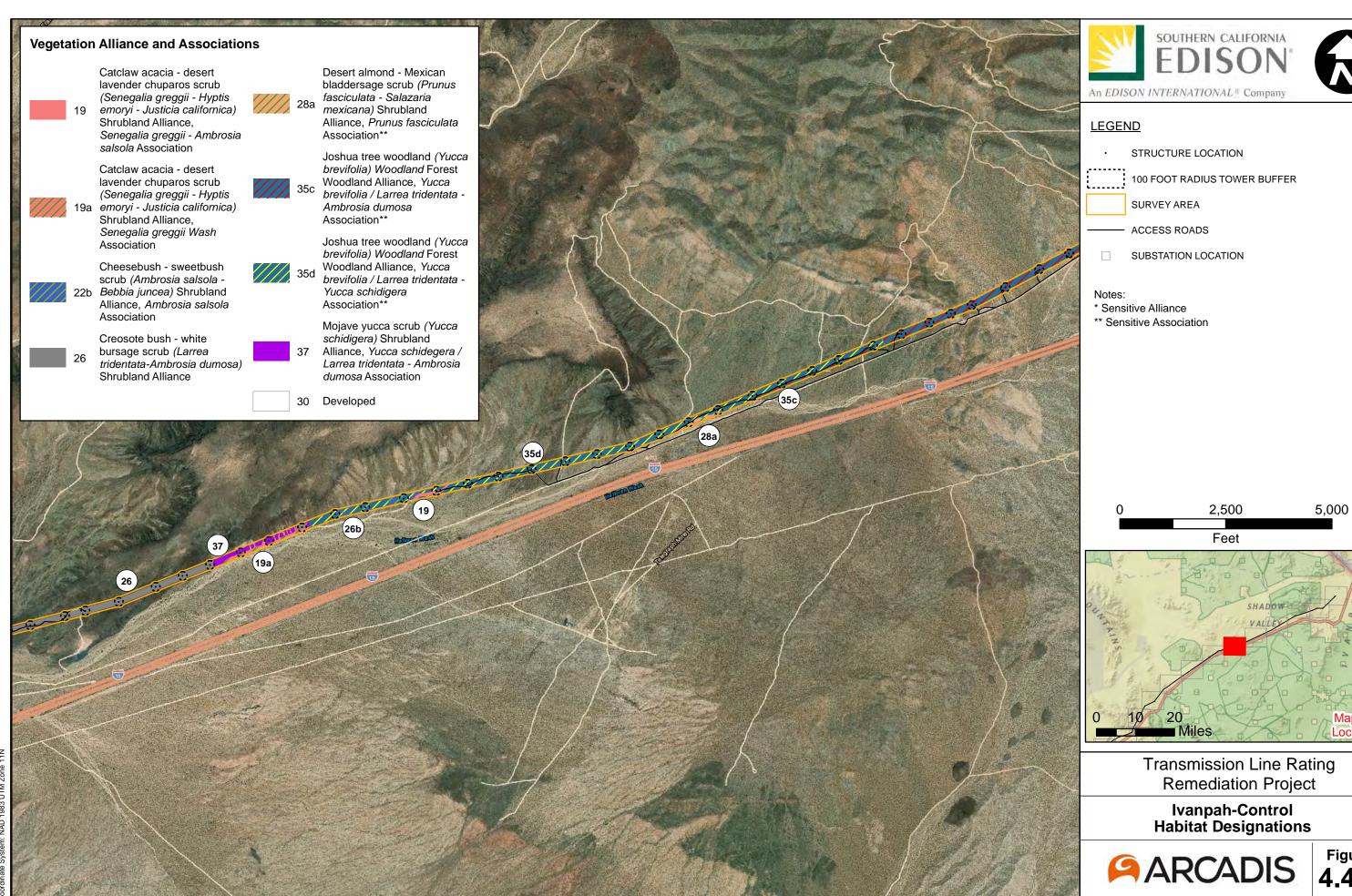
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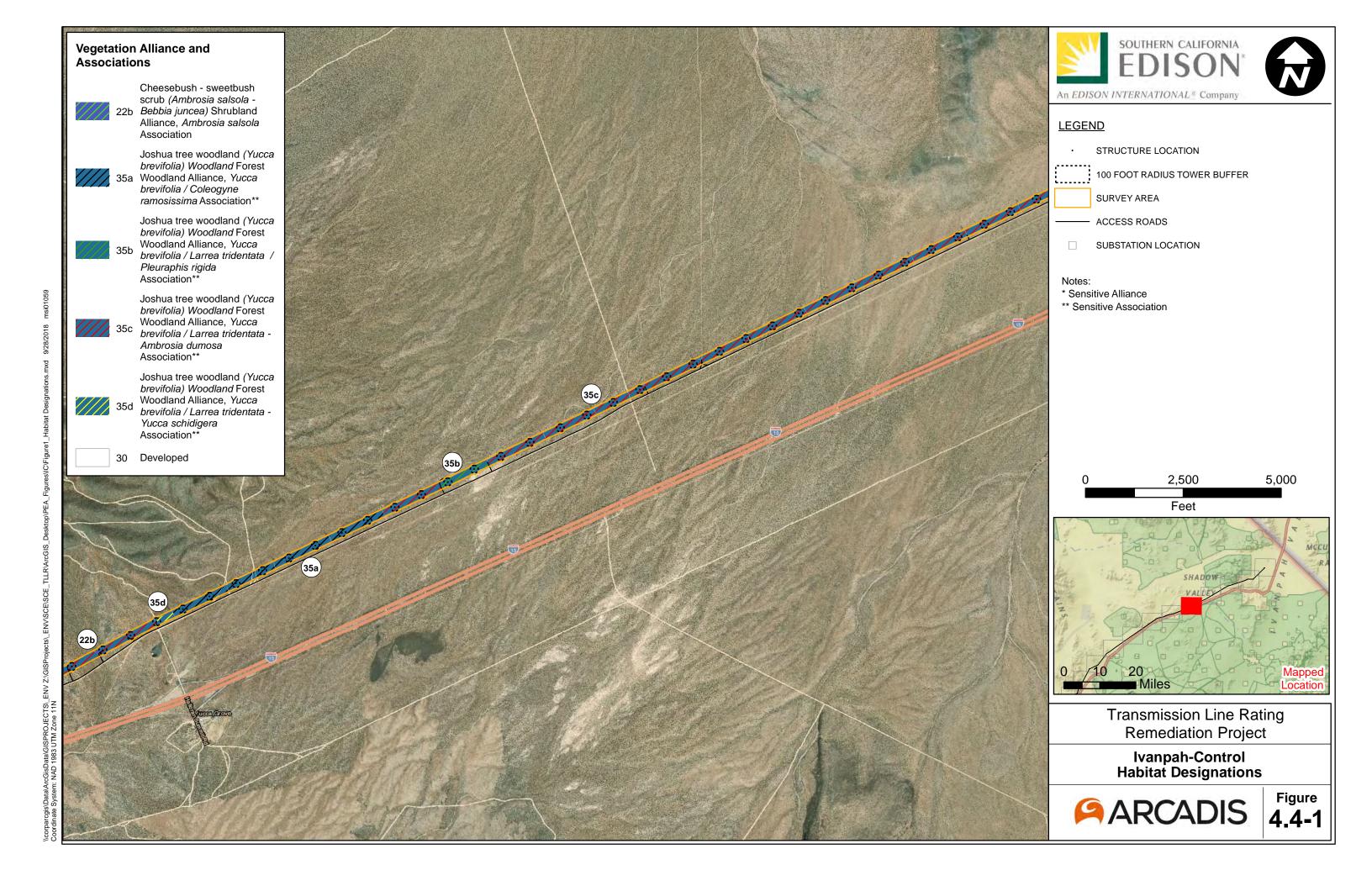


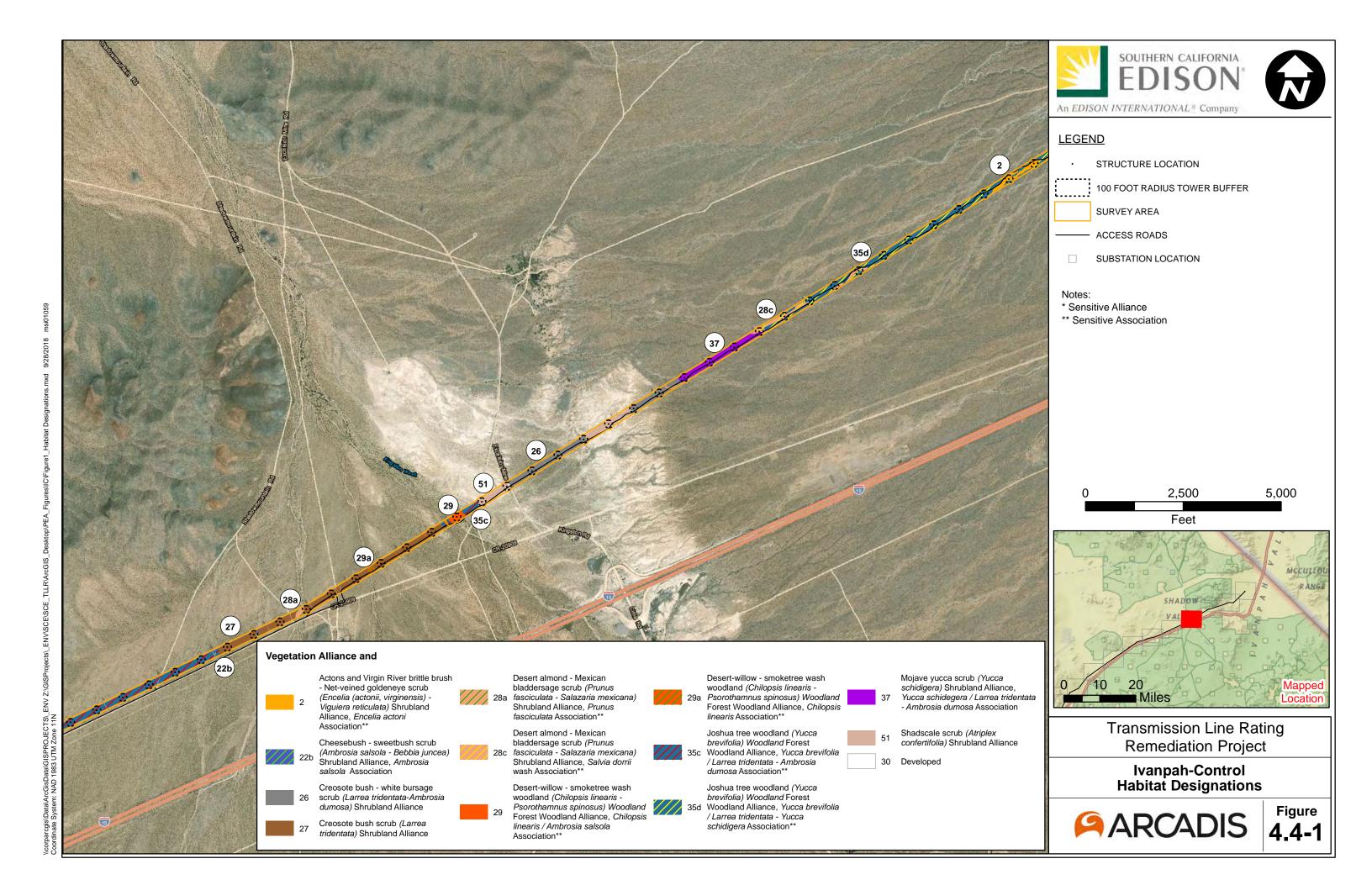
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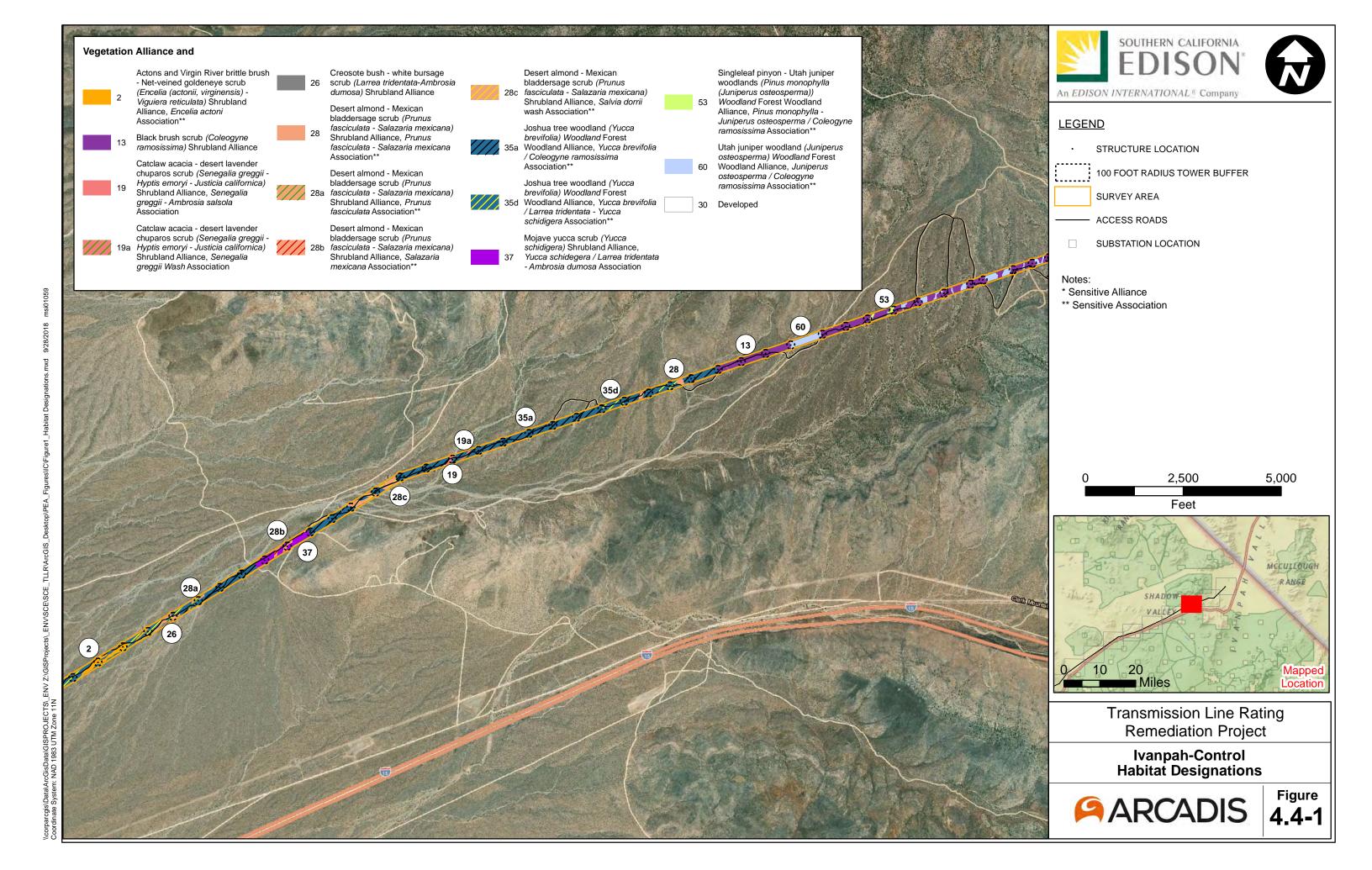


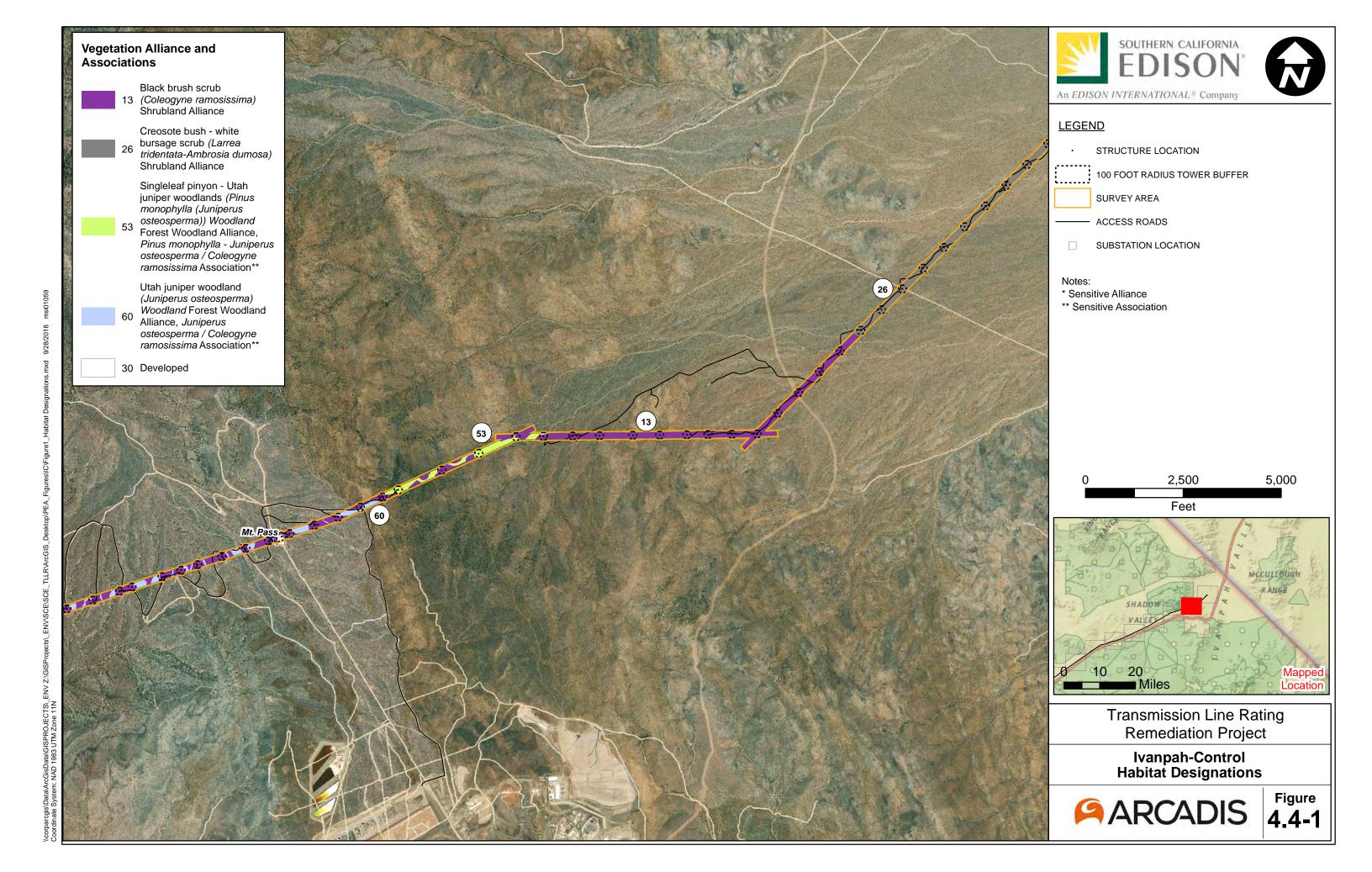


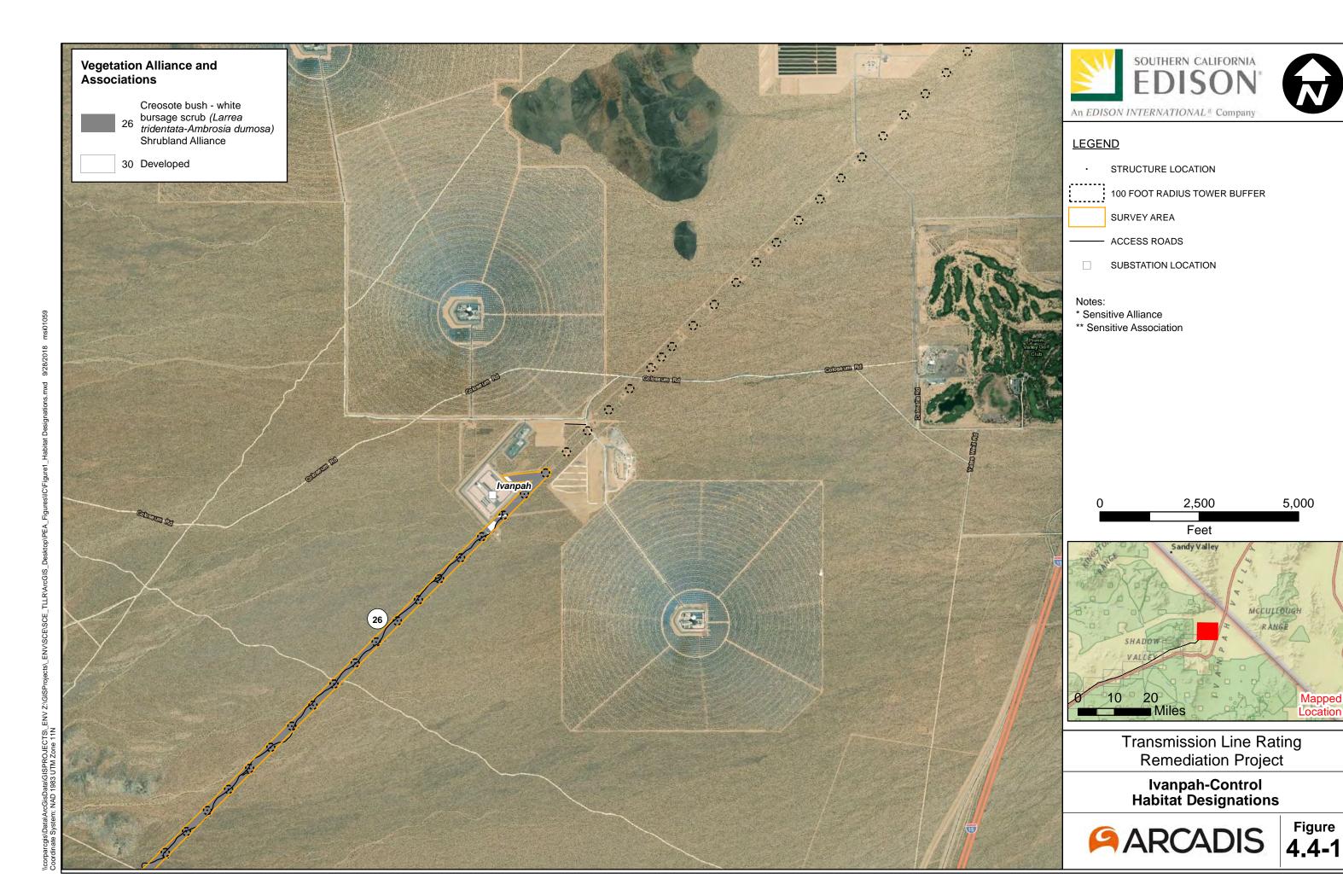


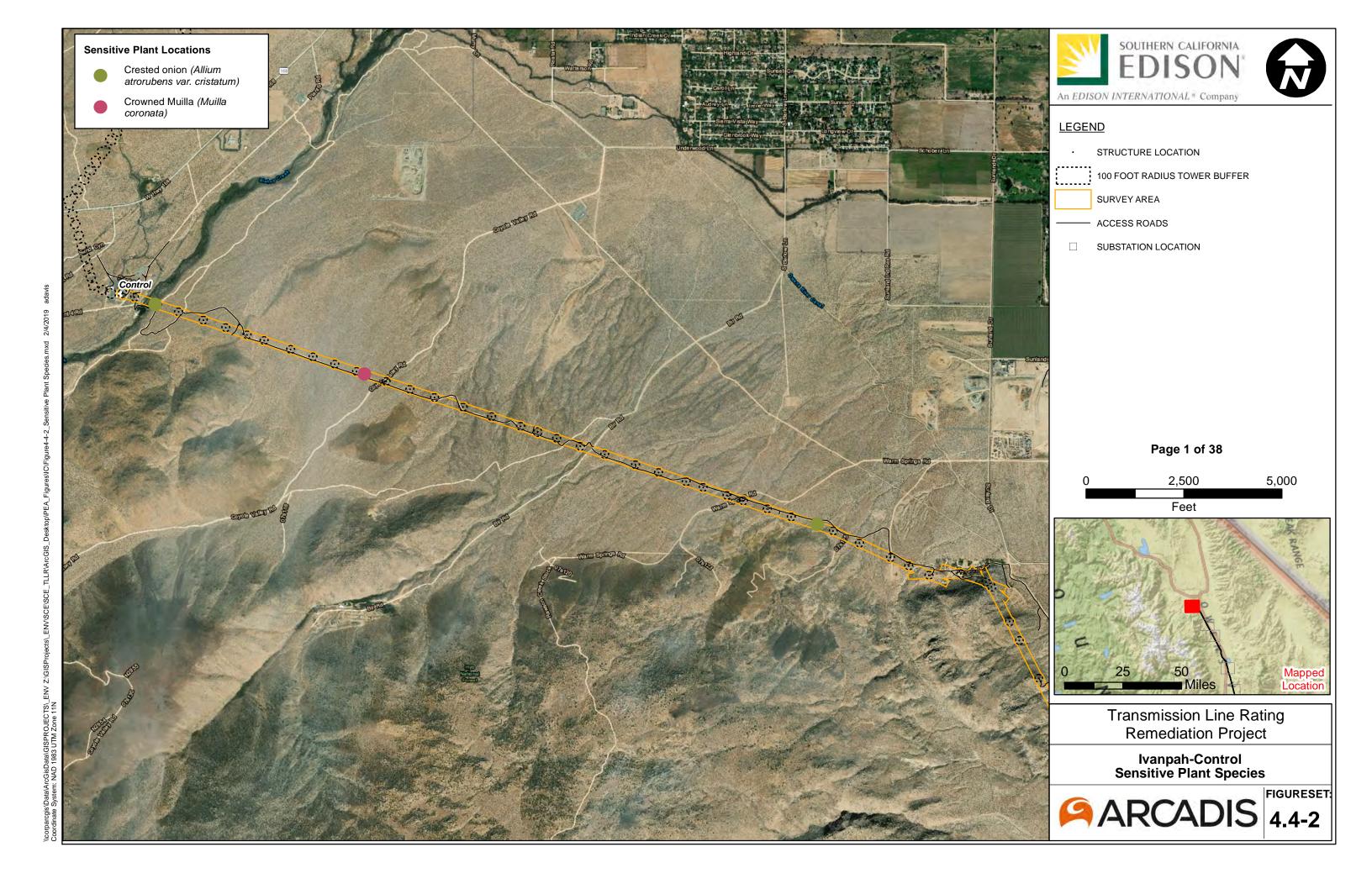


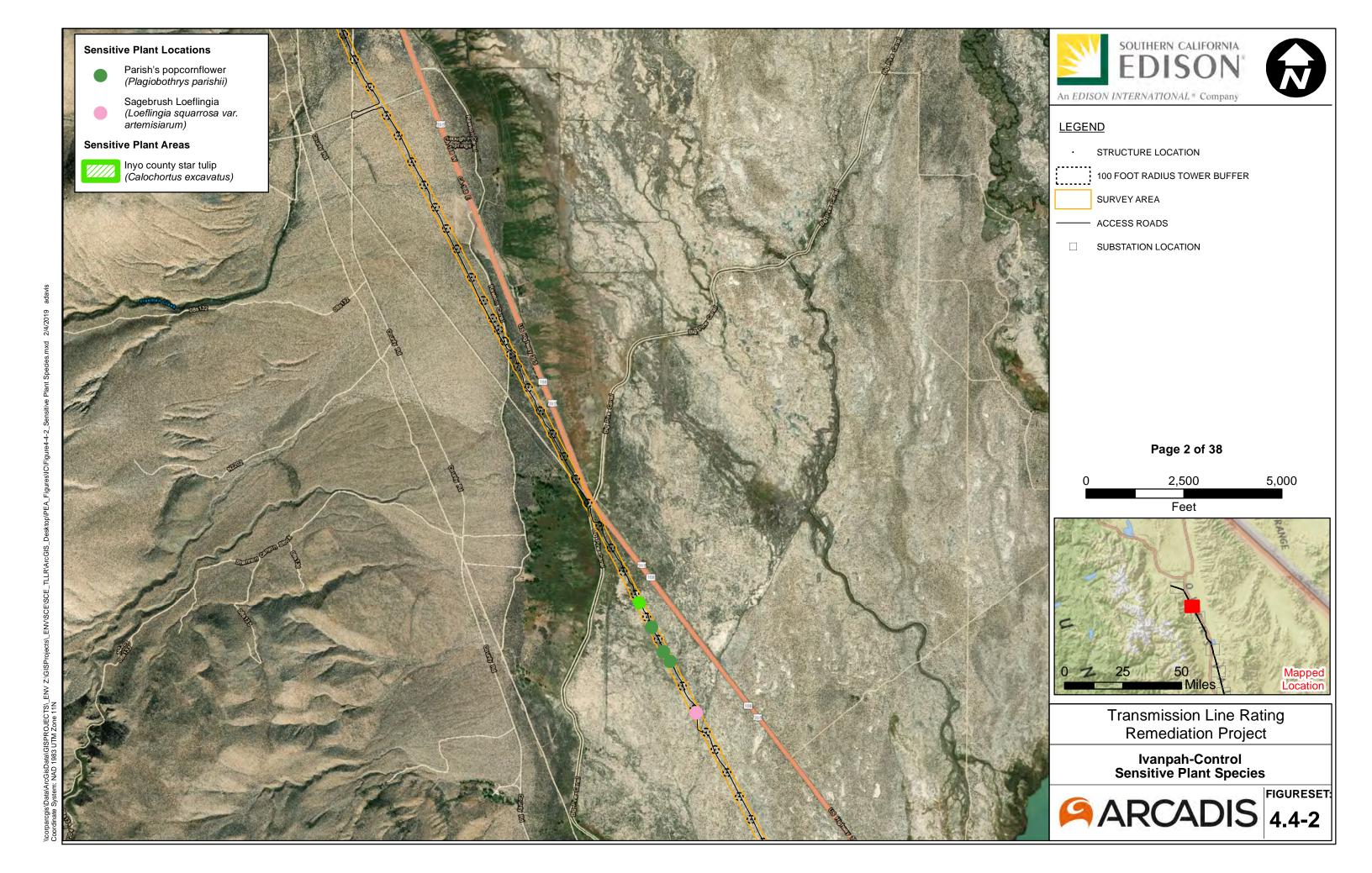


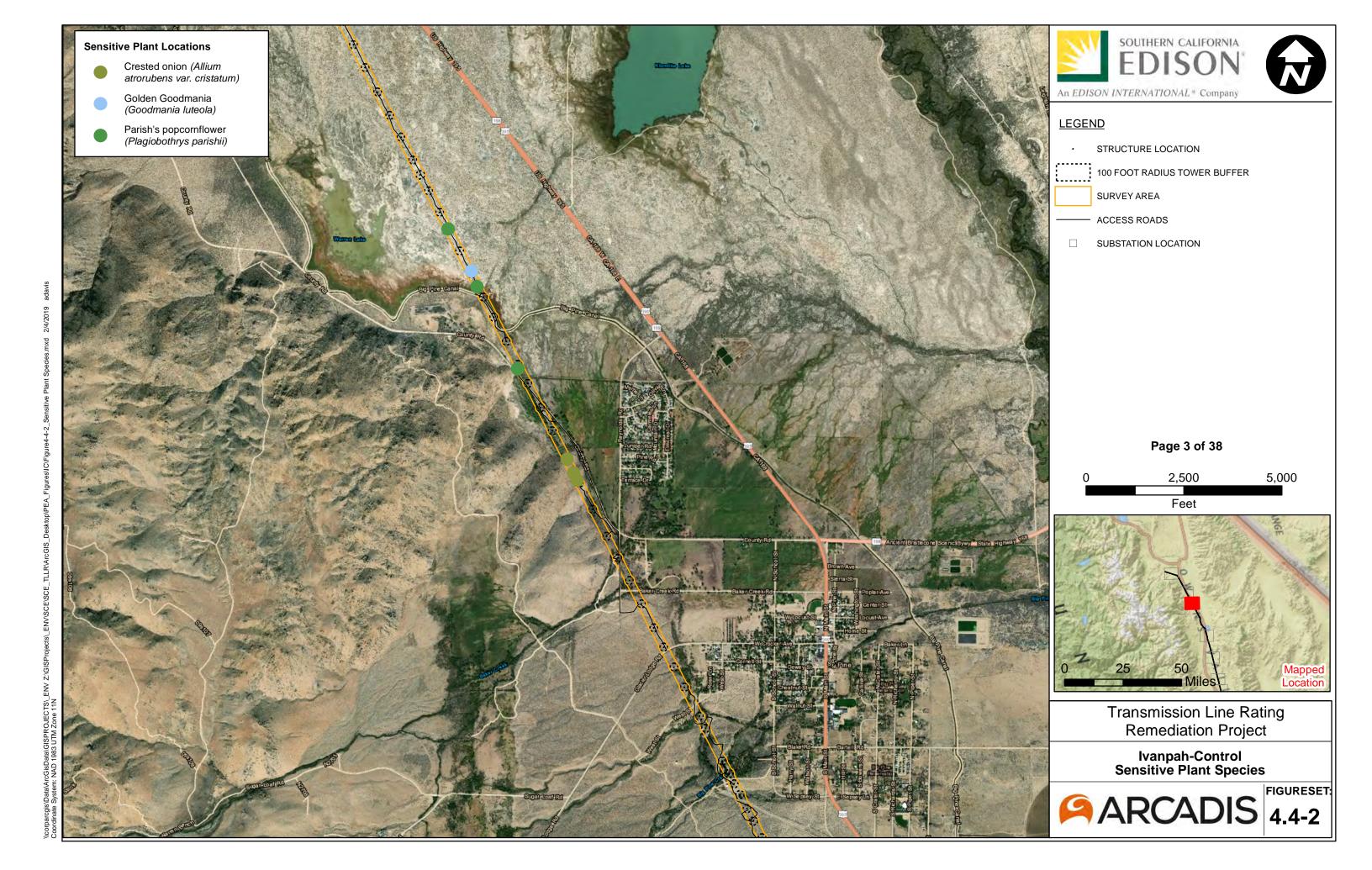


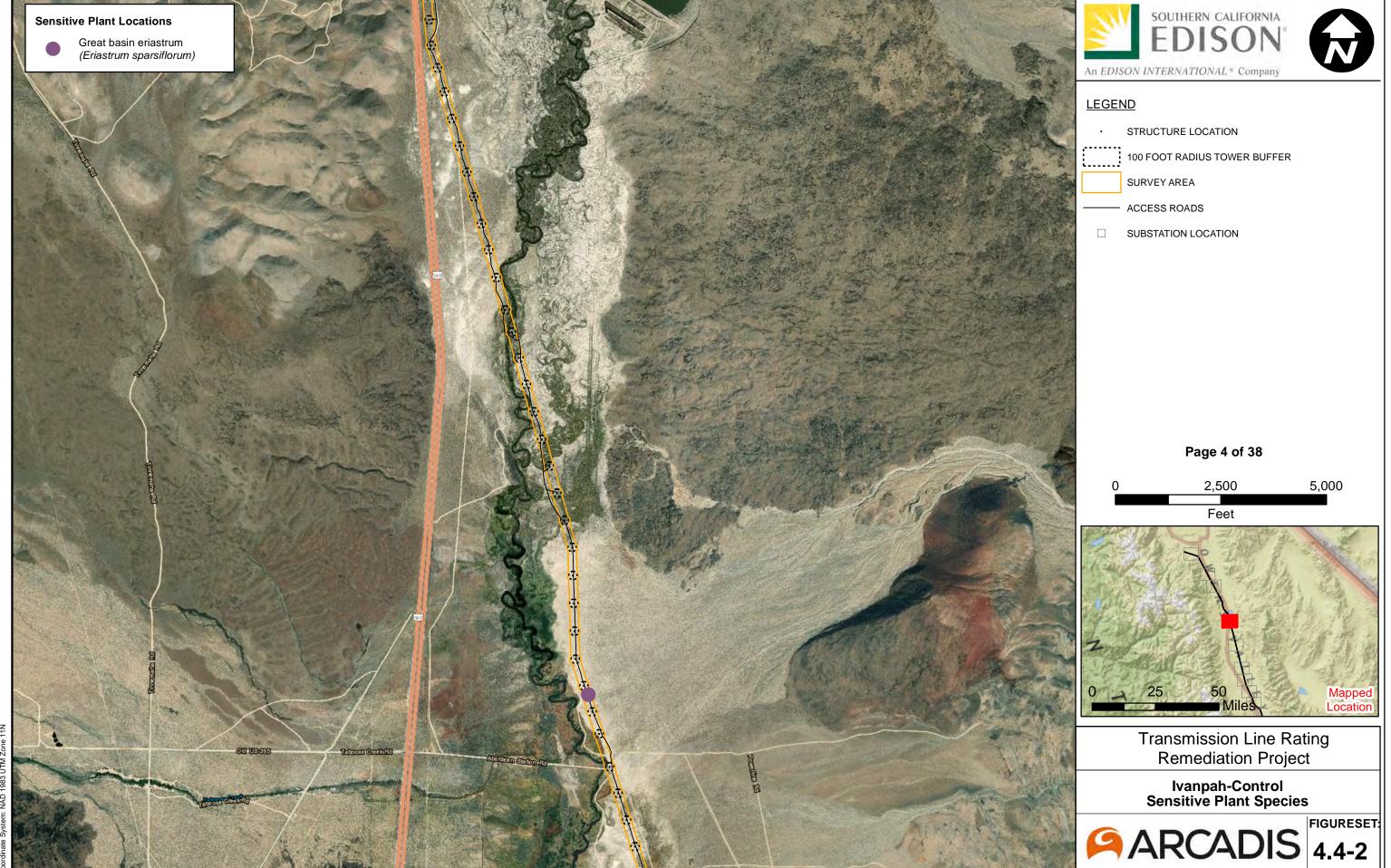




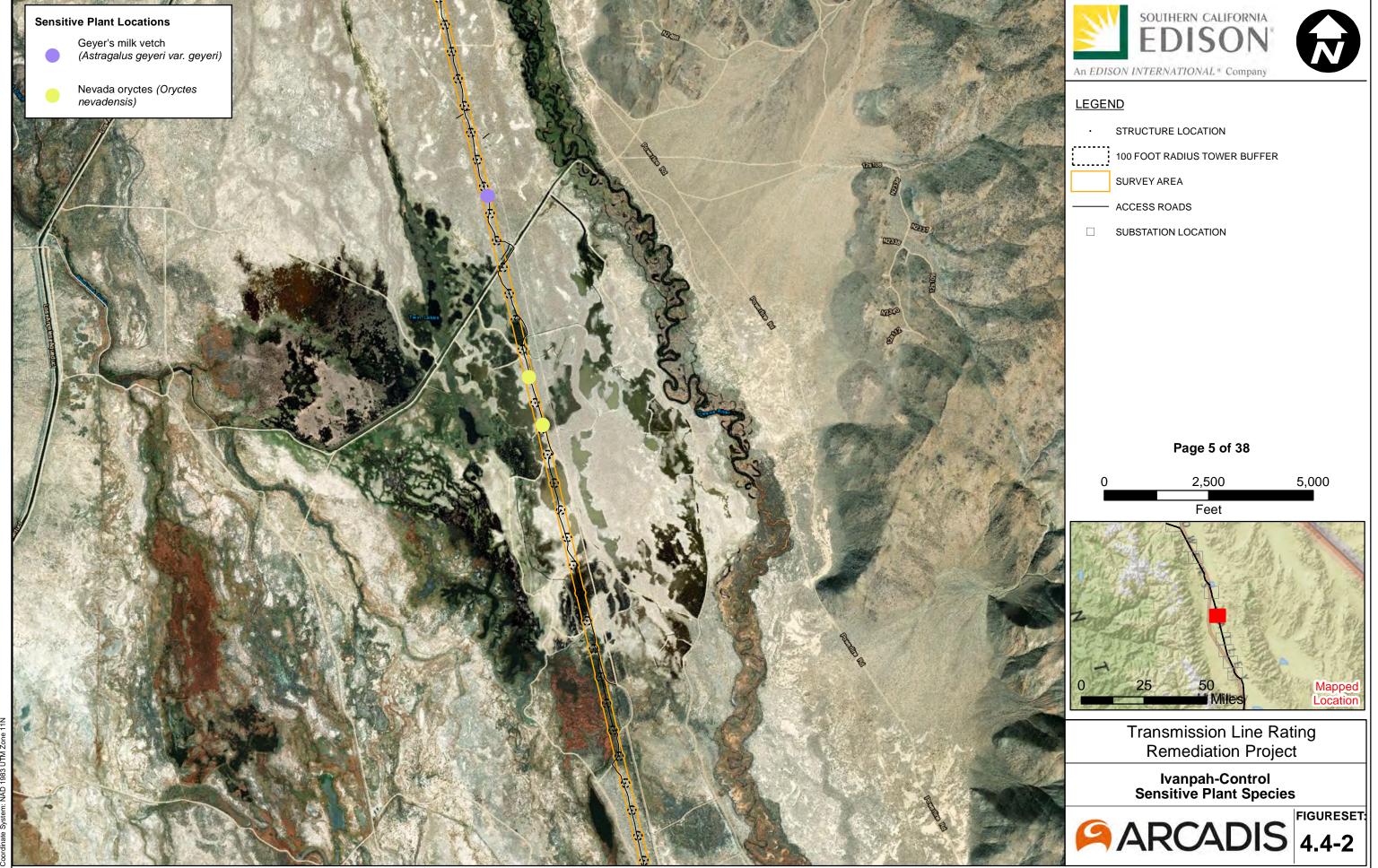


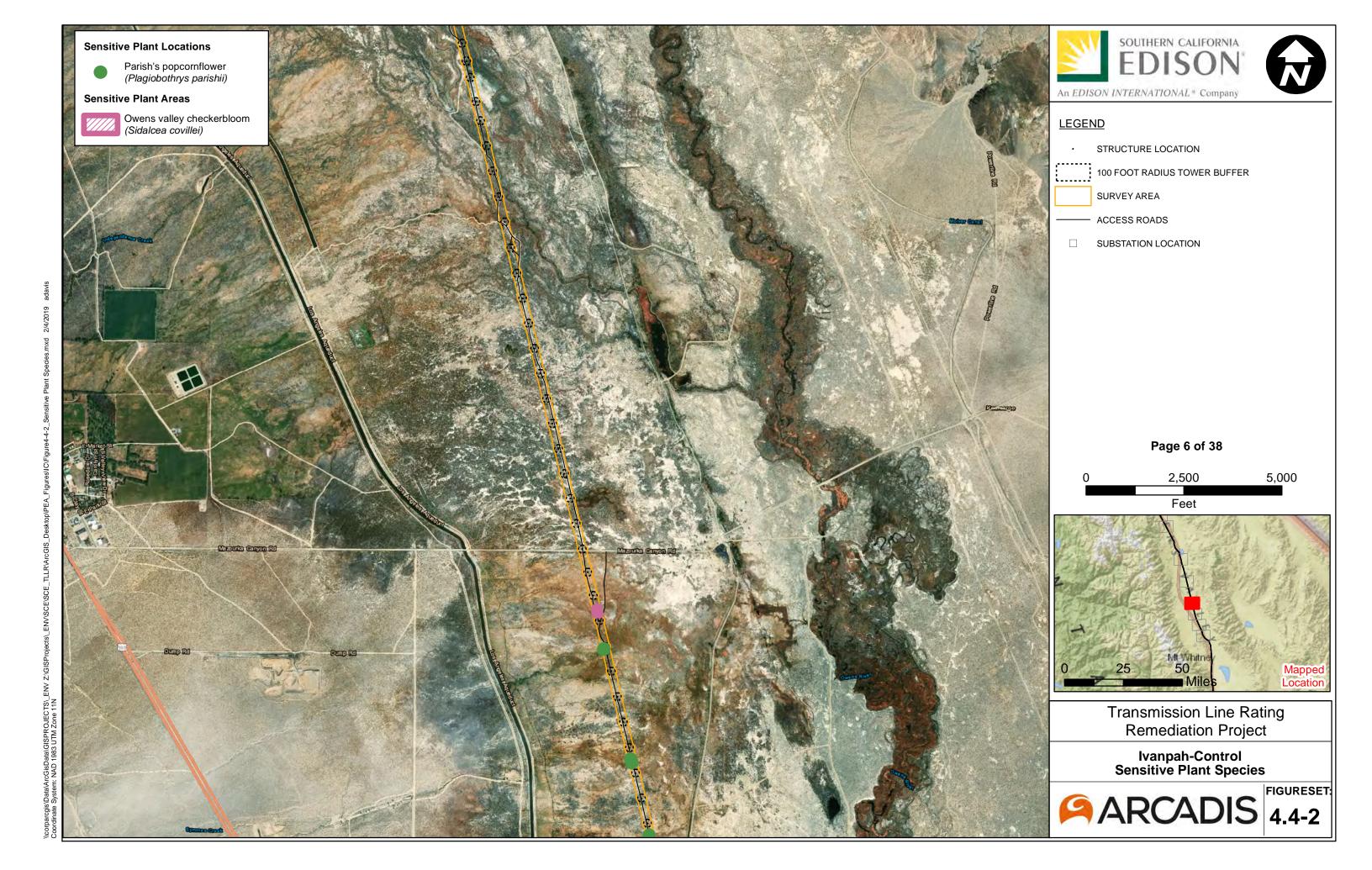


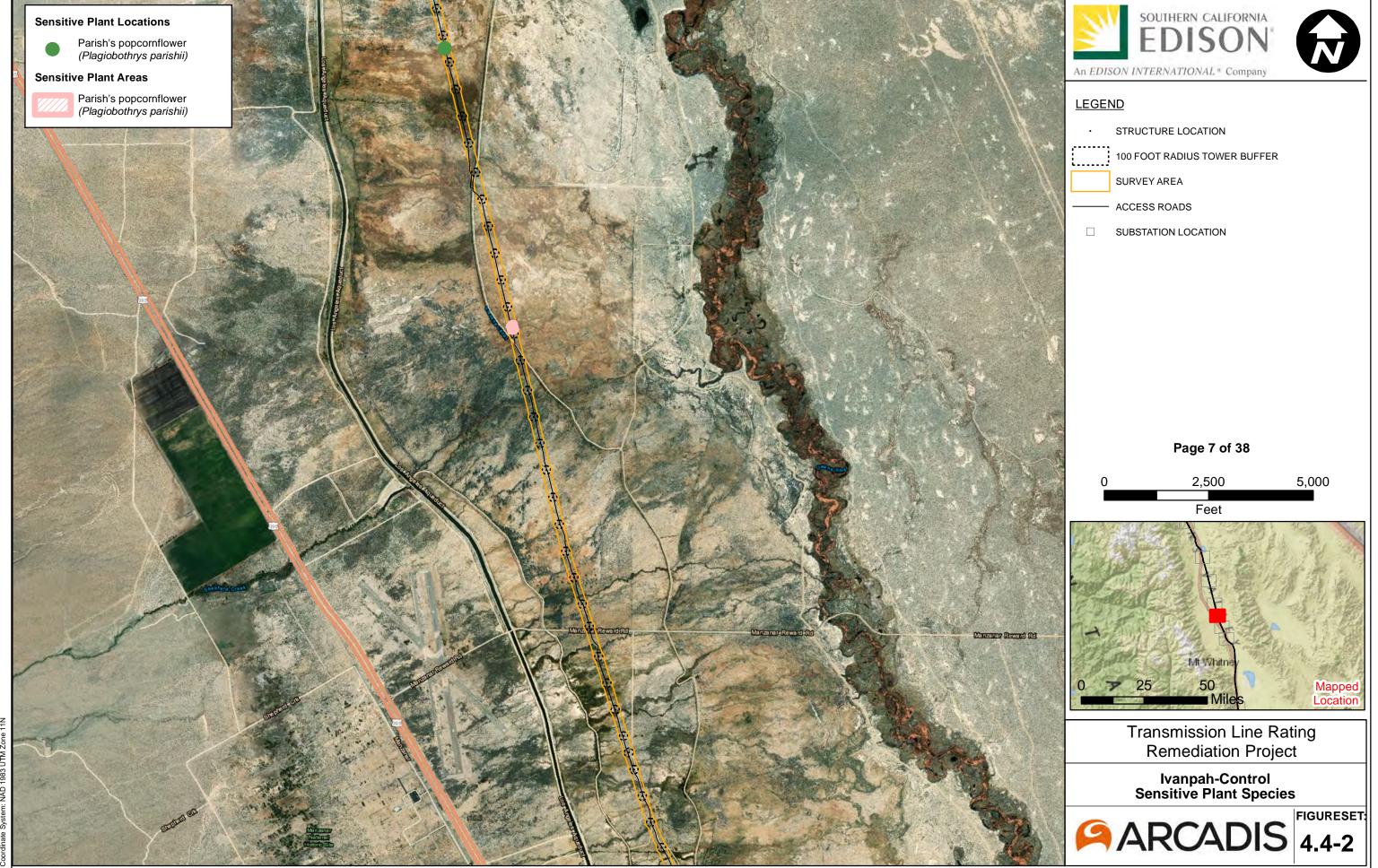




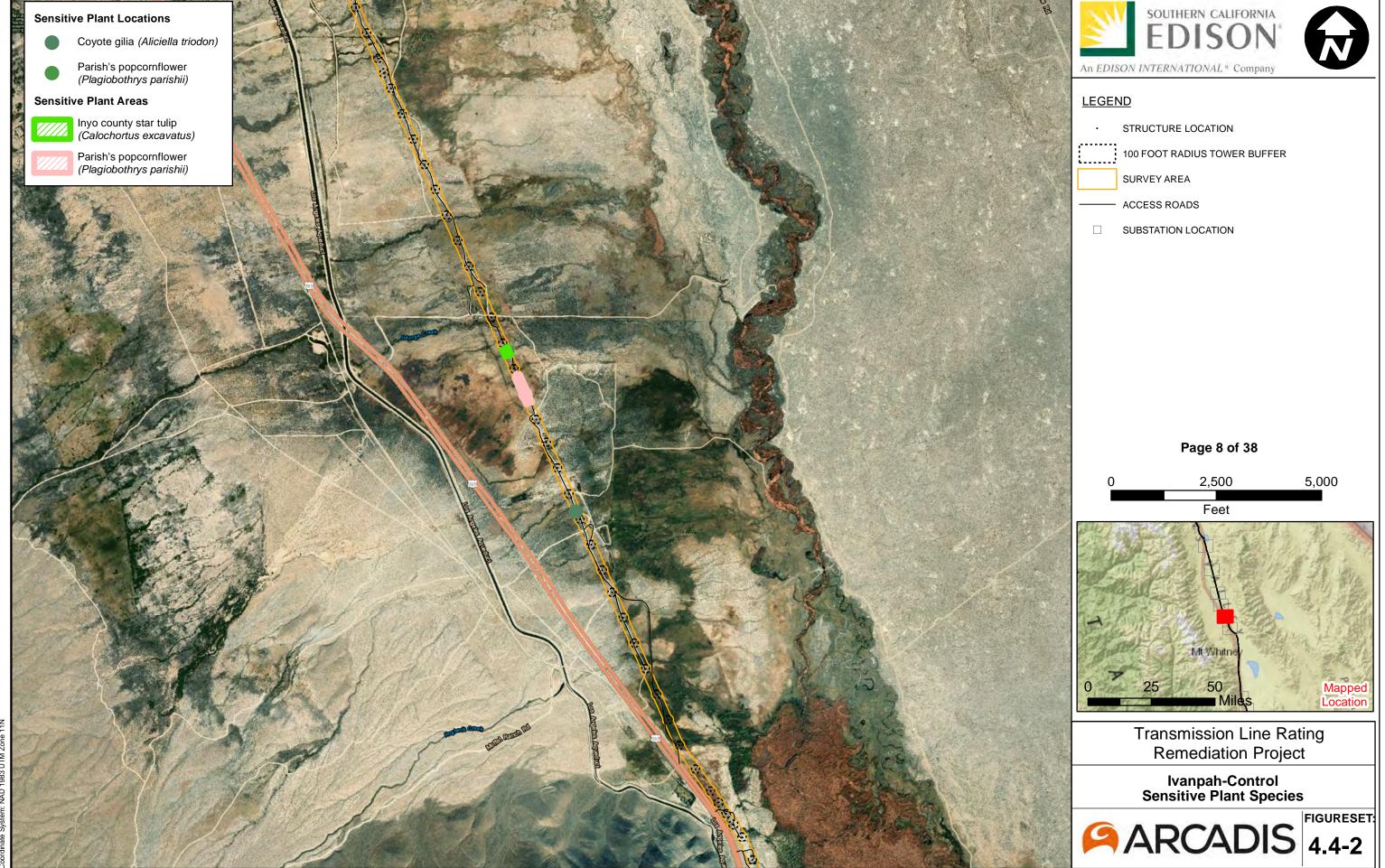
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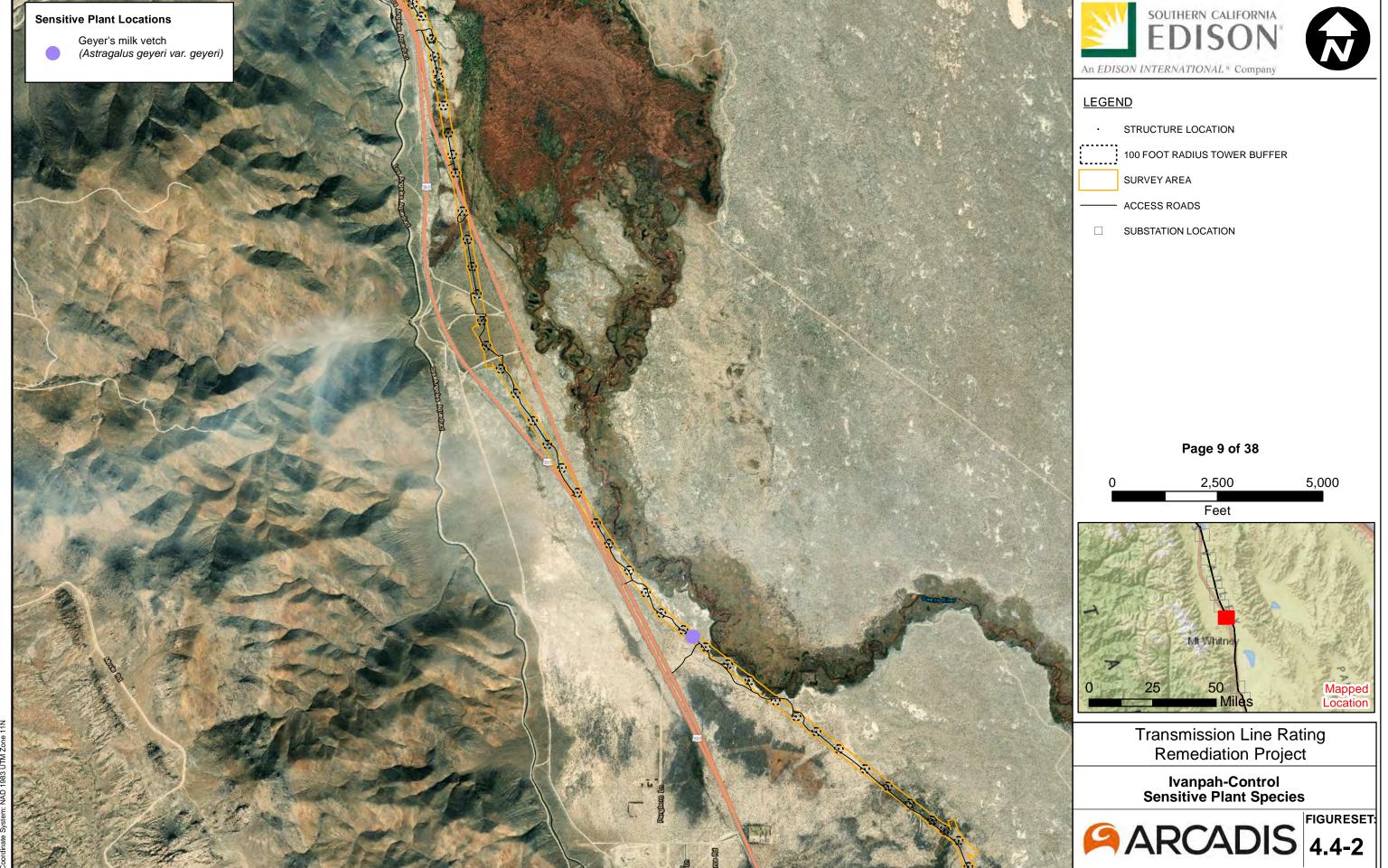






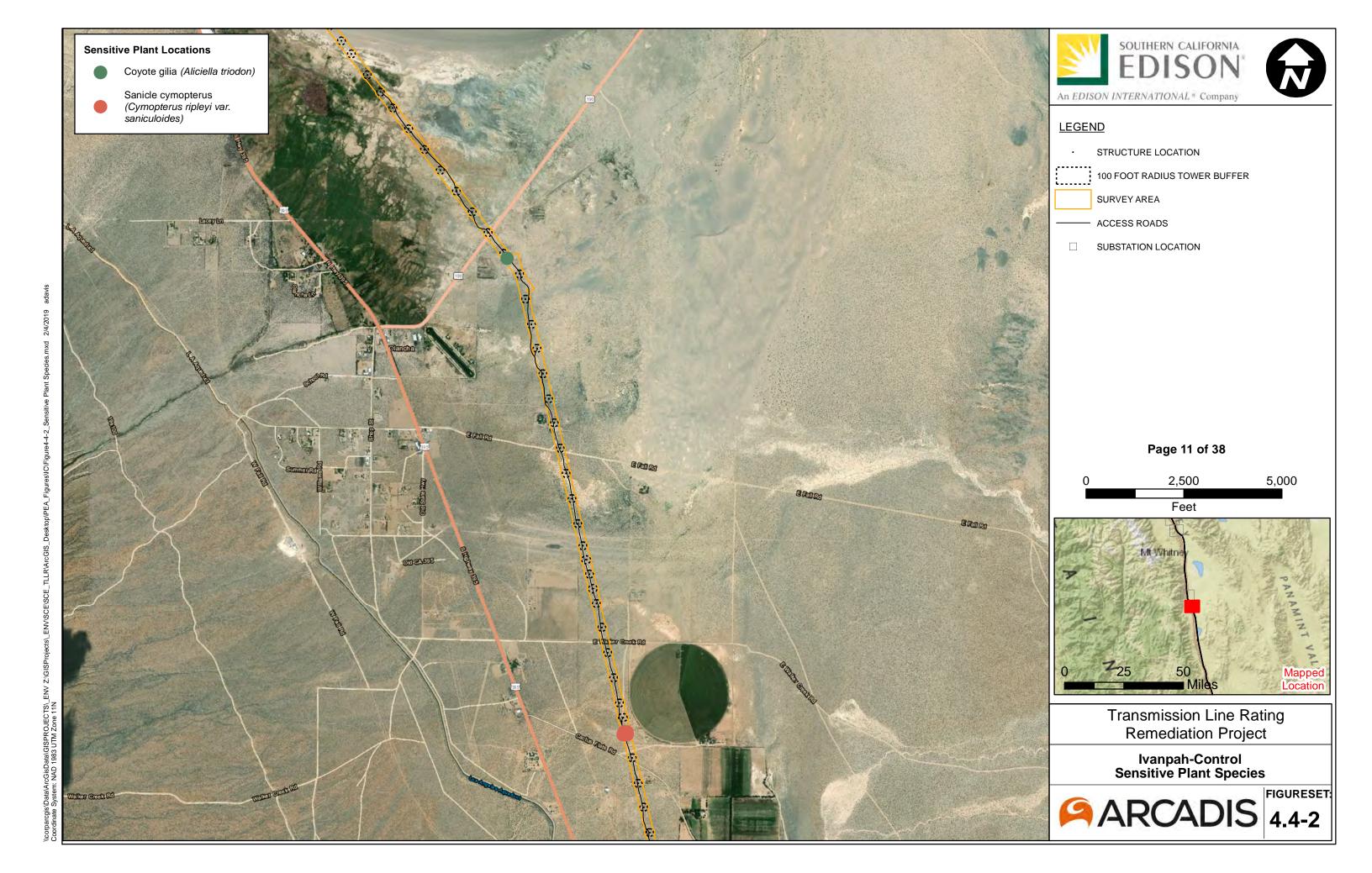
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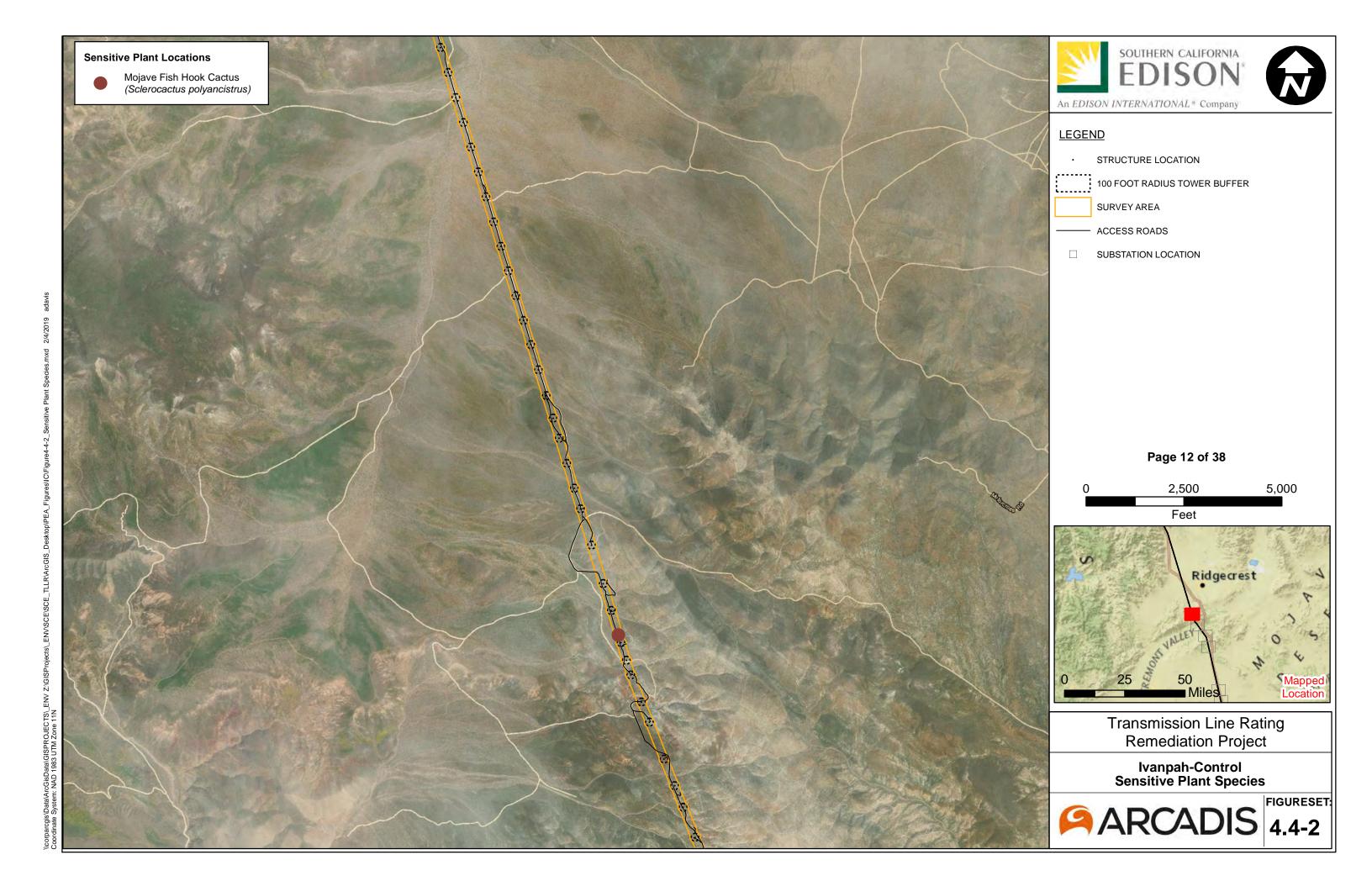


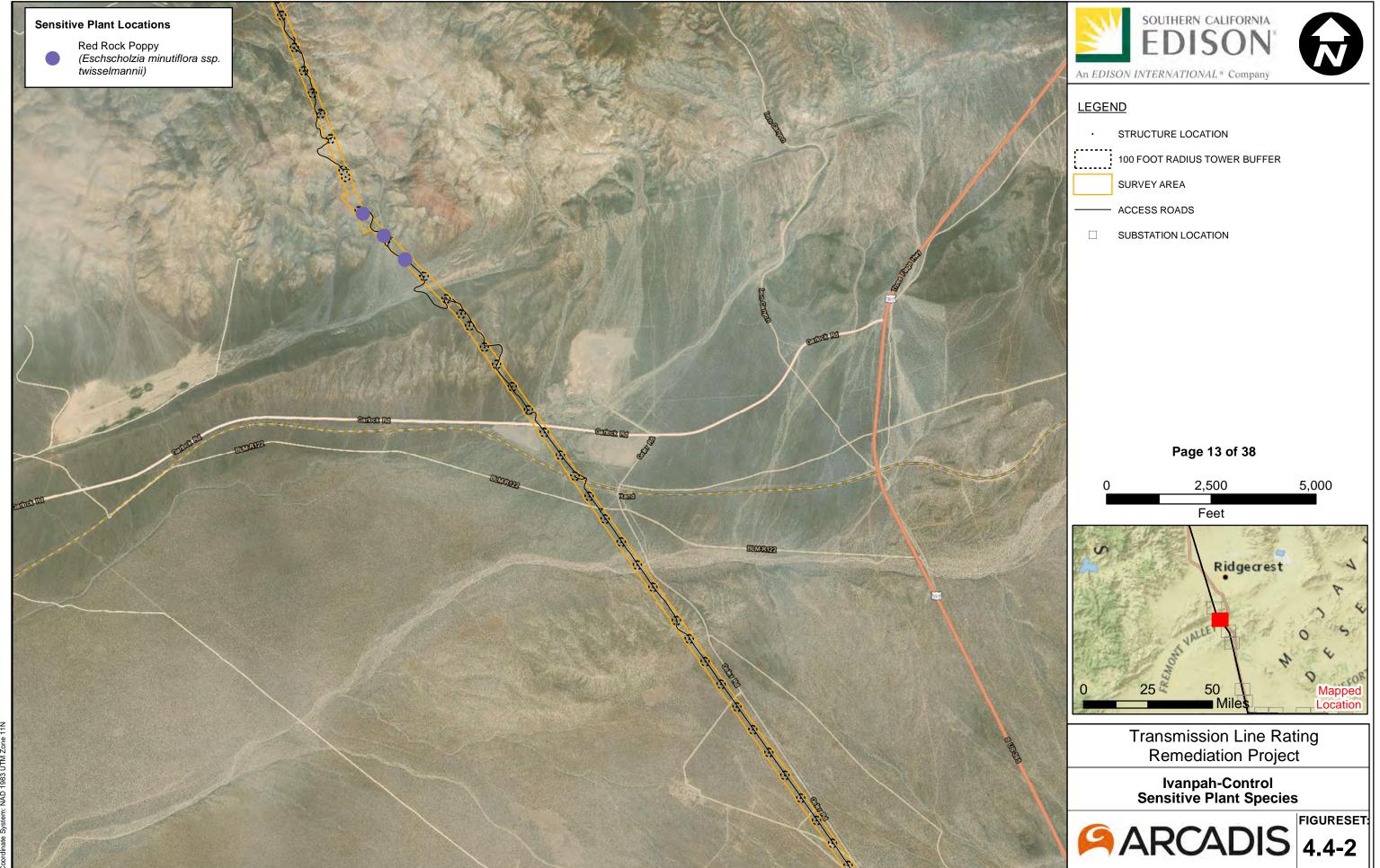


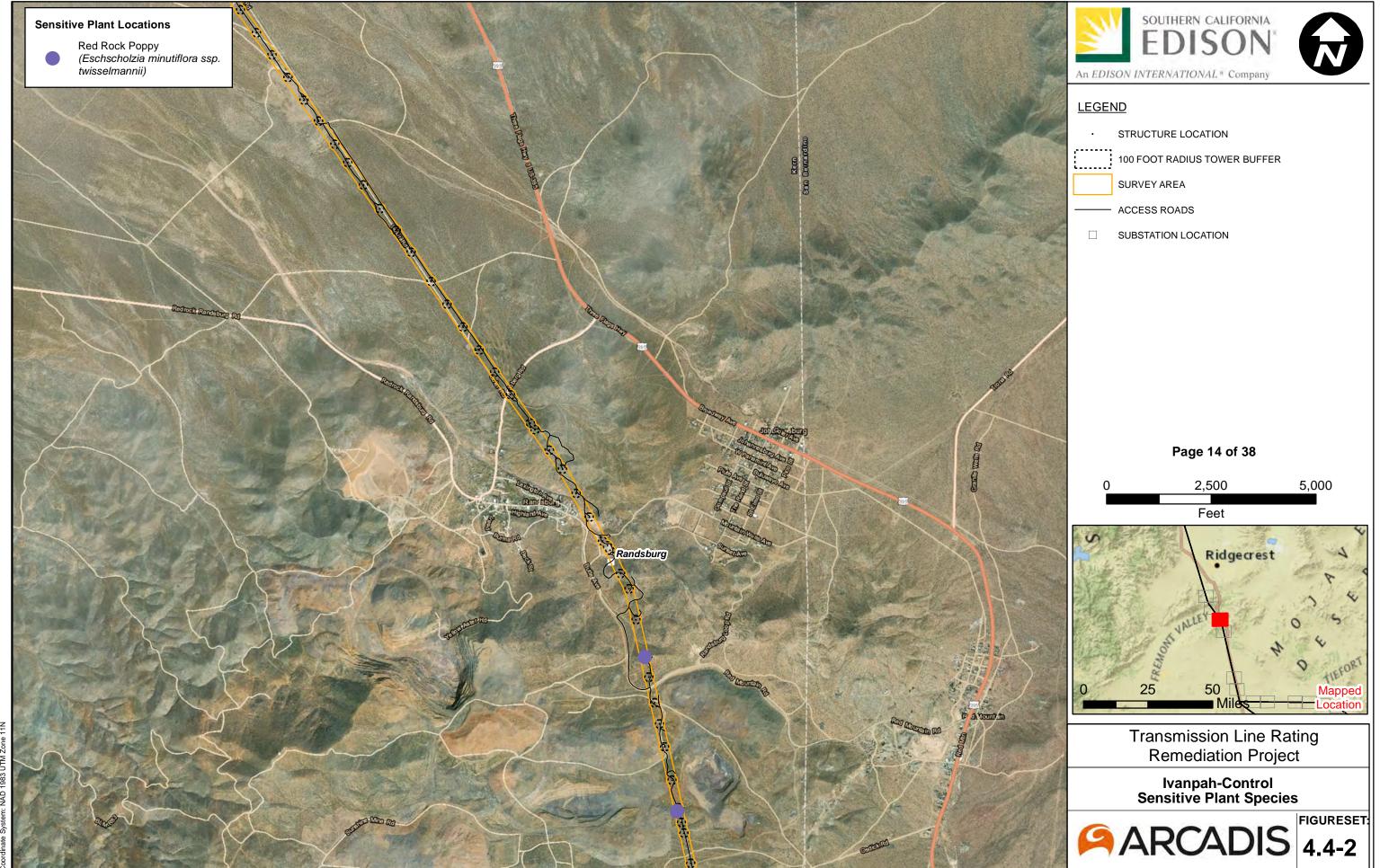


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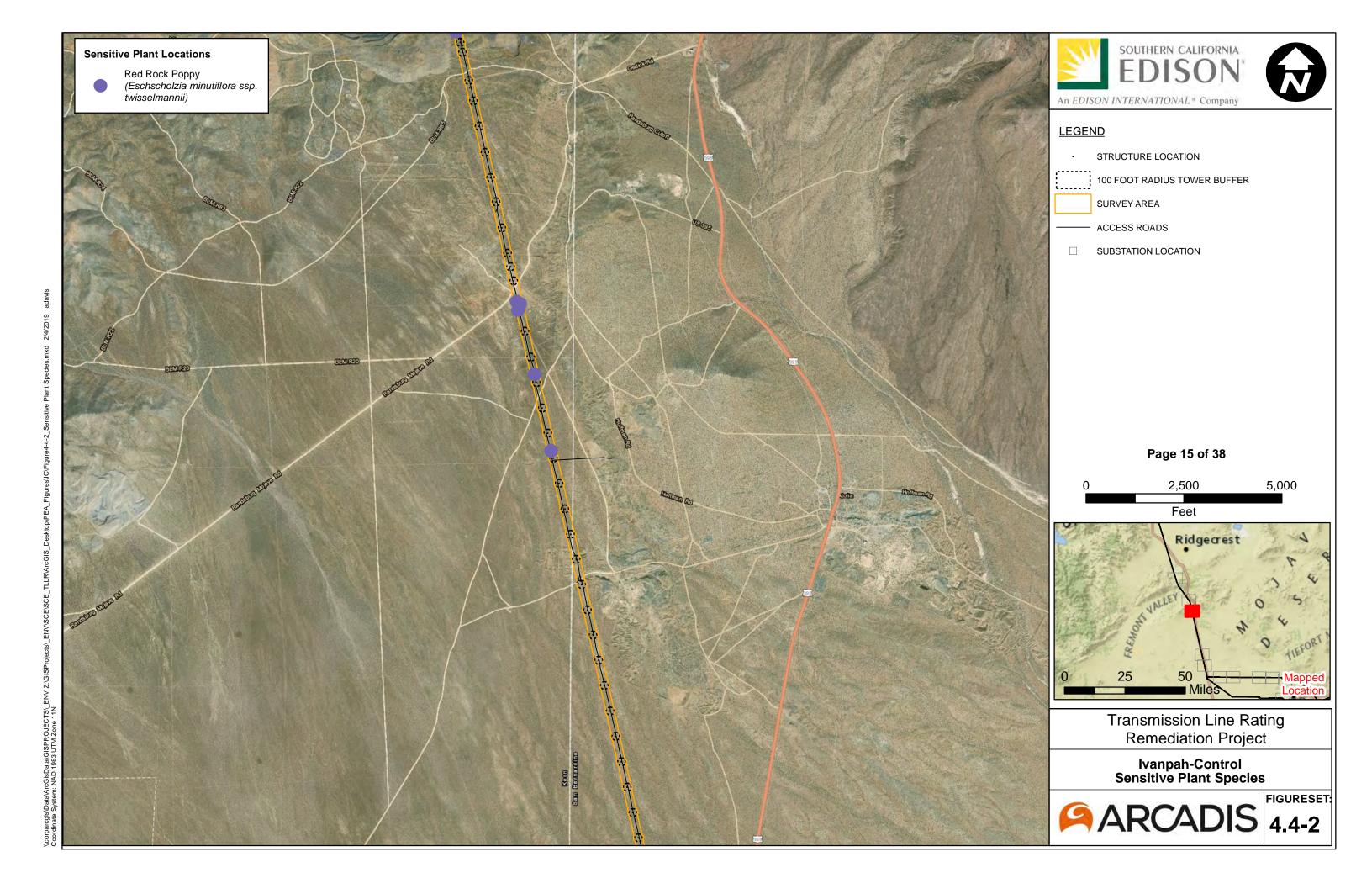


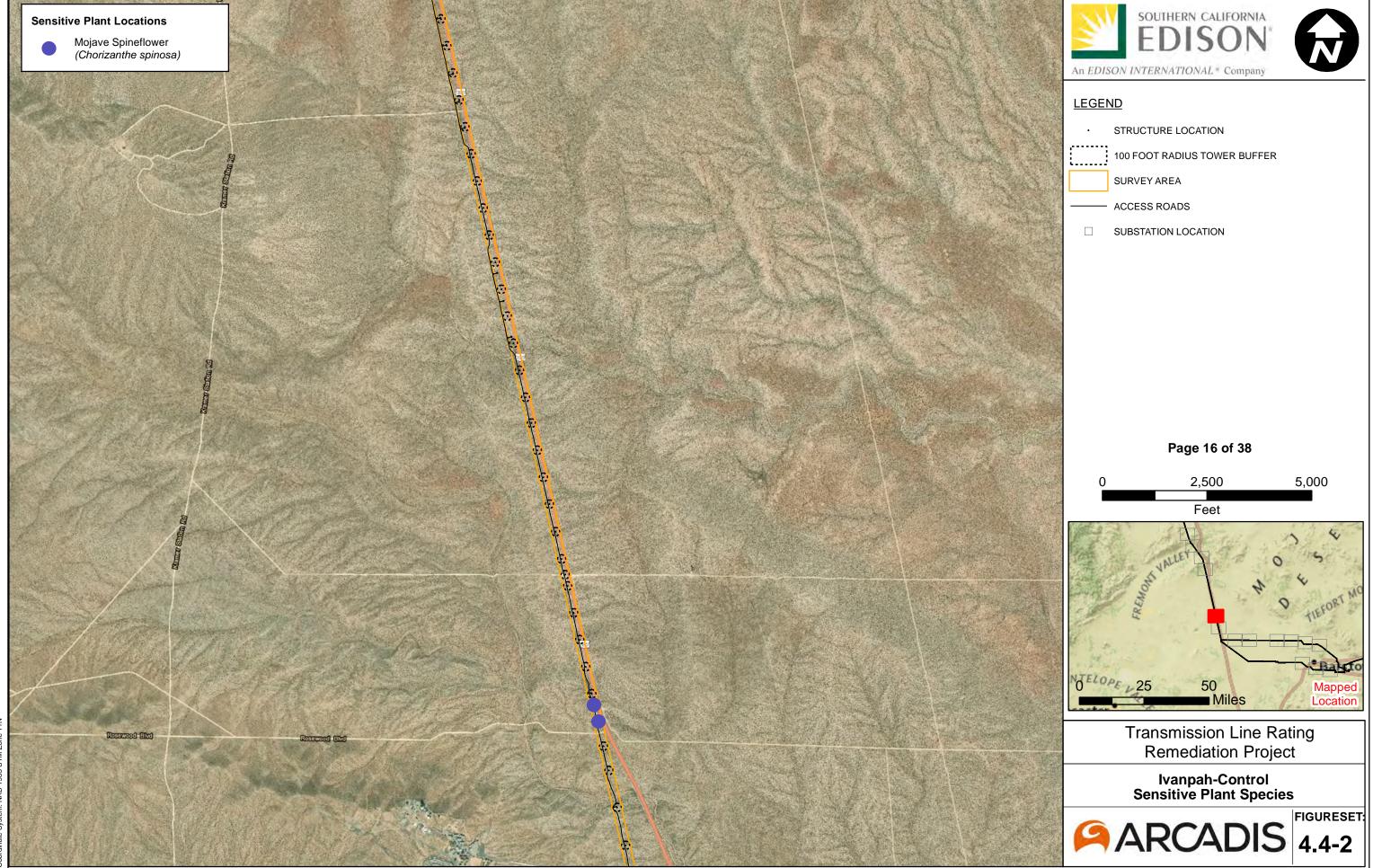


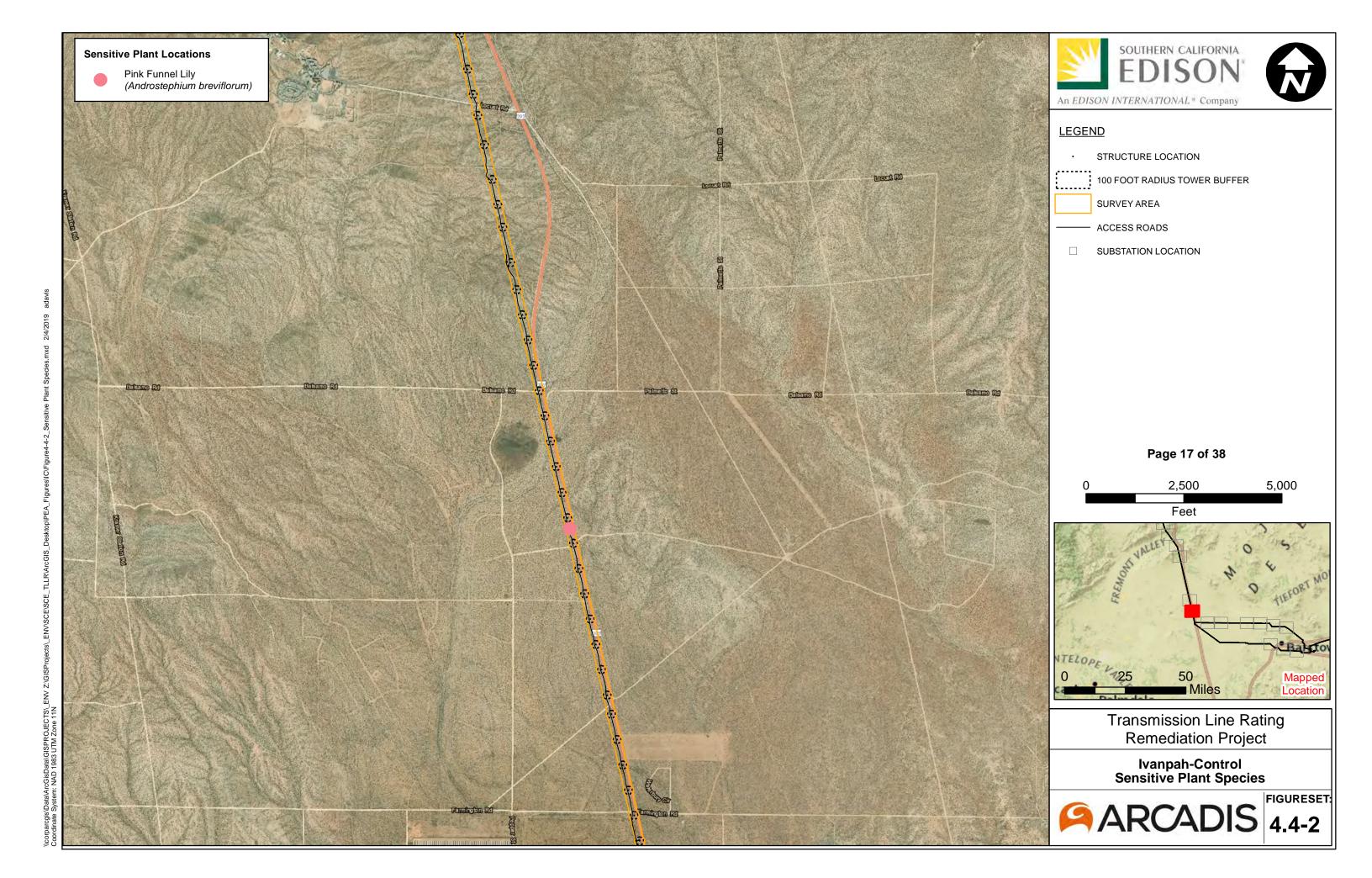


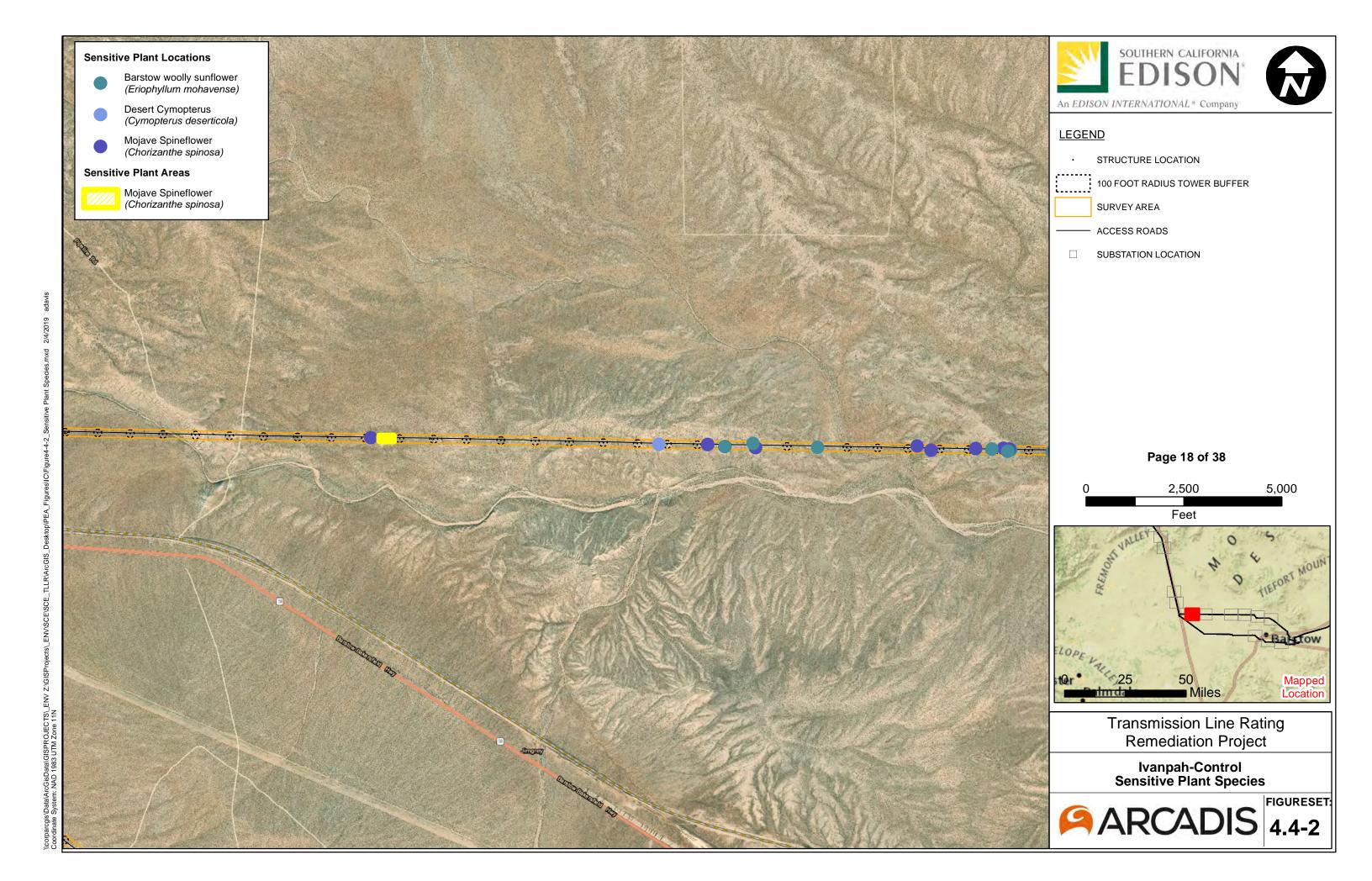


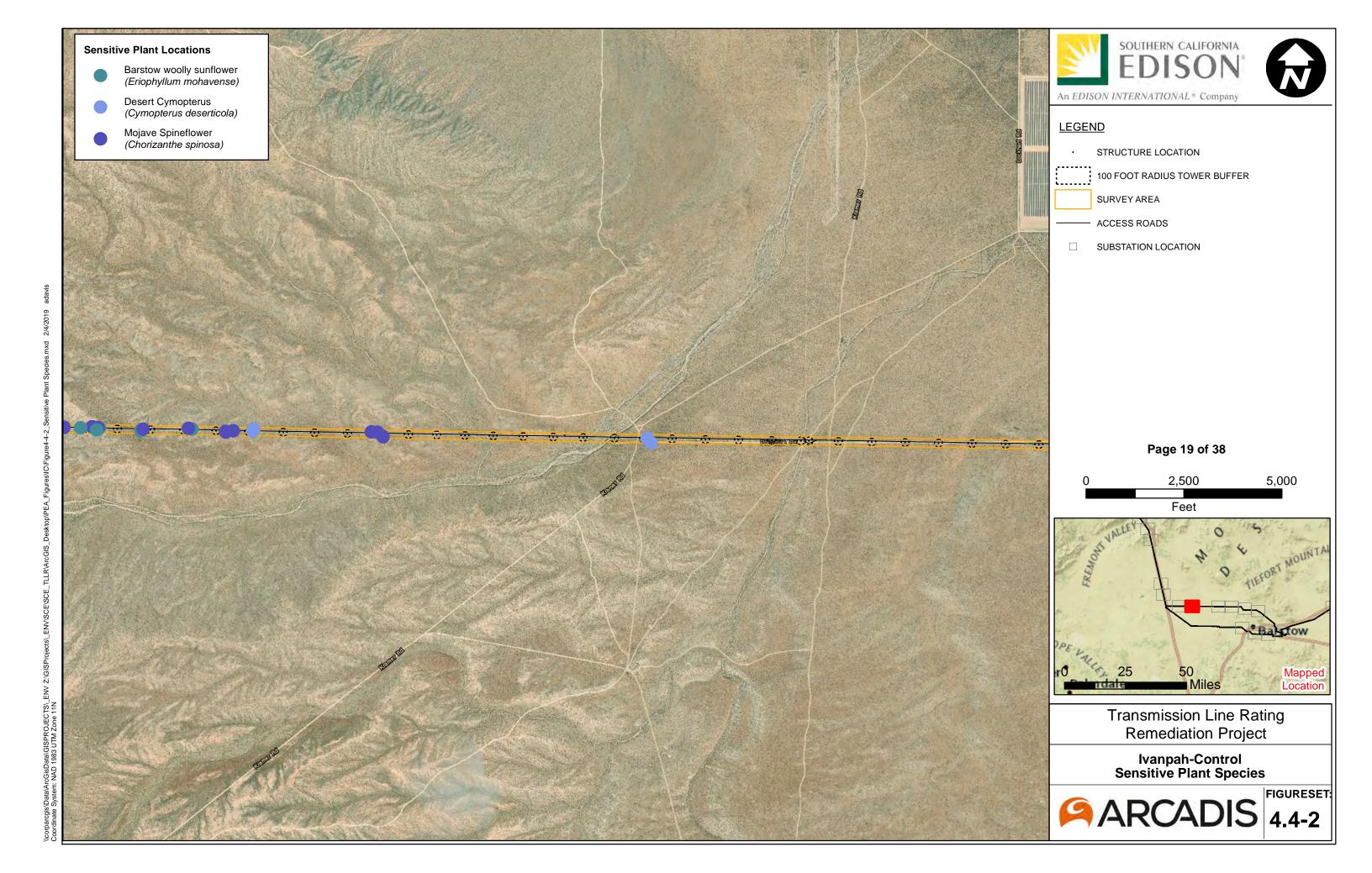
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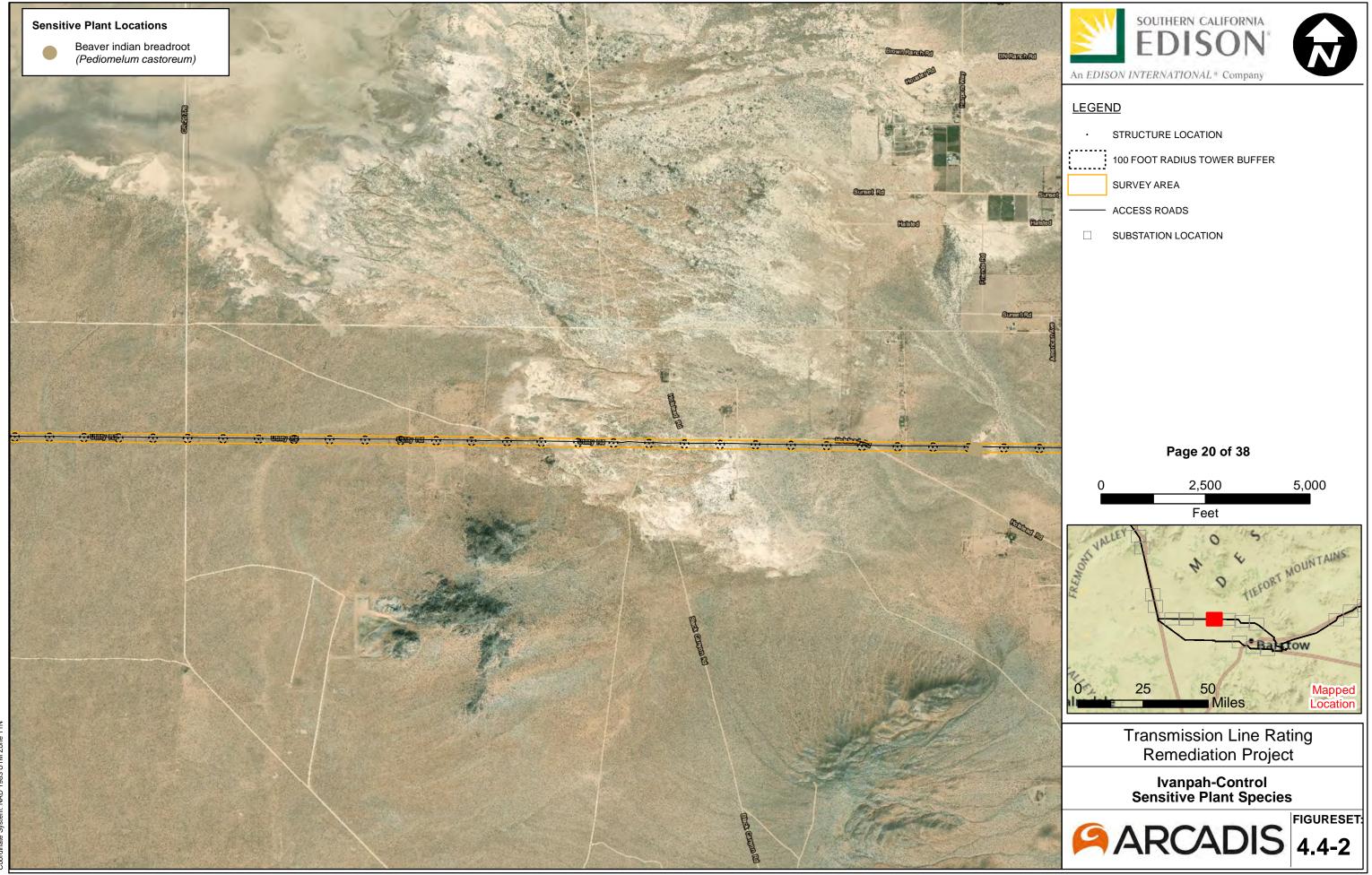


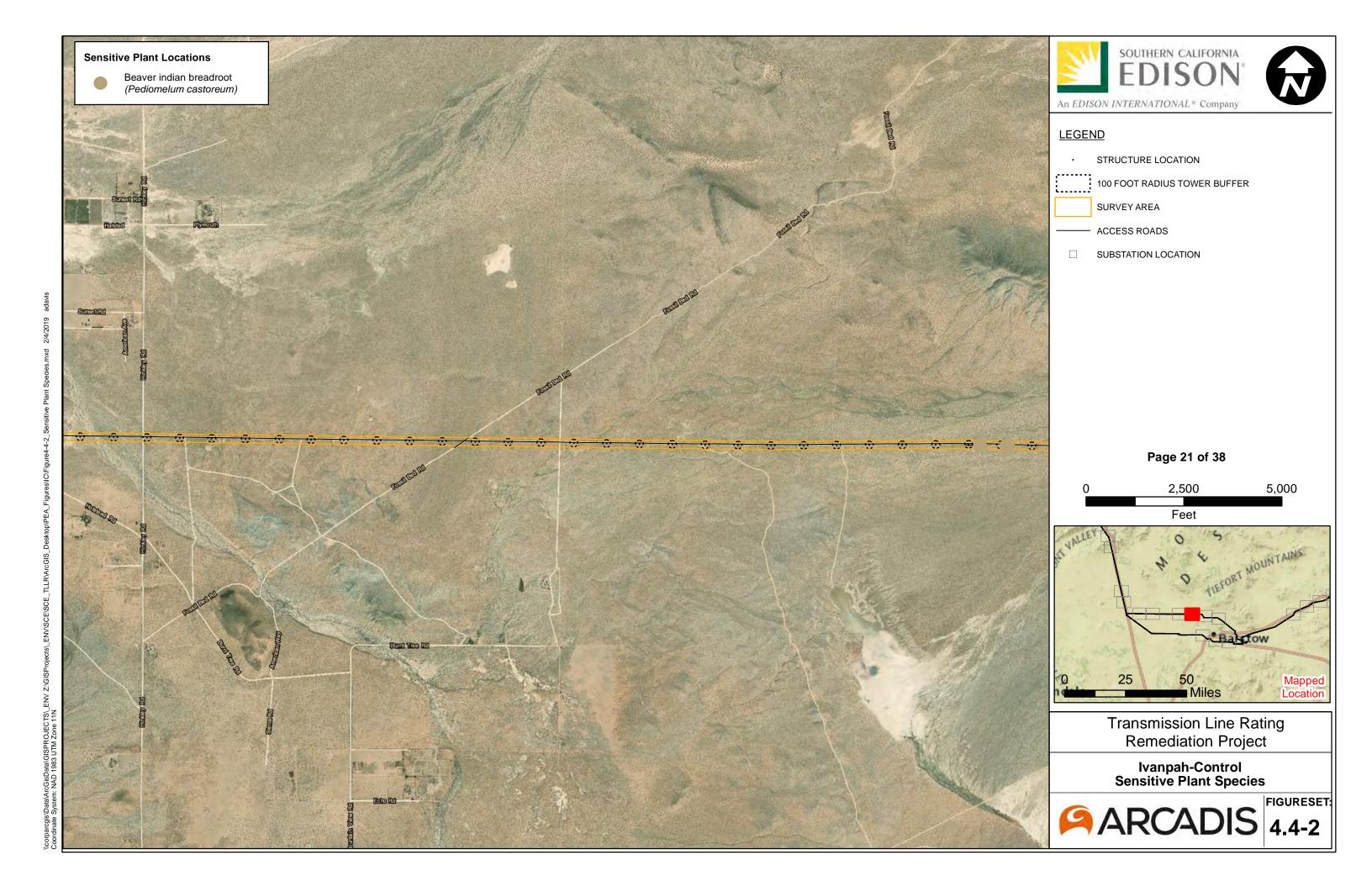


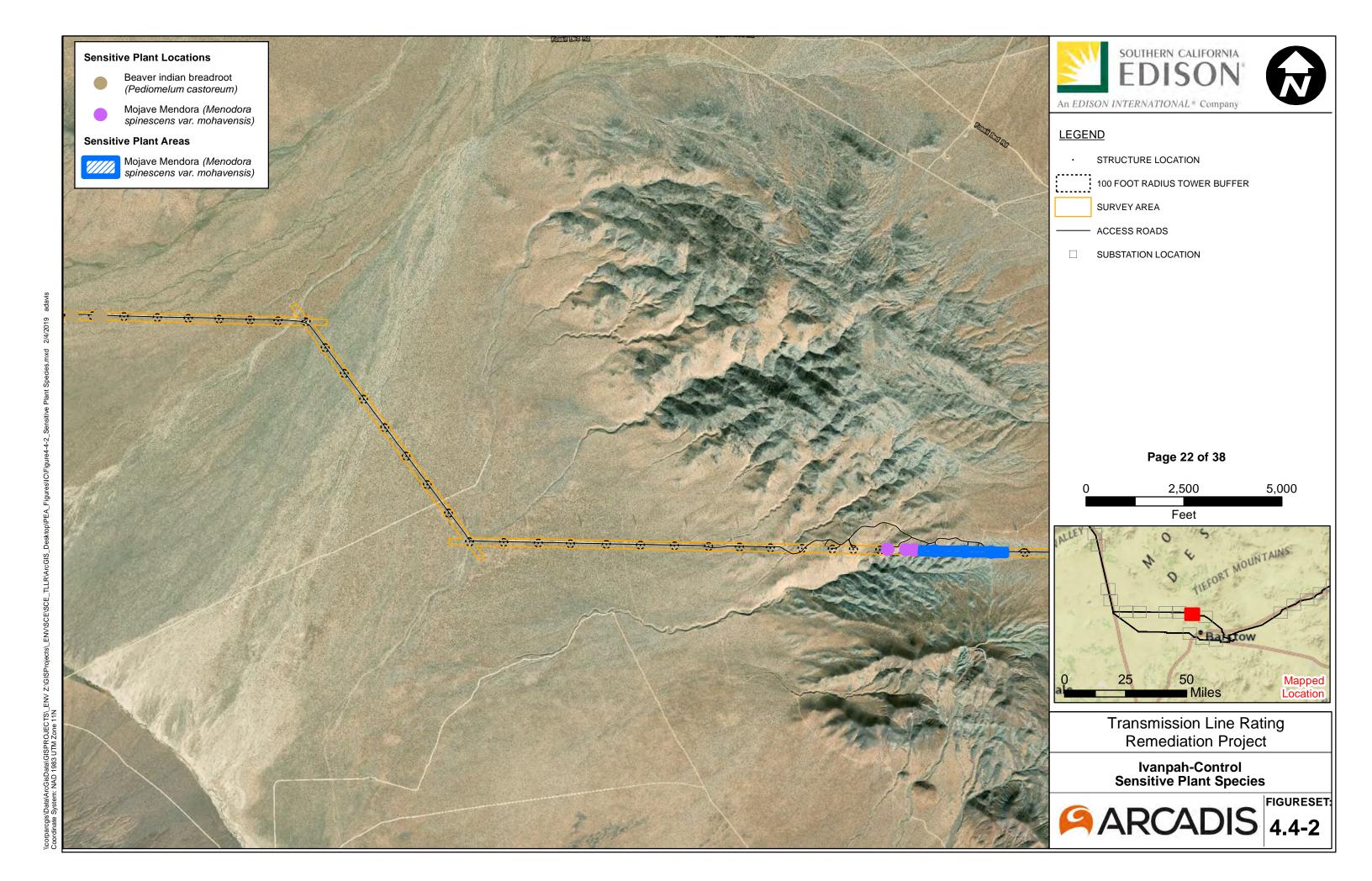




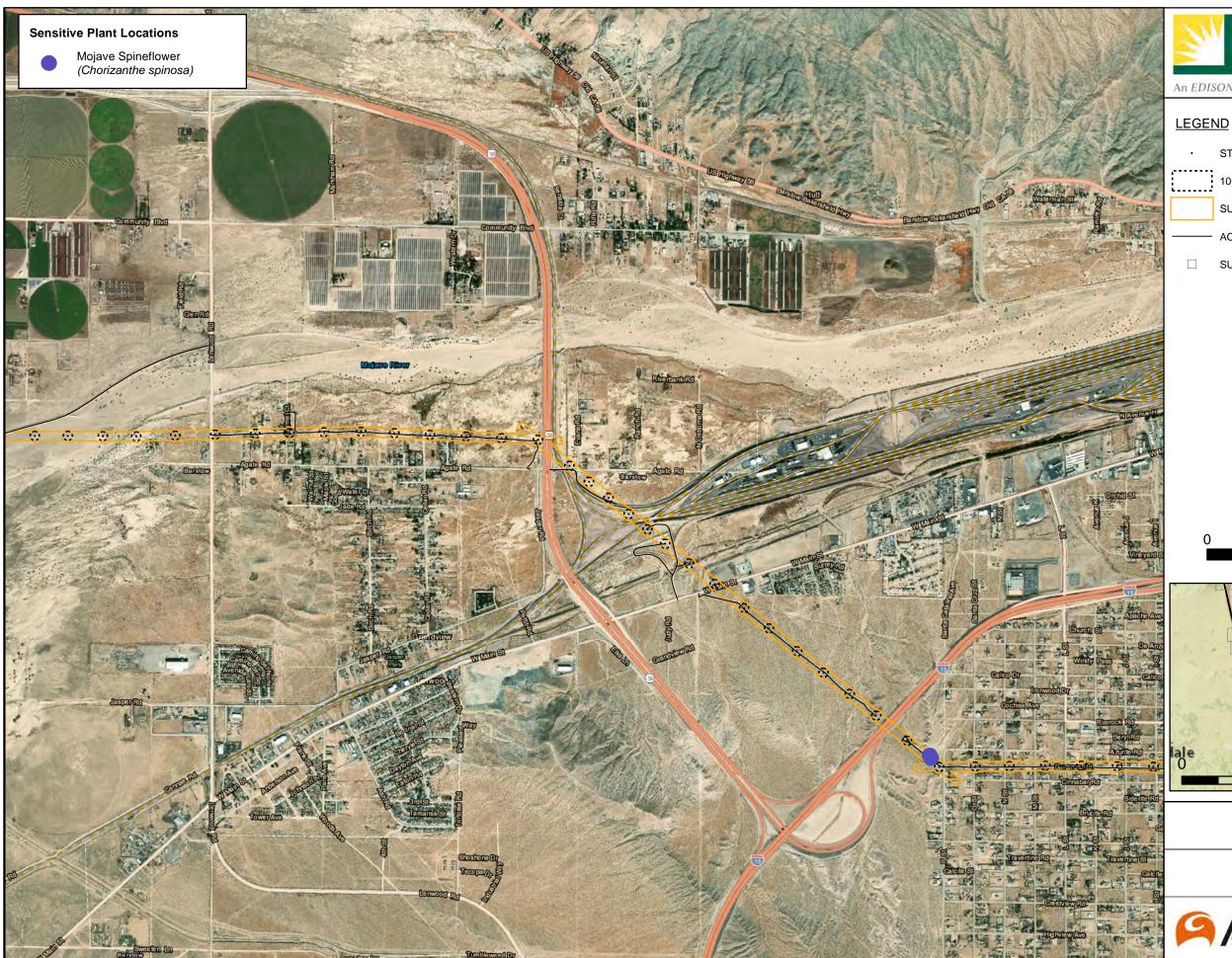














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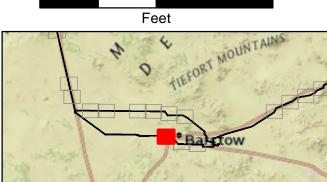
SURVEY AREA

ACCESS ROADS

☐ SUBSTATION LOCATION

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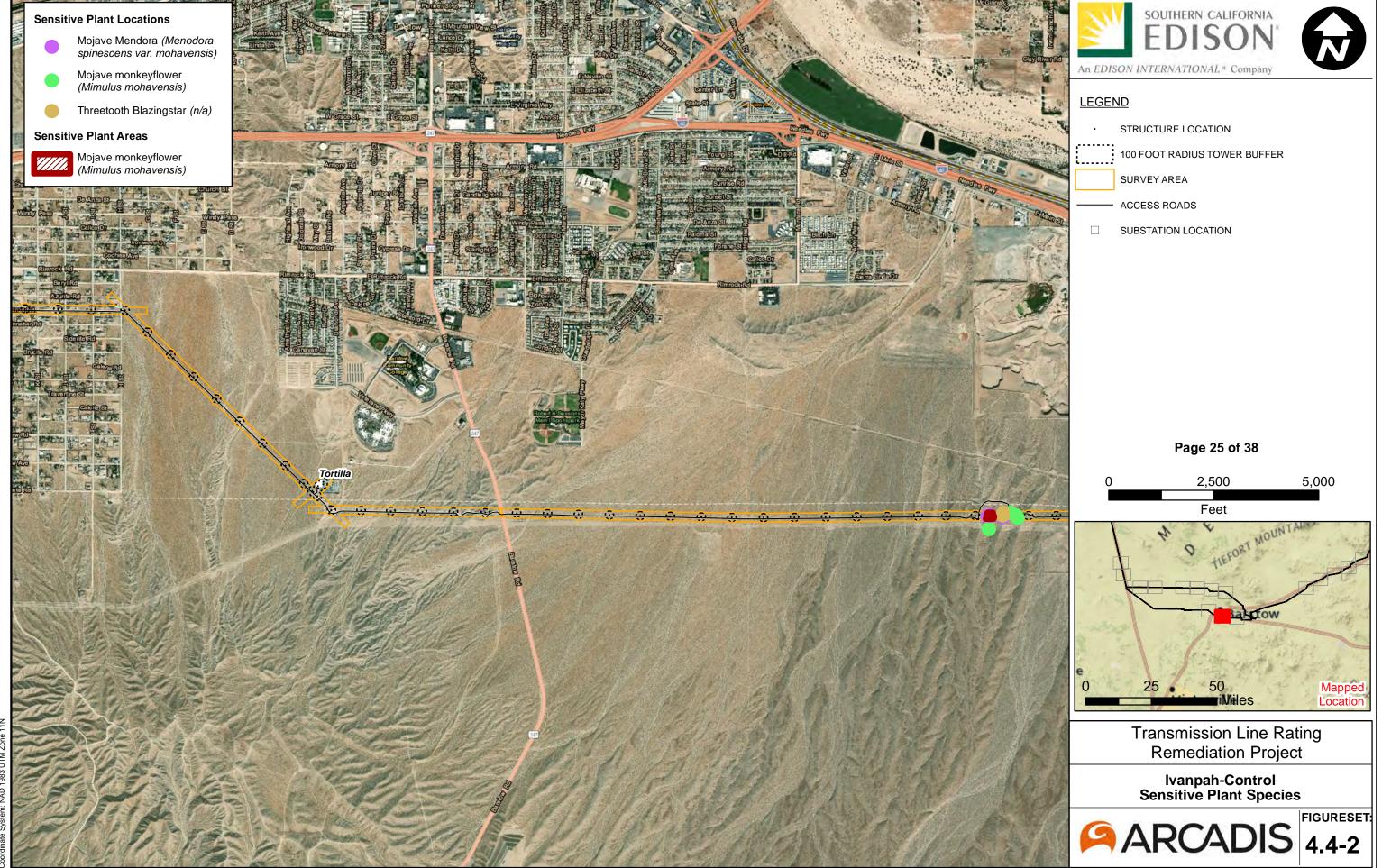


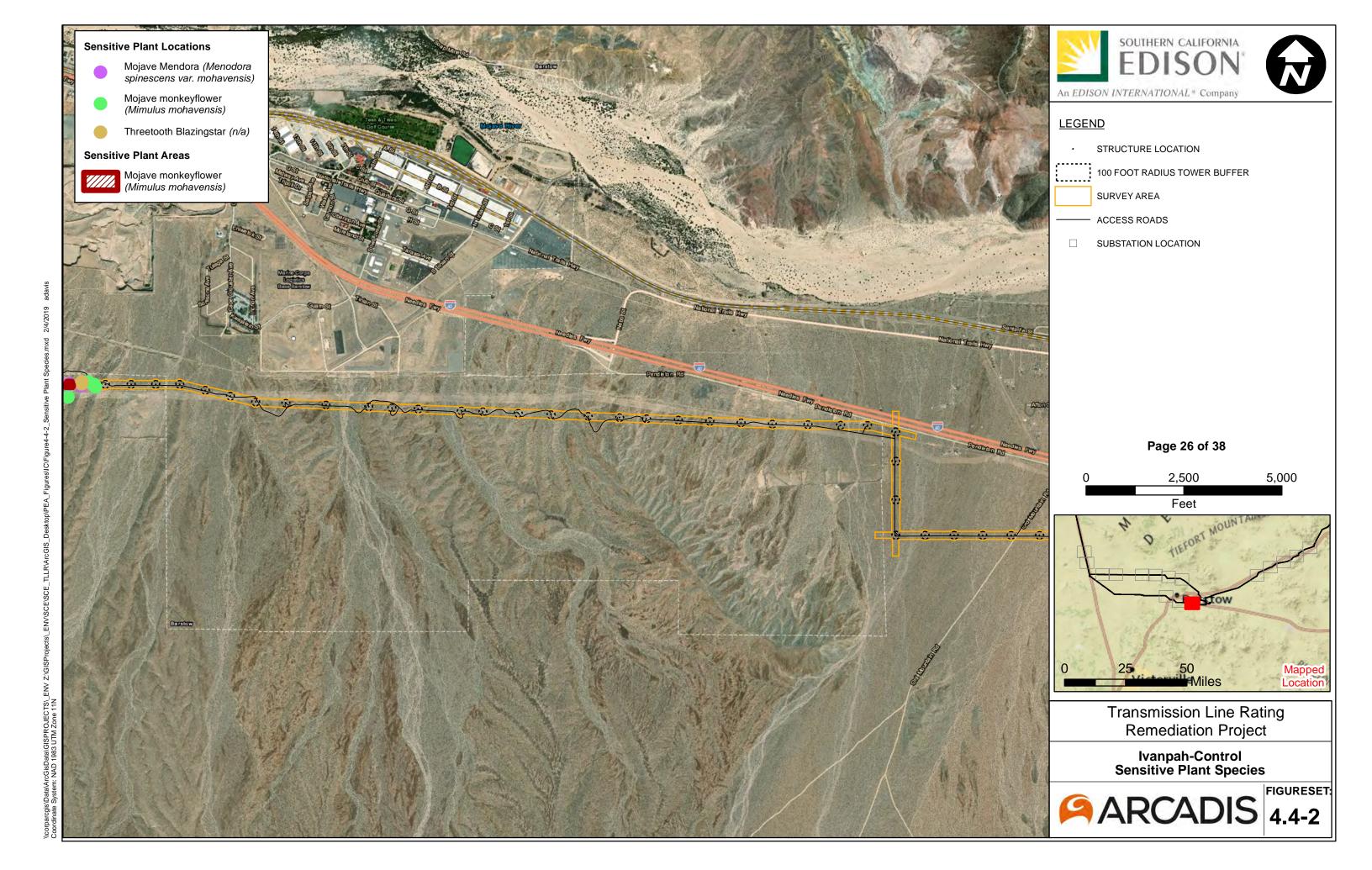
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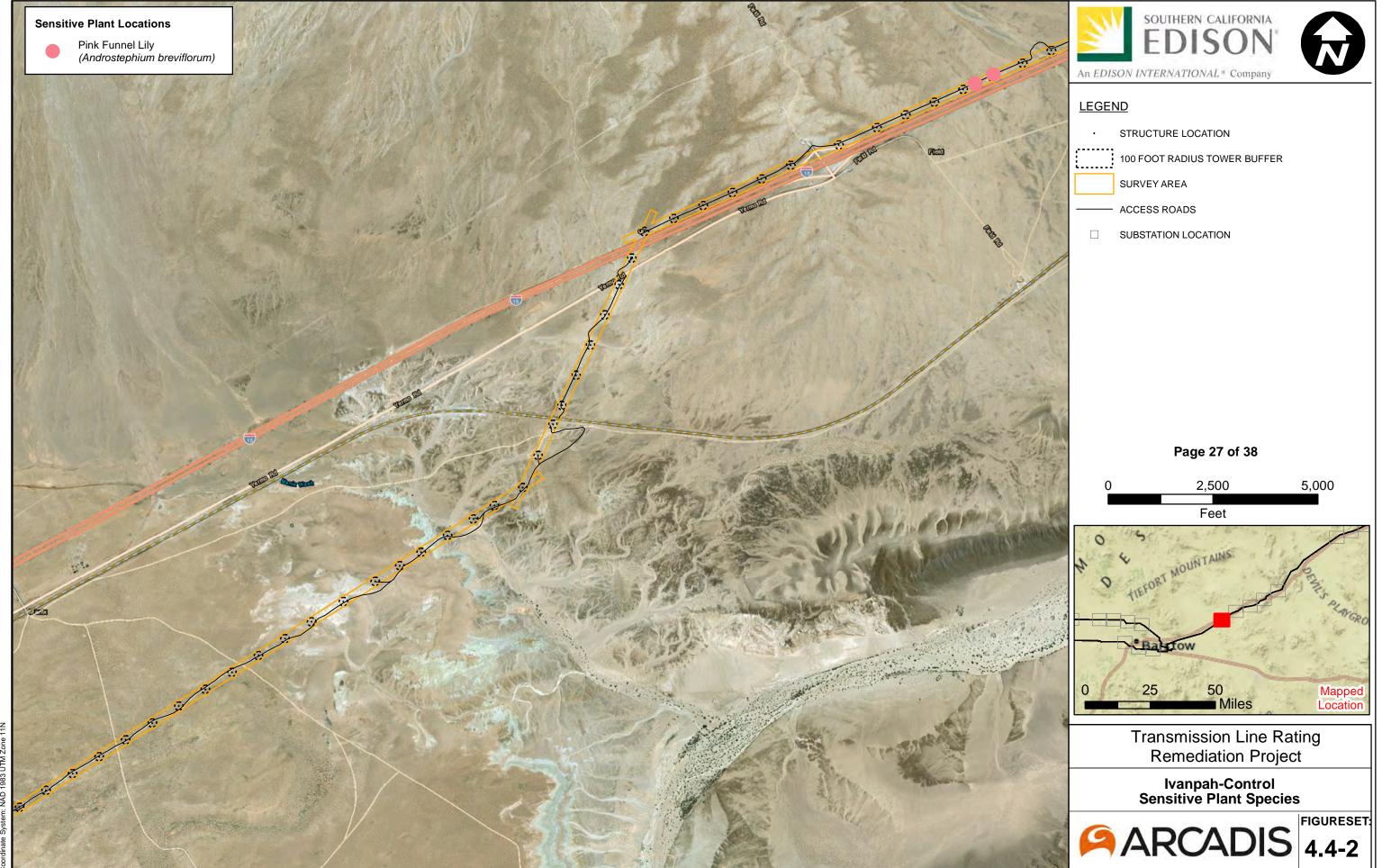
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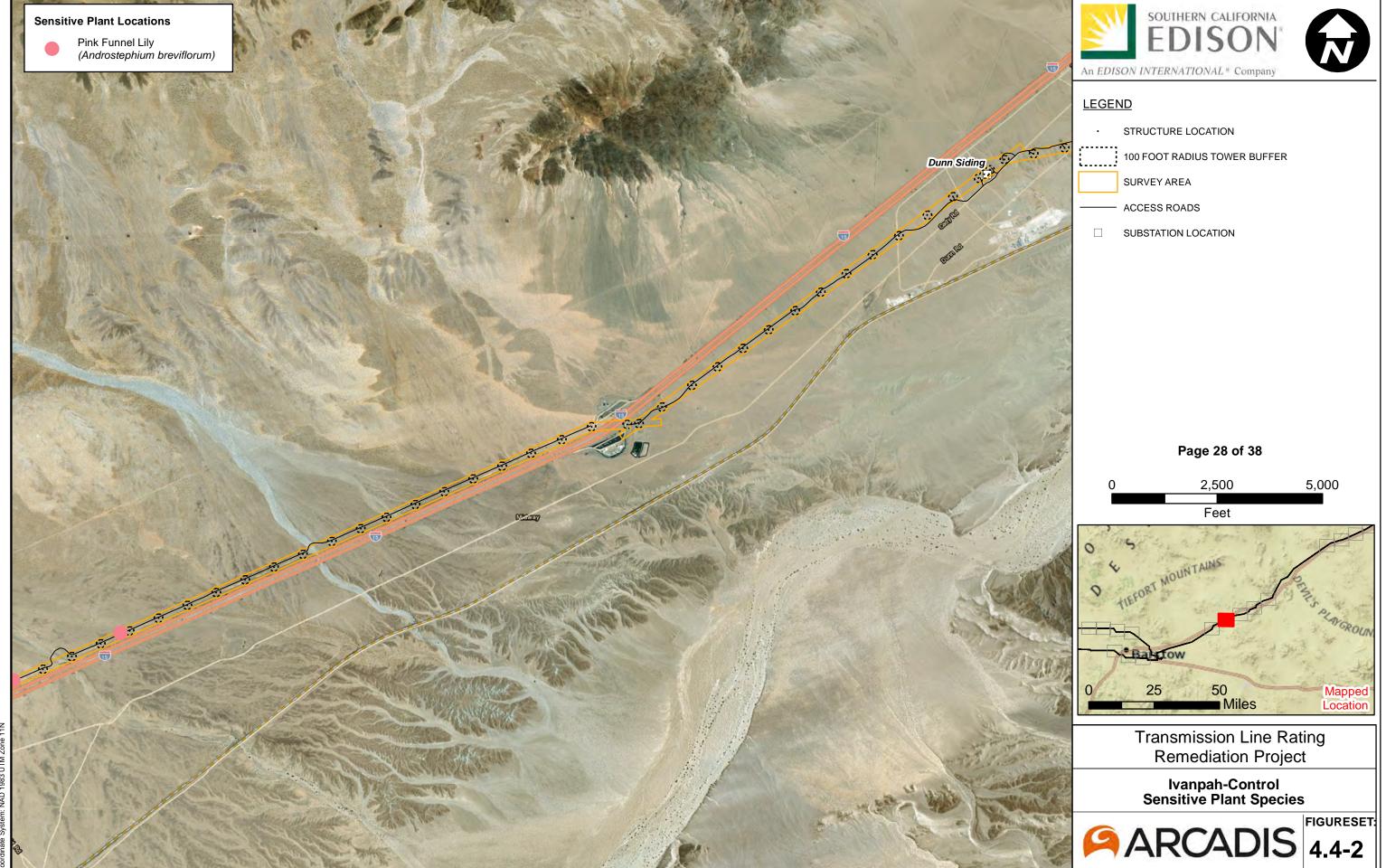


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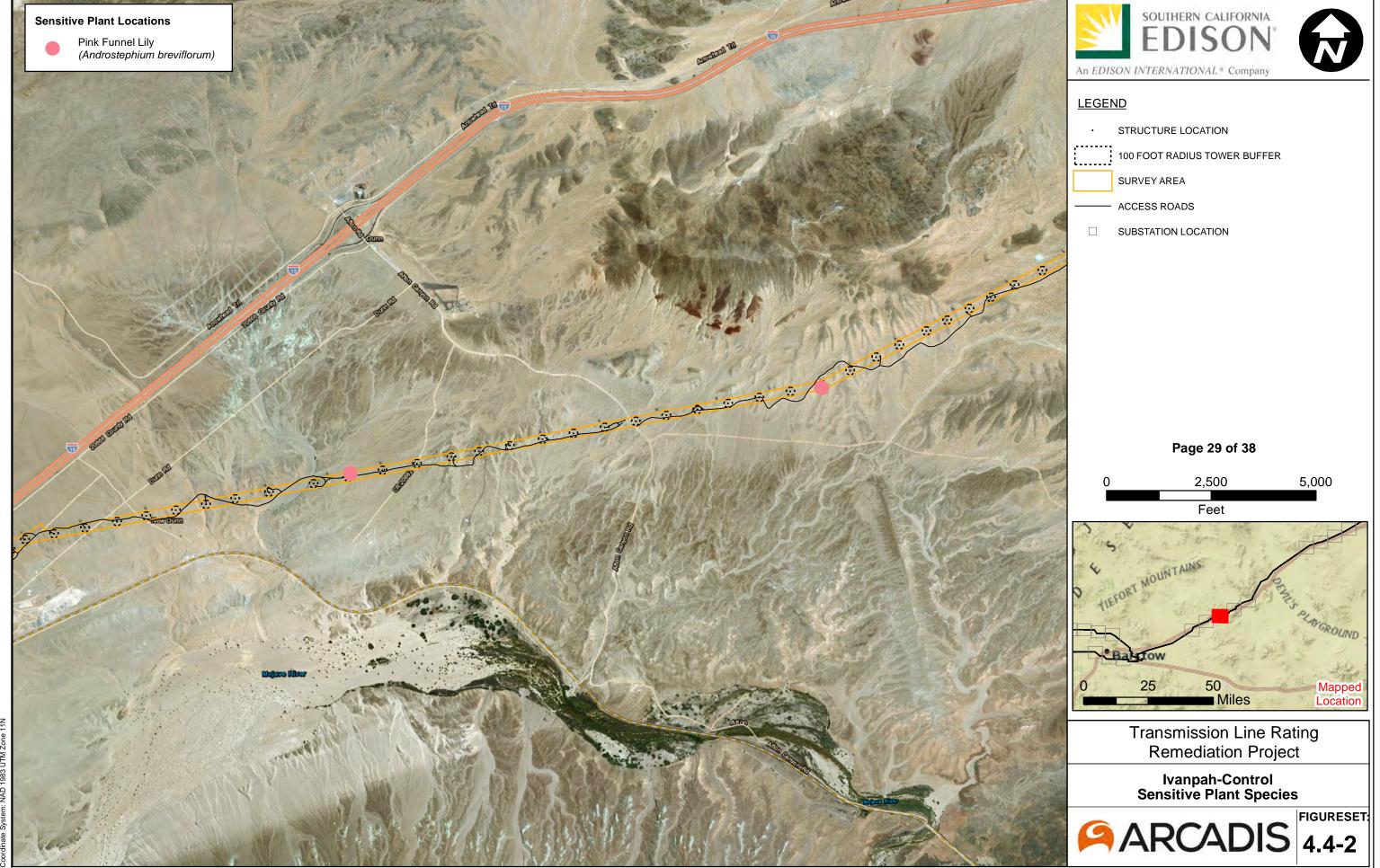




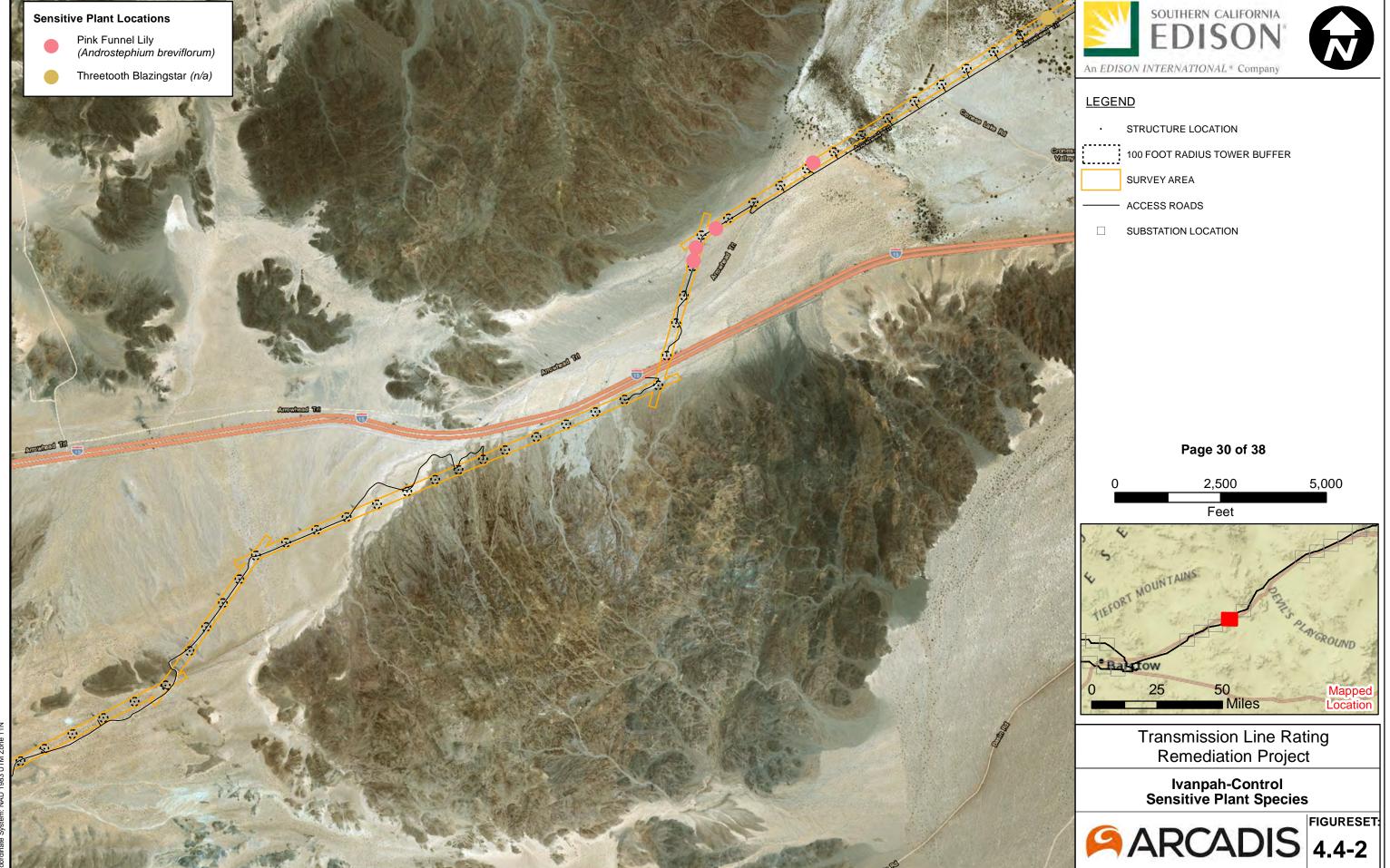




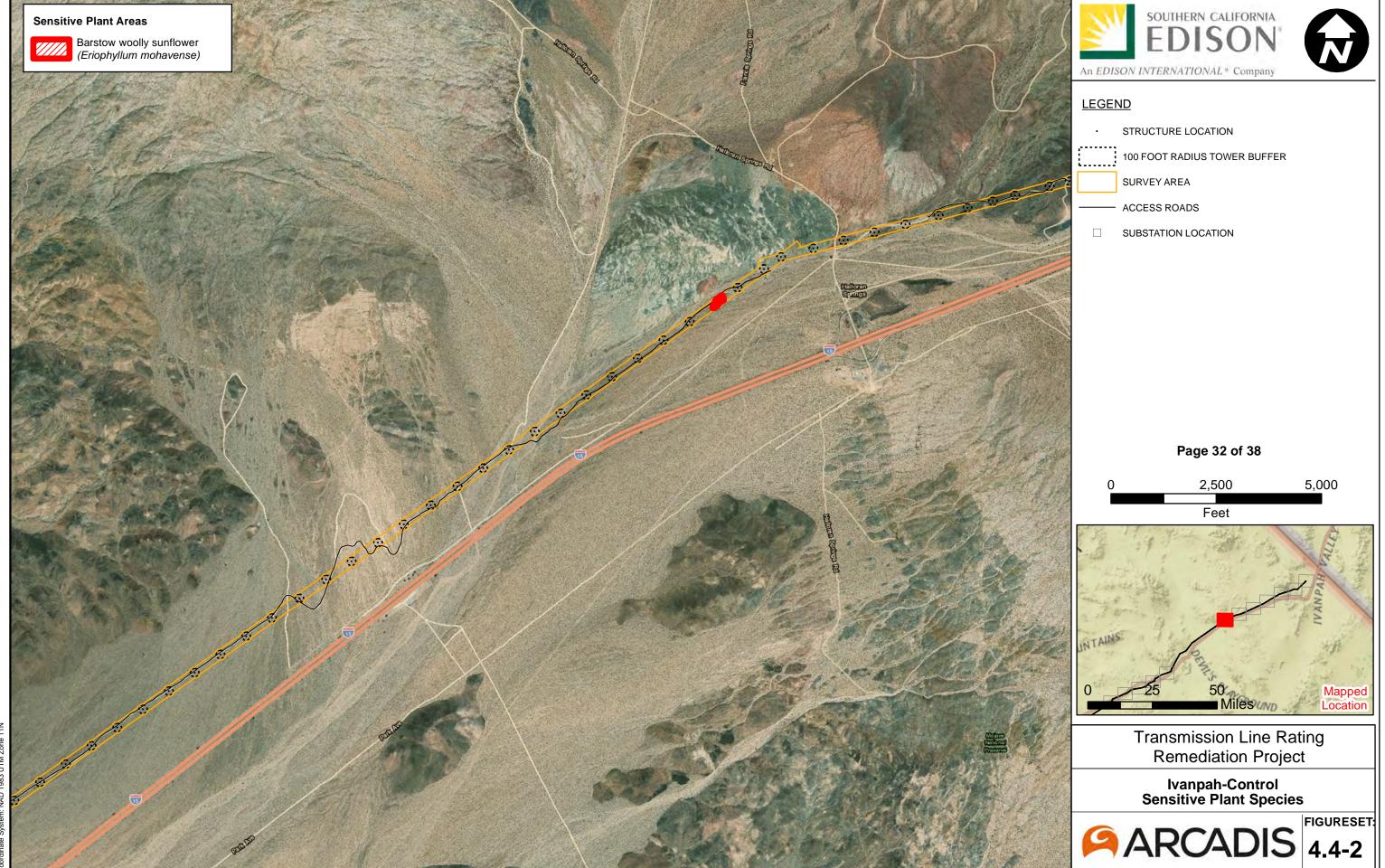
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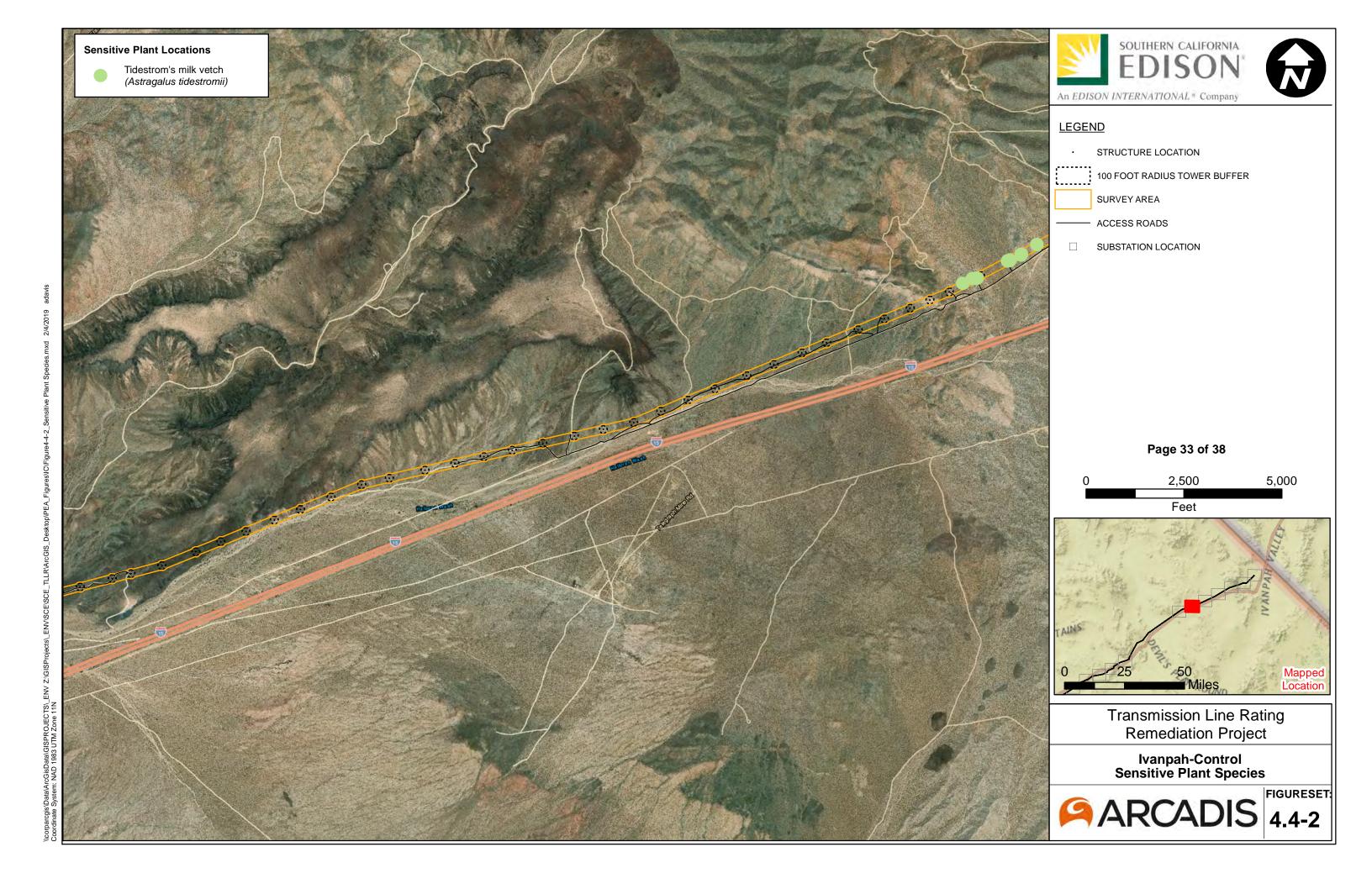


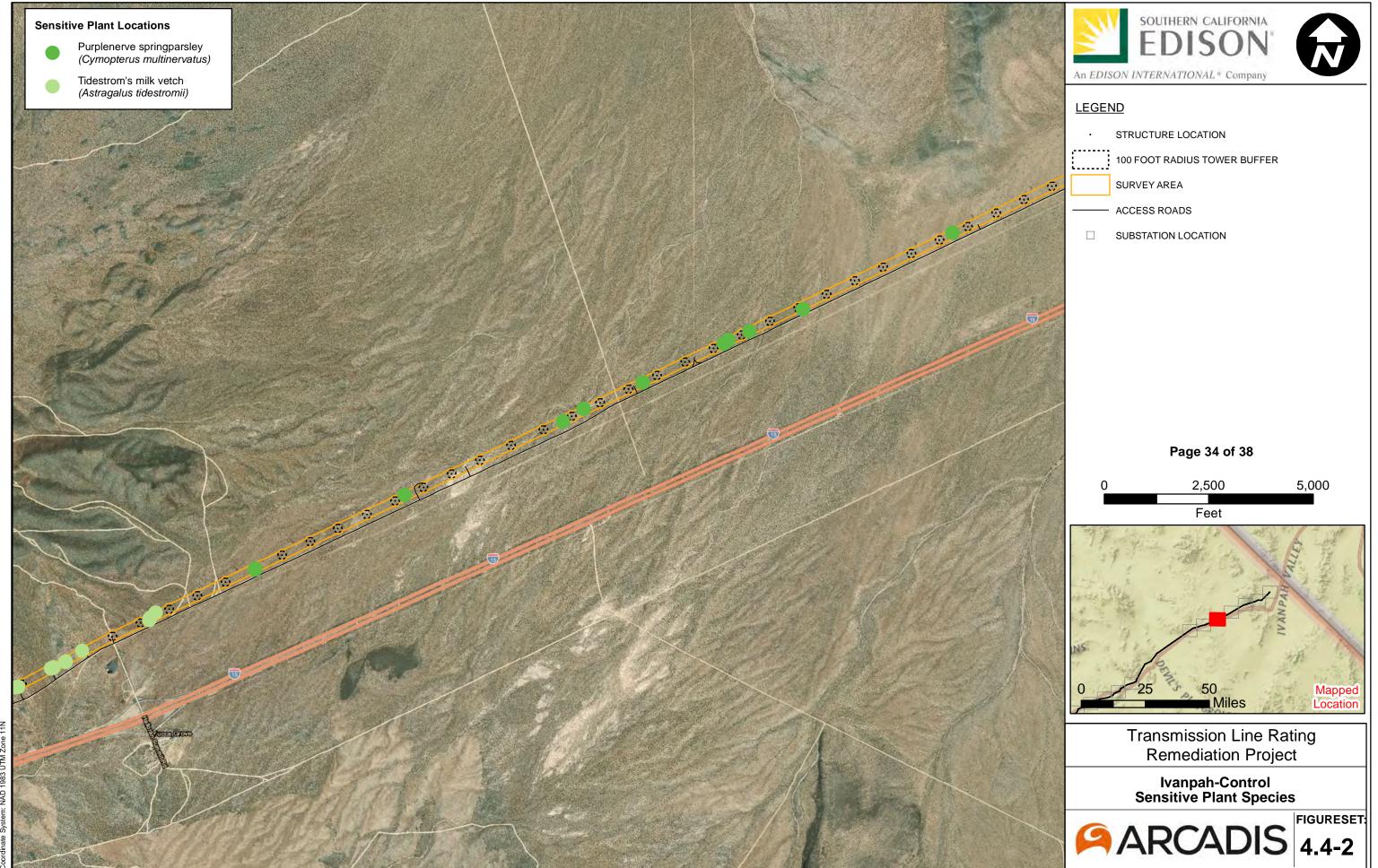
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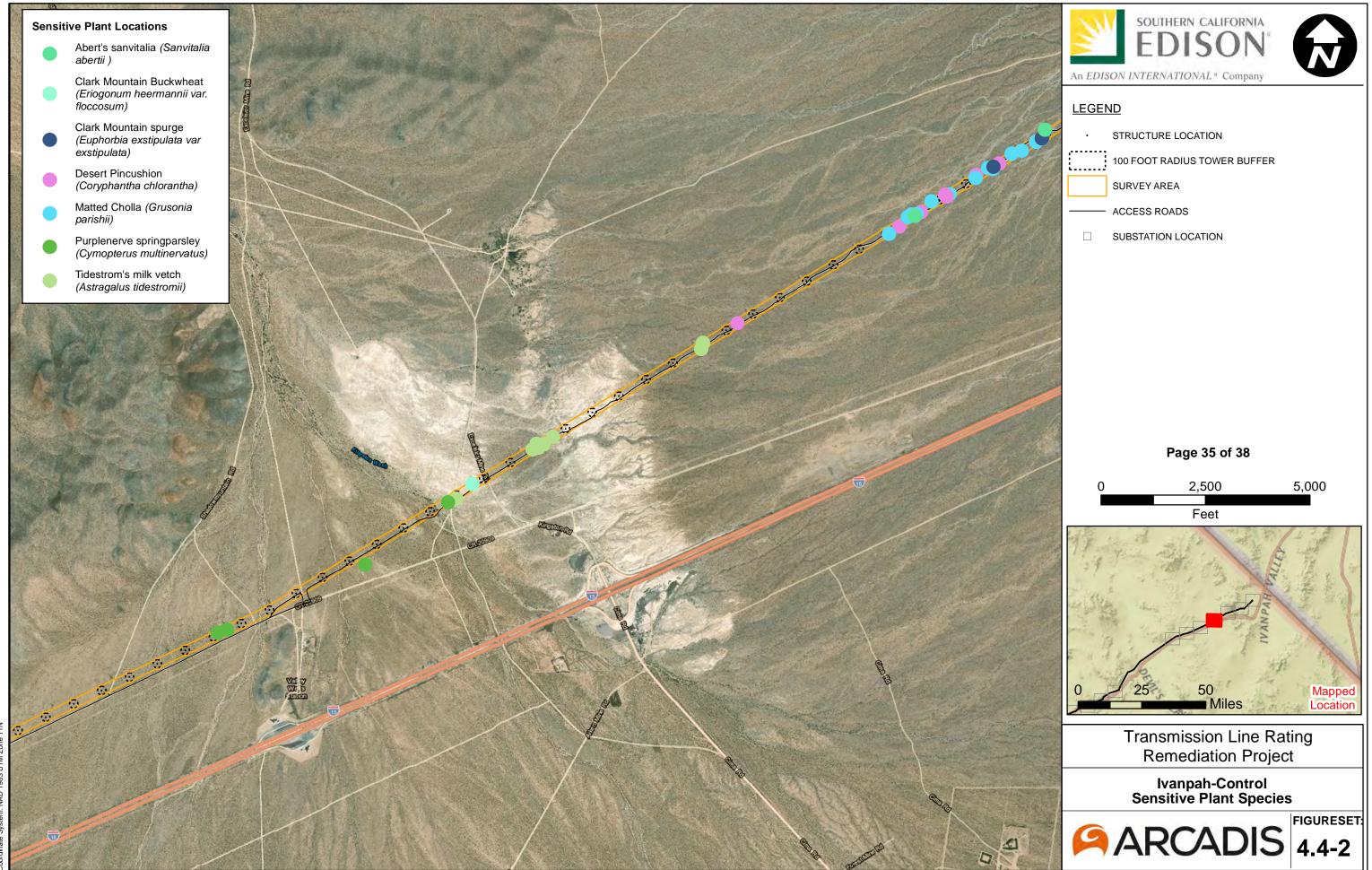




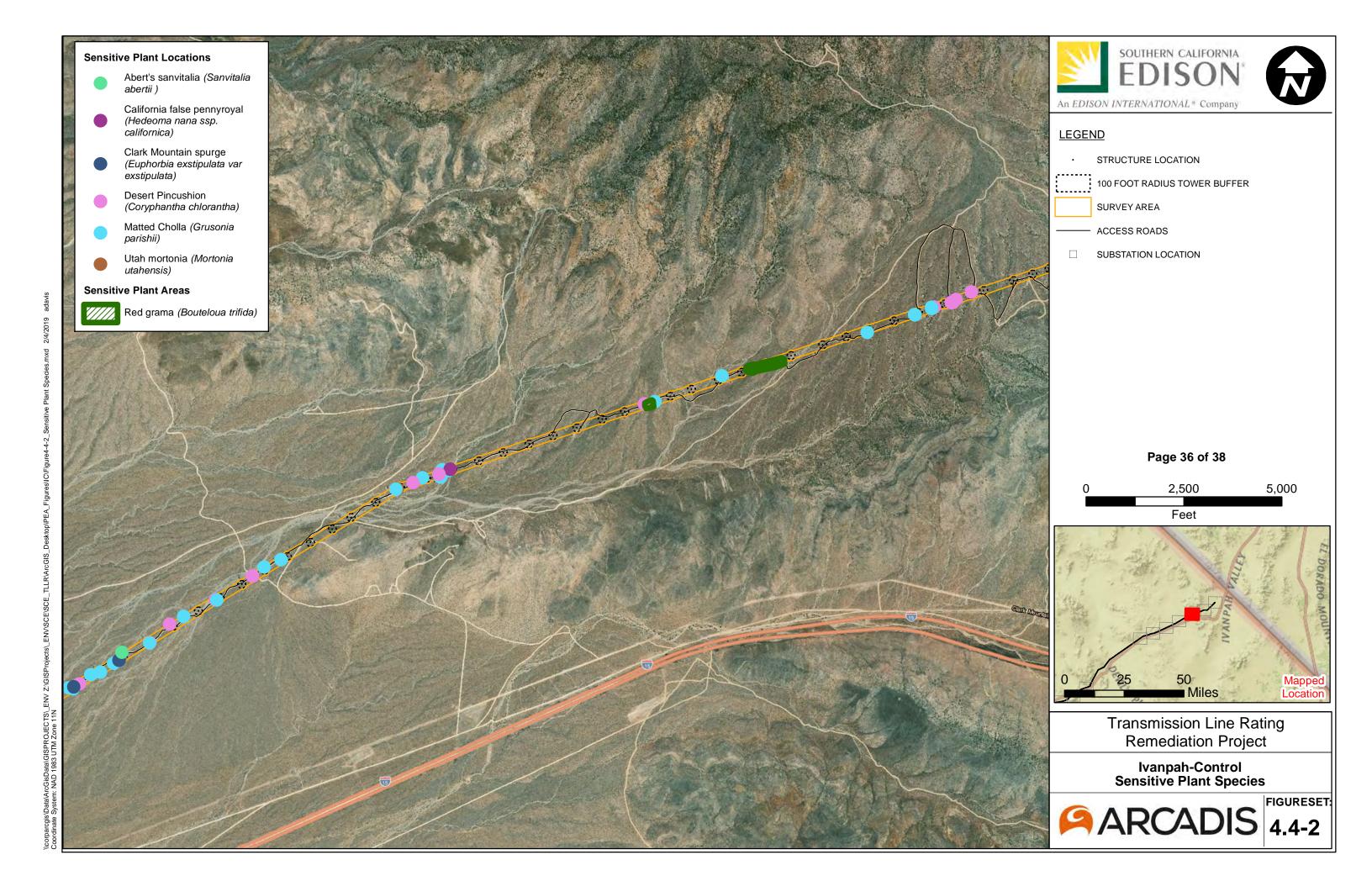


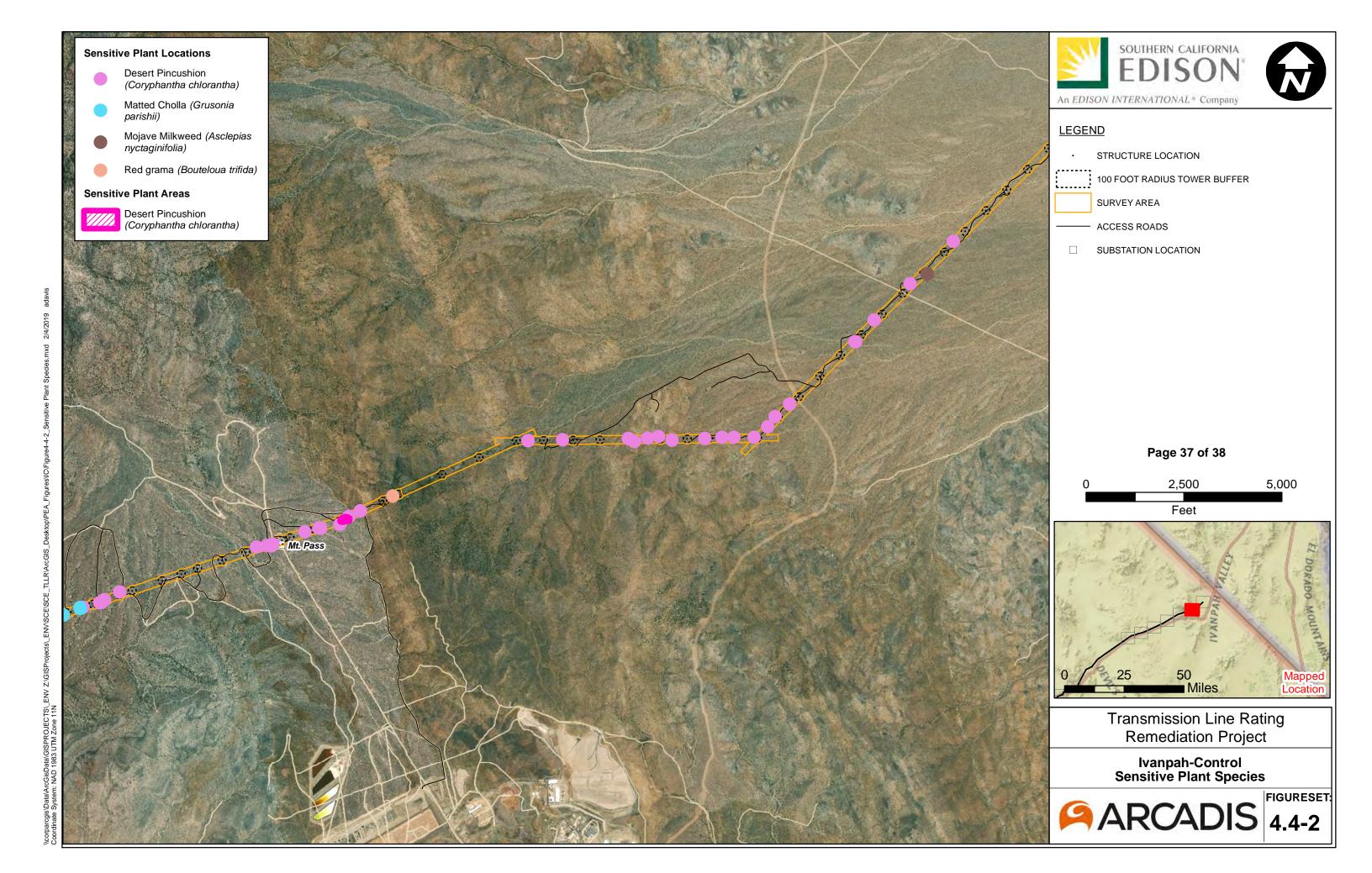


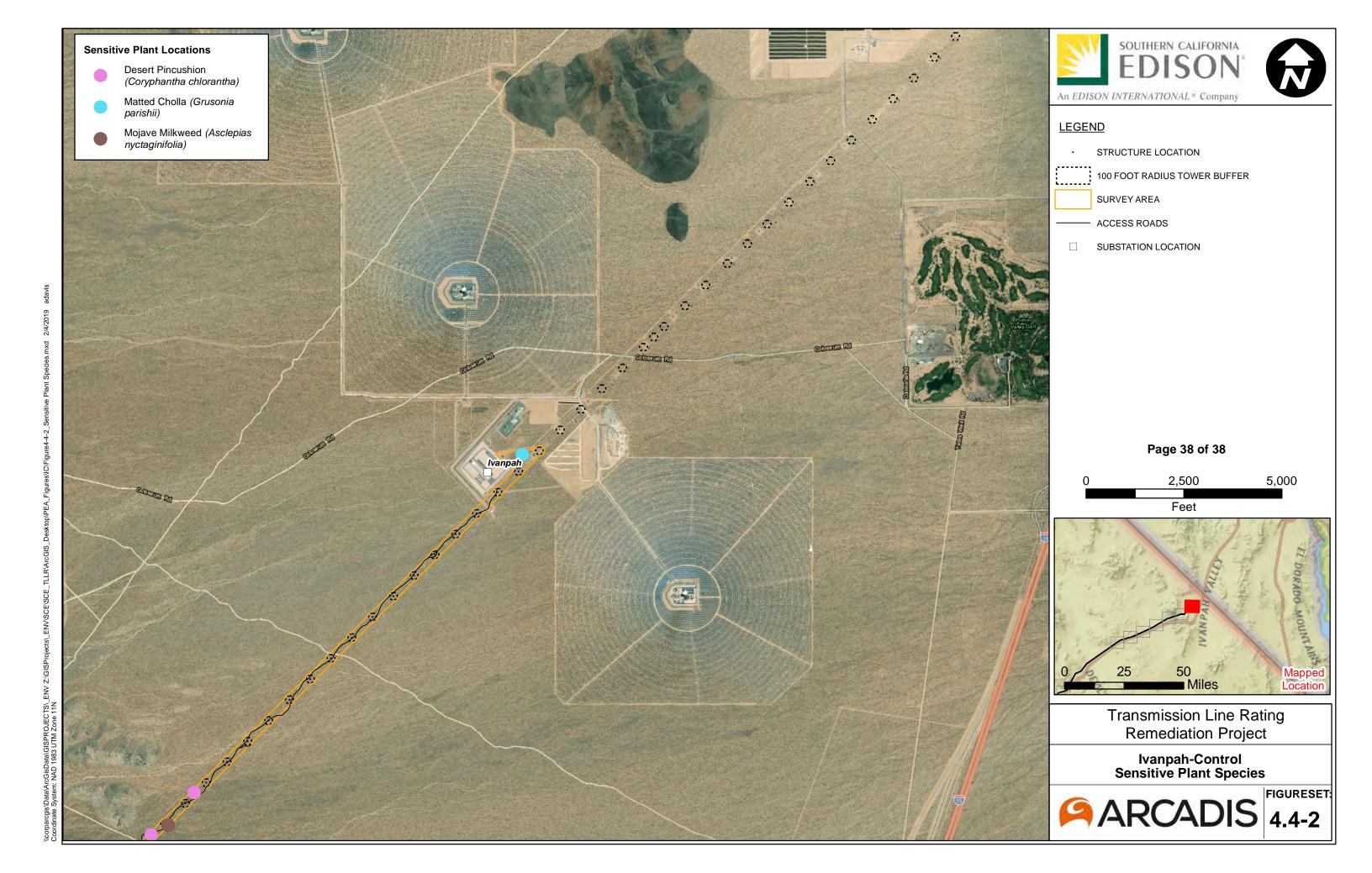
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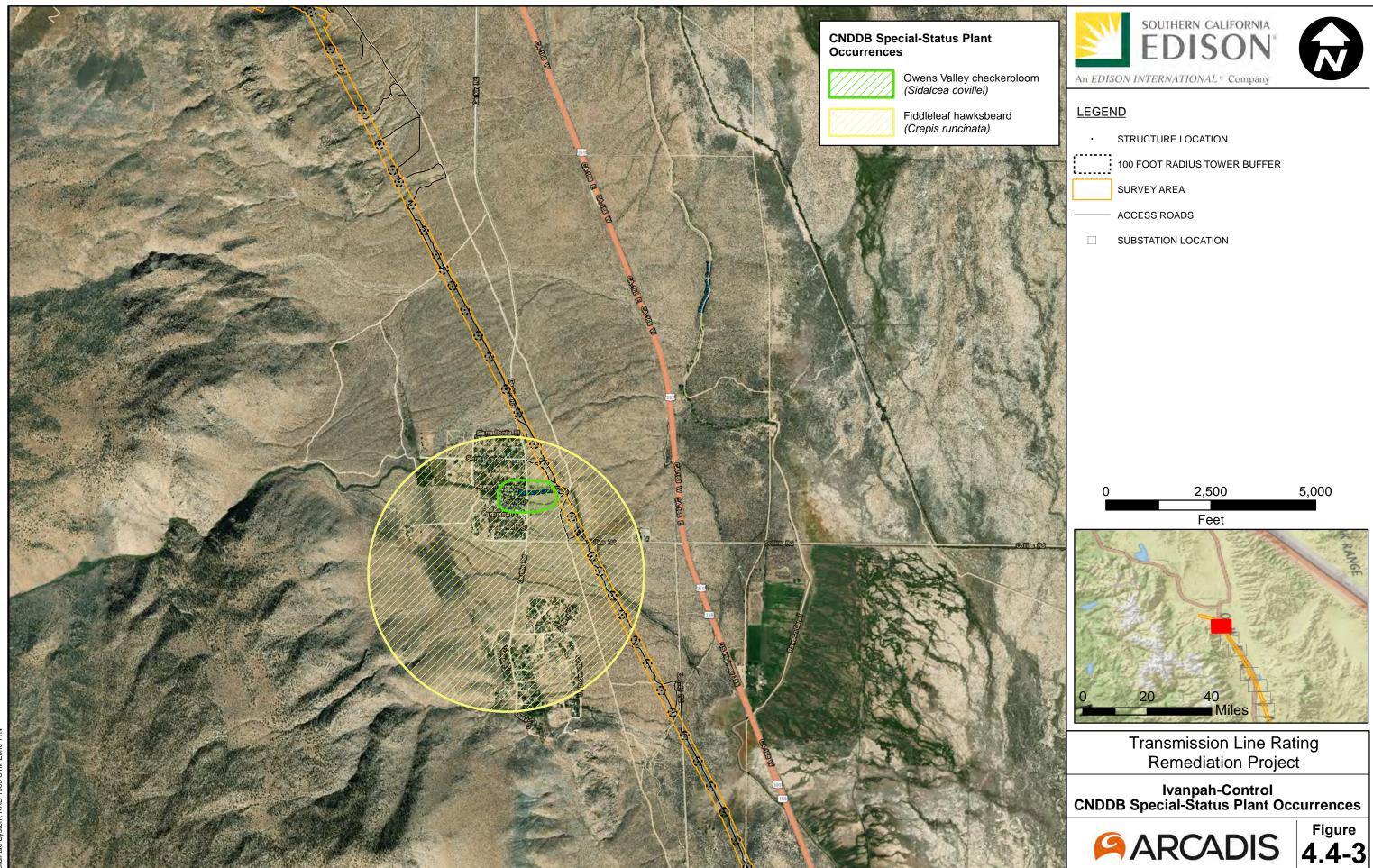


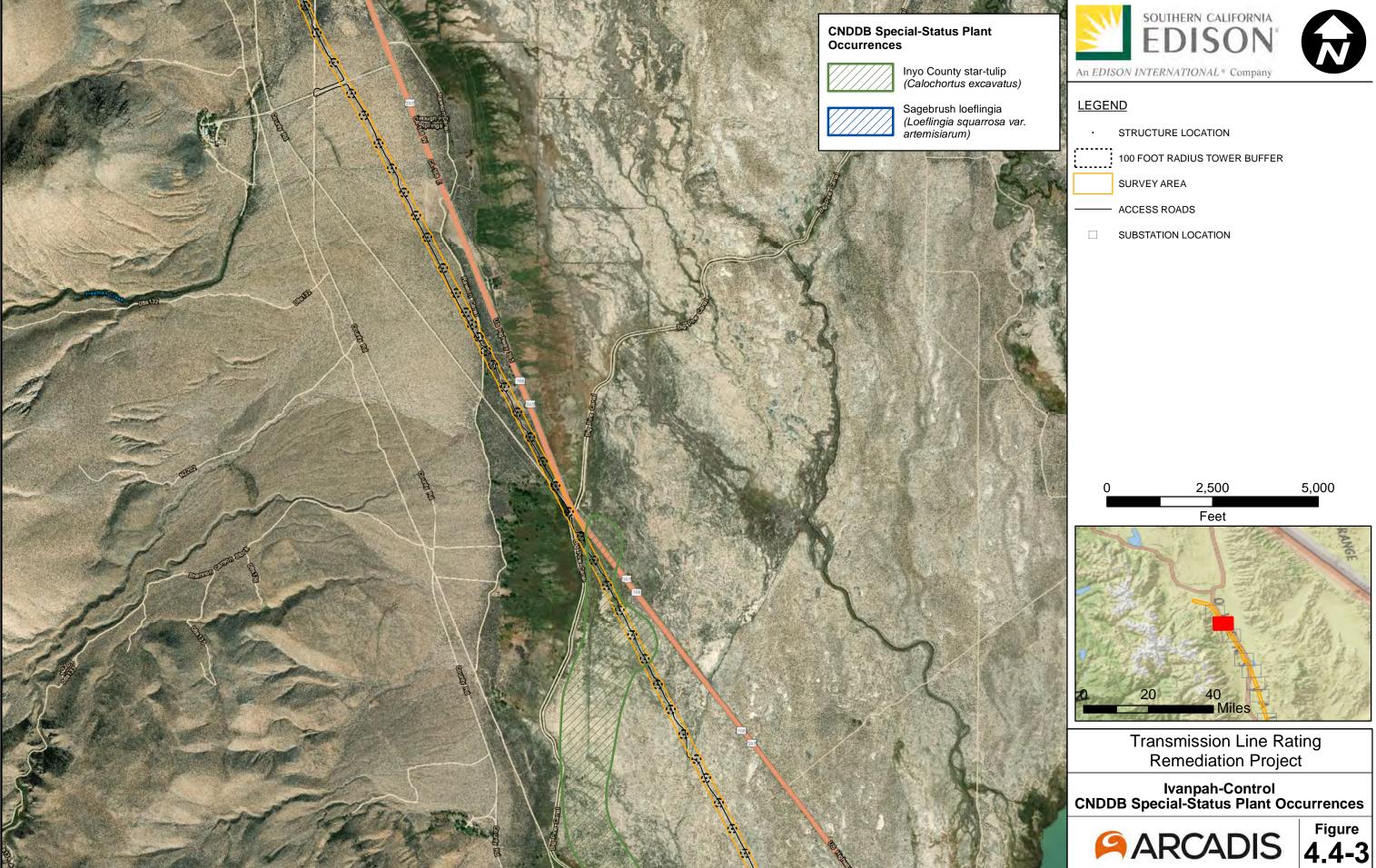
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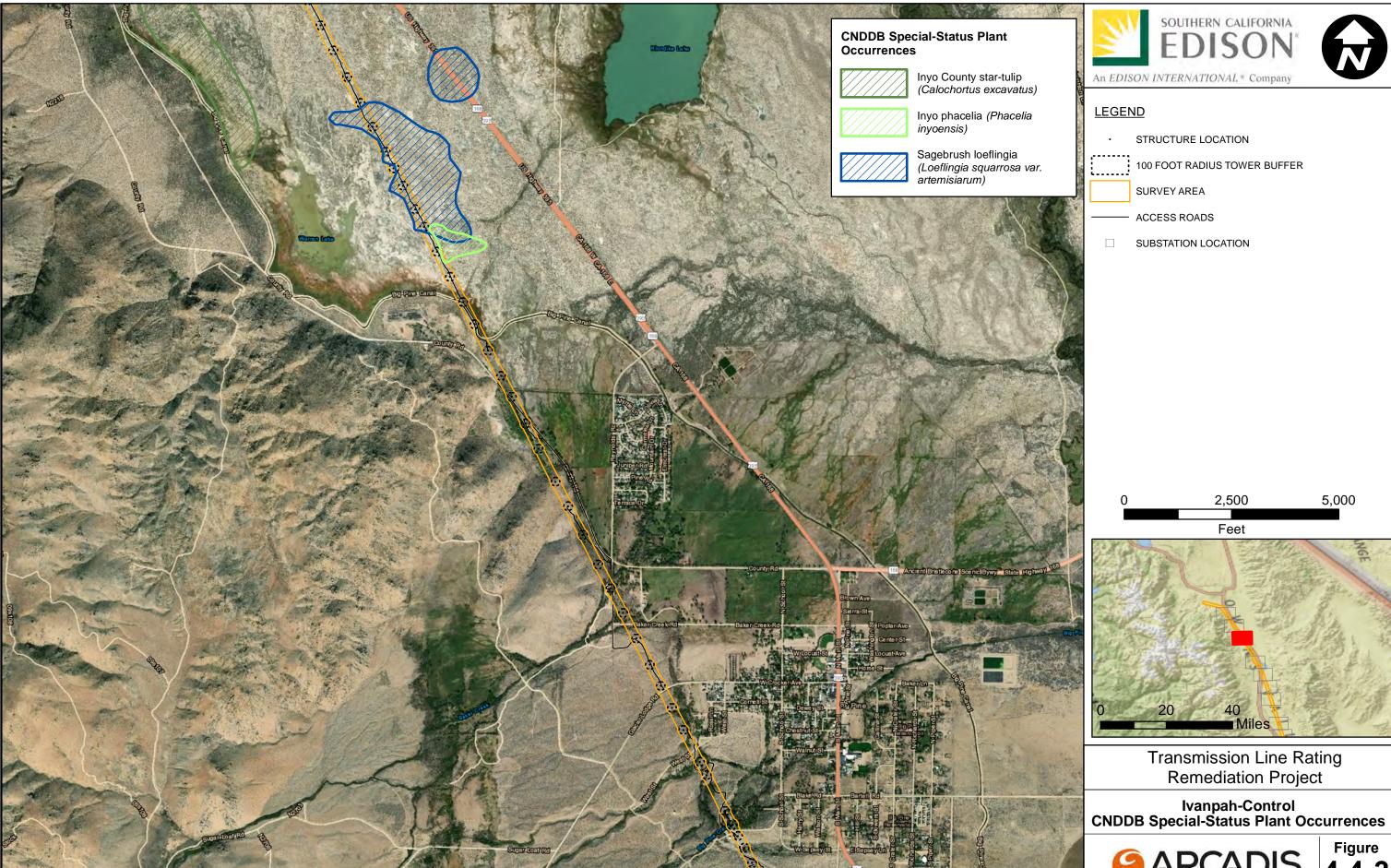




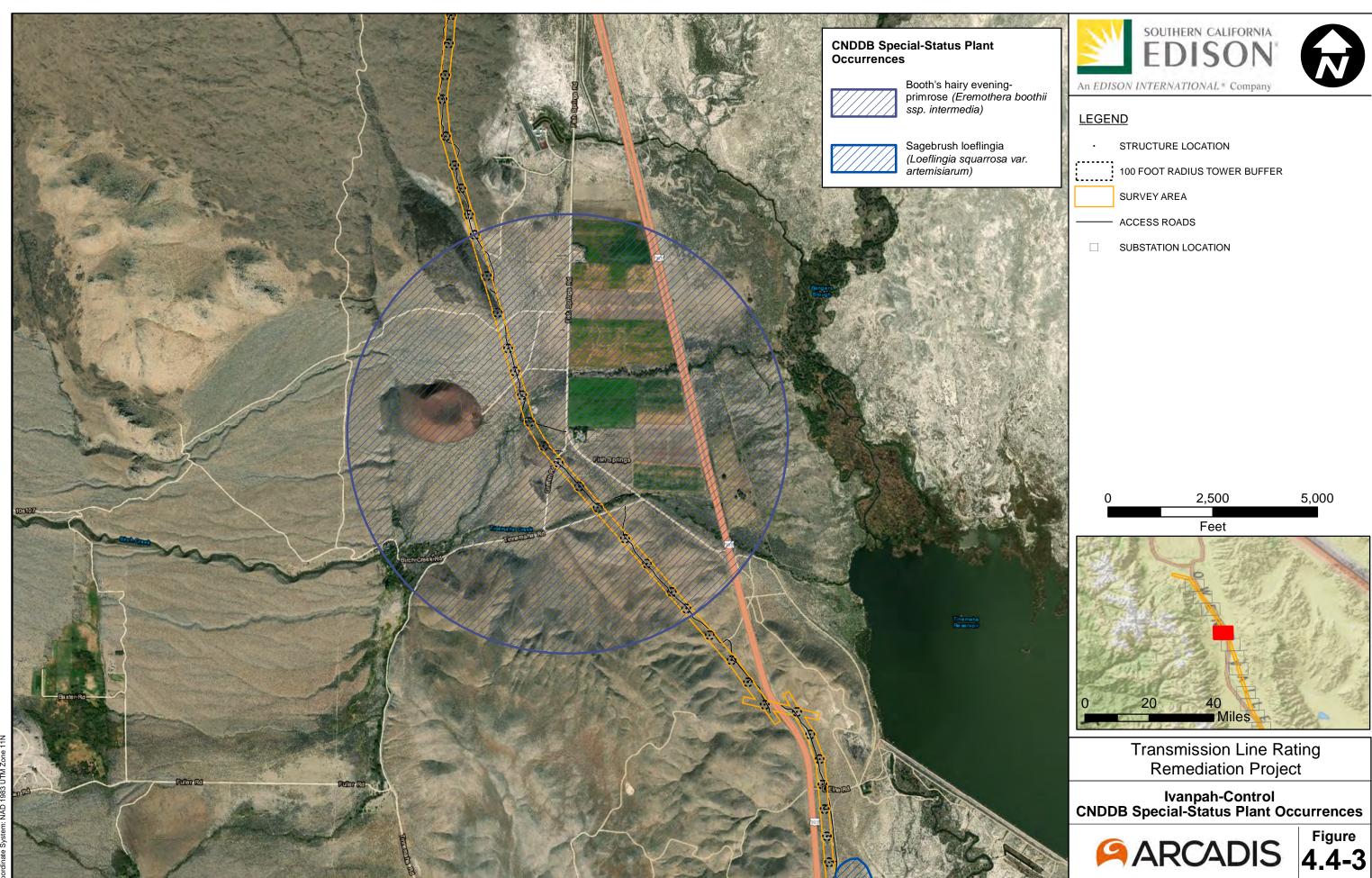




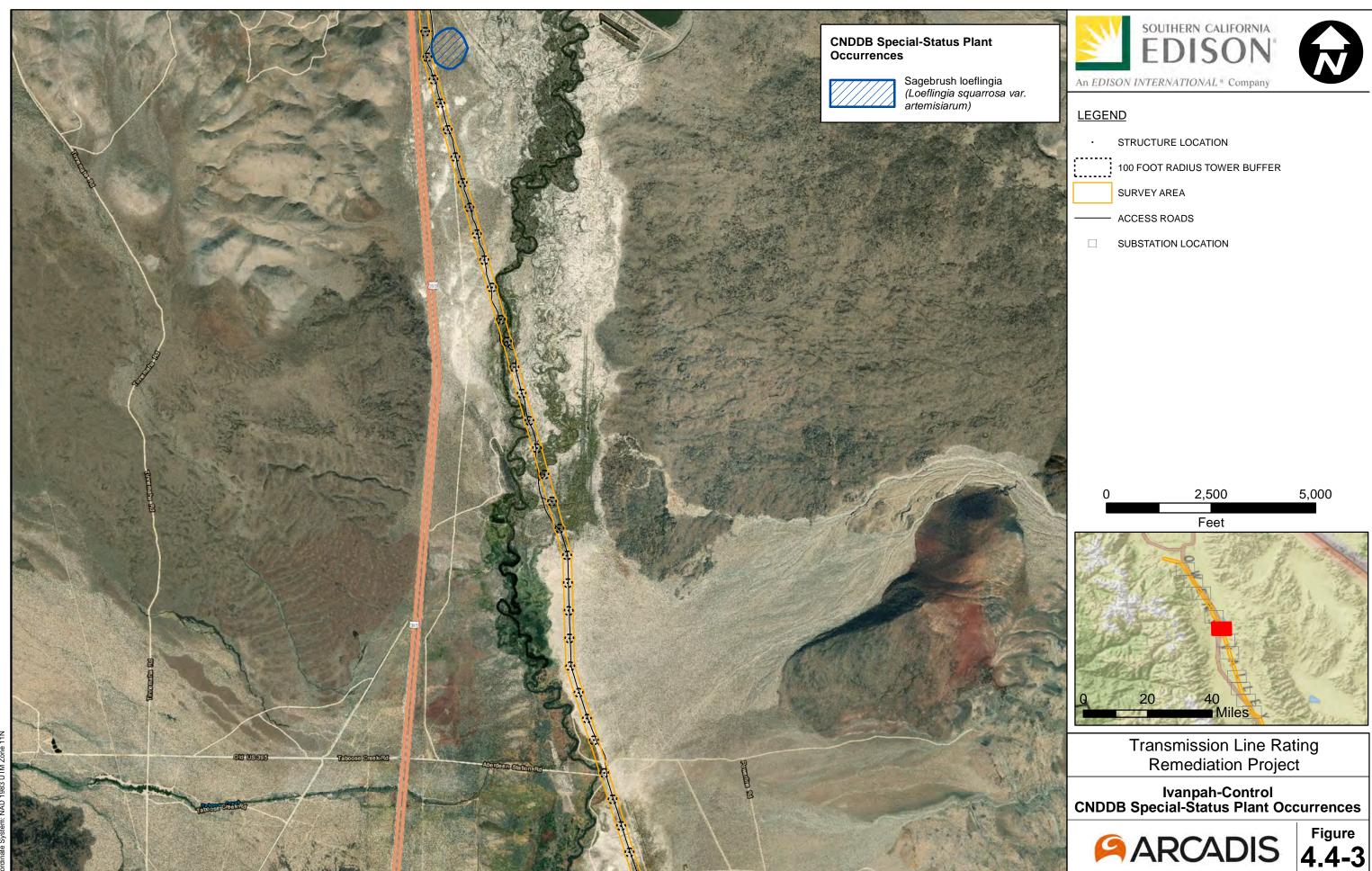


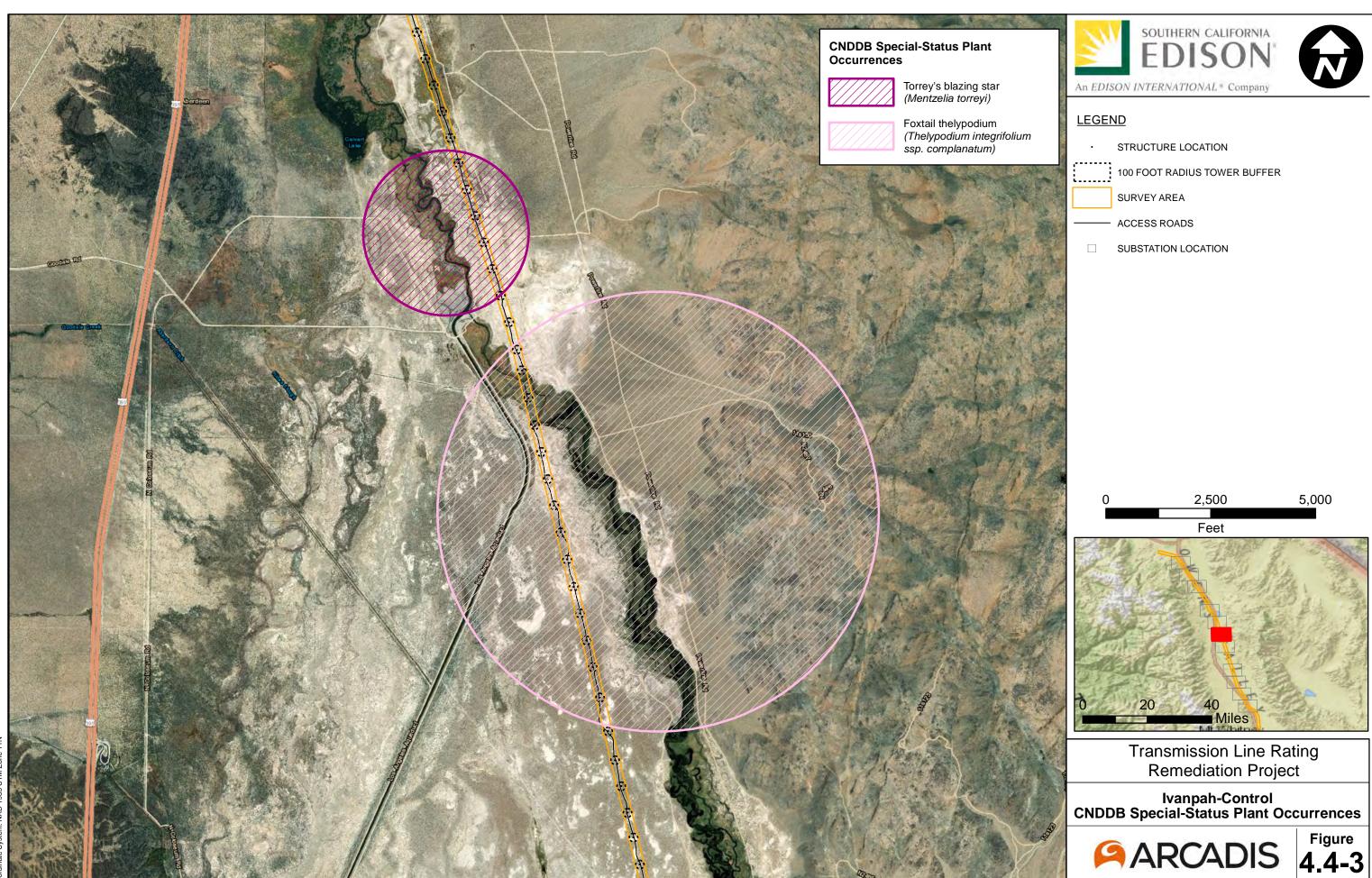


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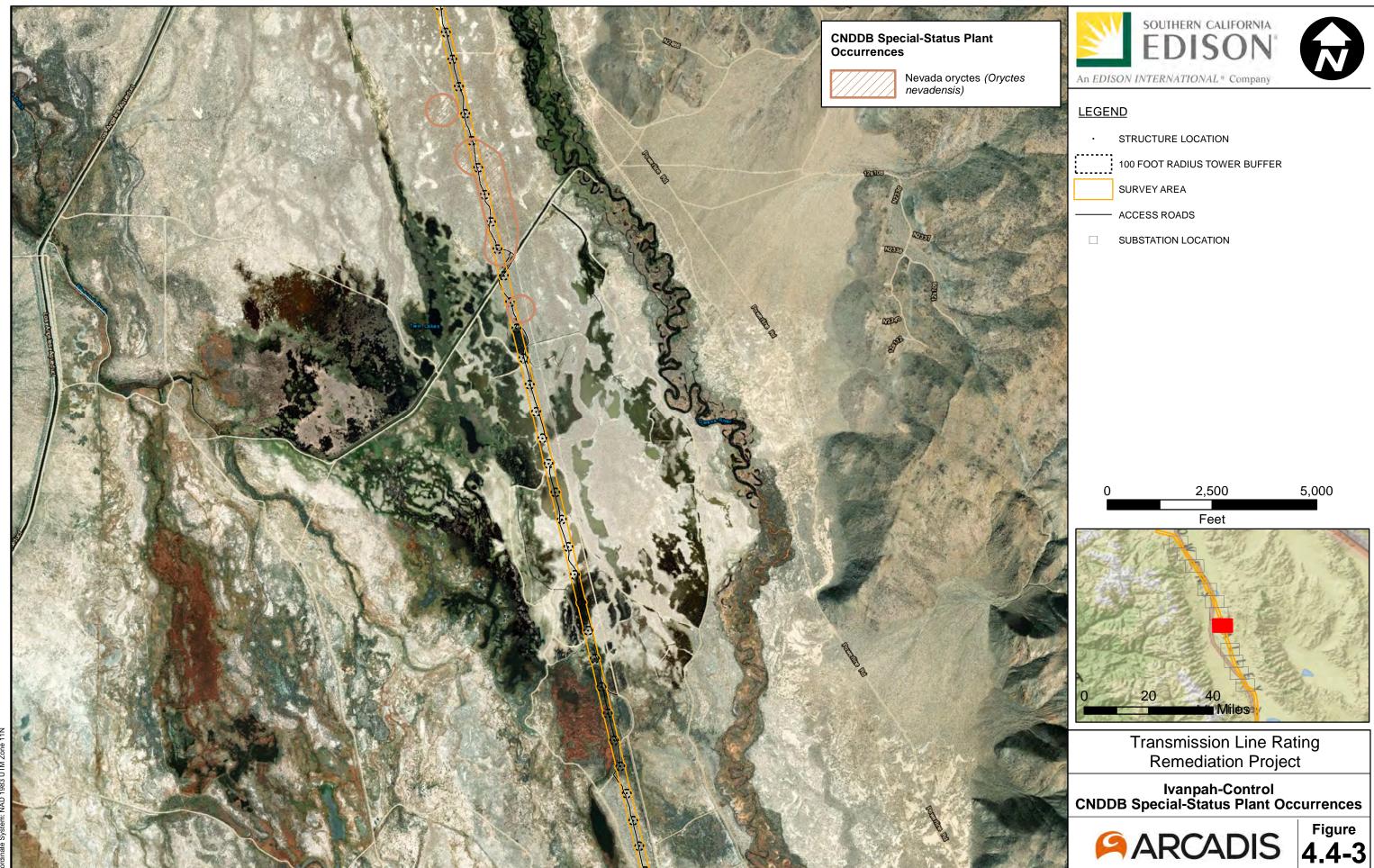


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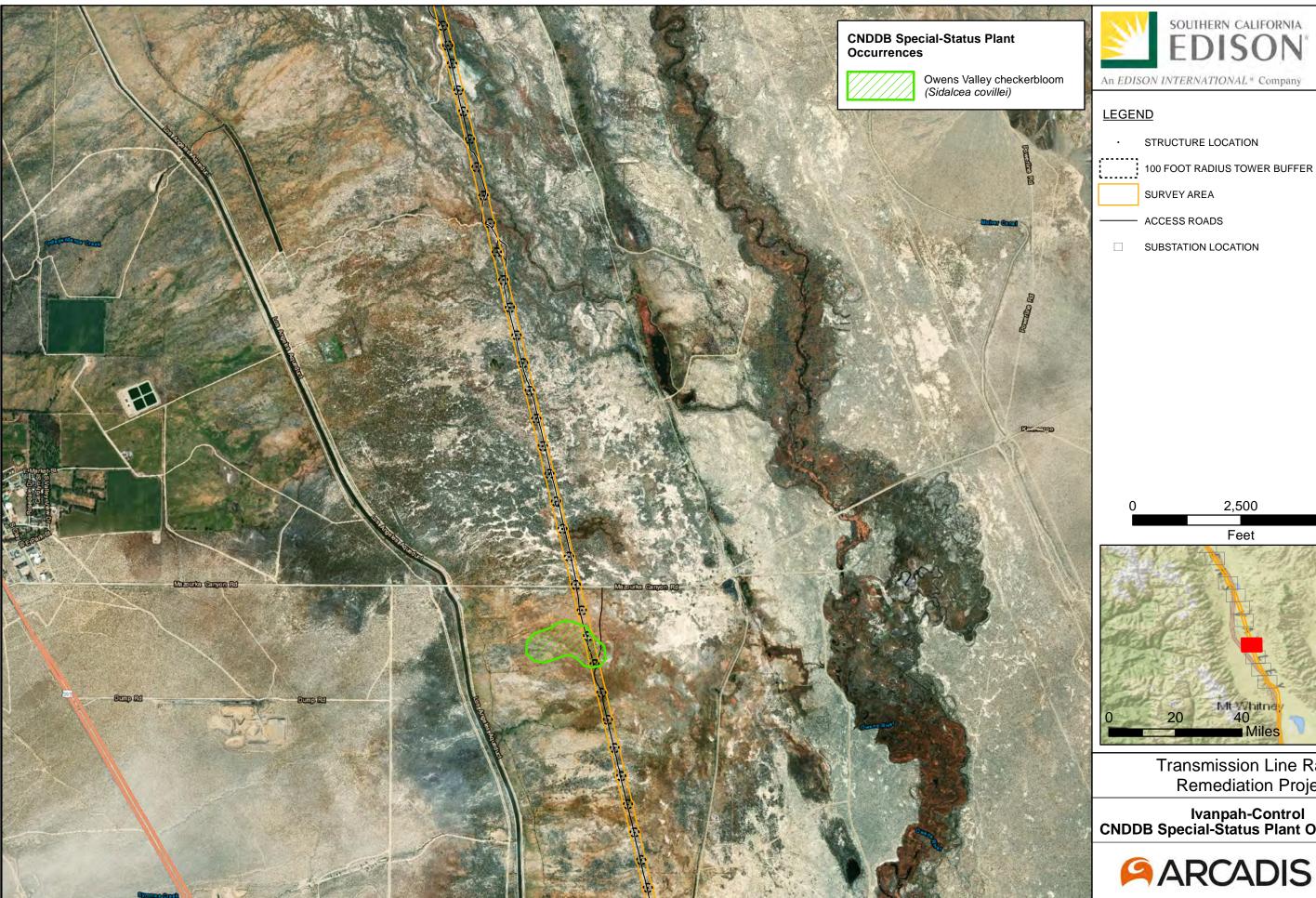




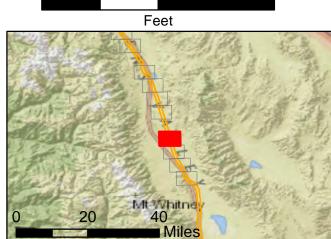
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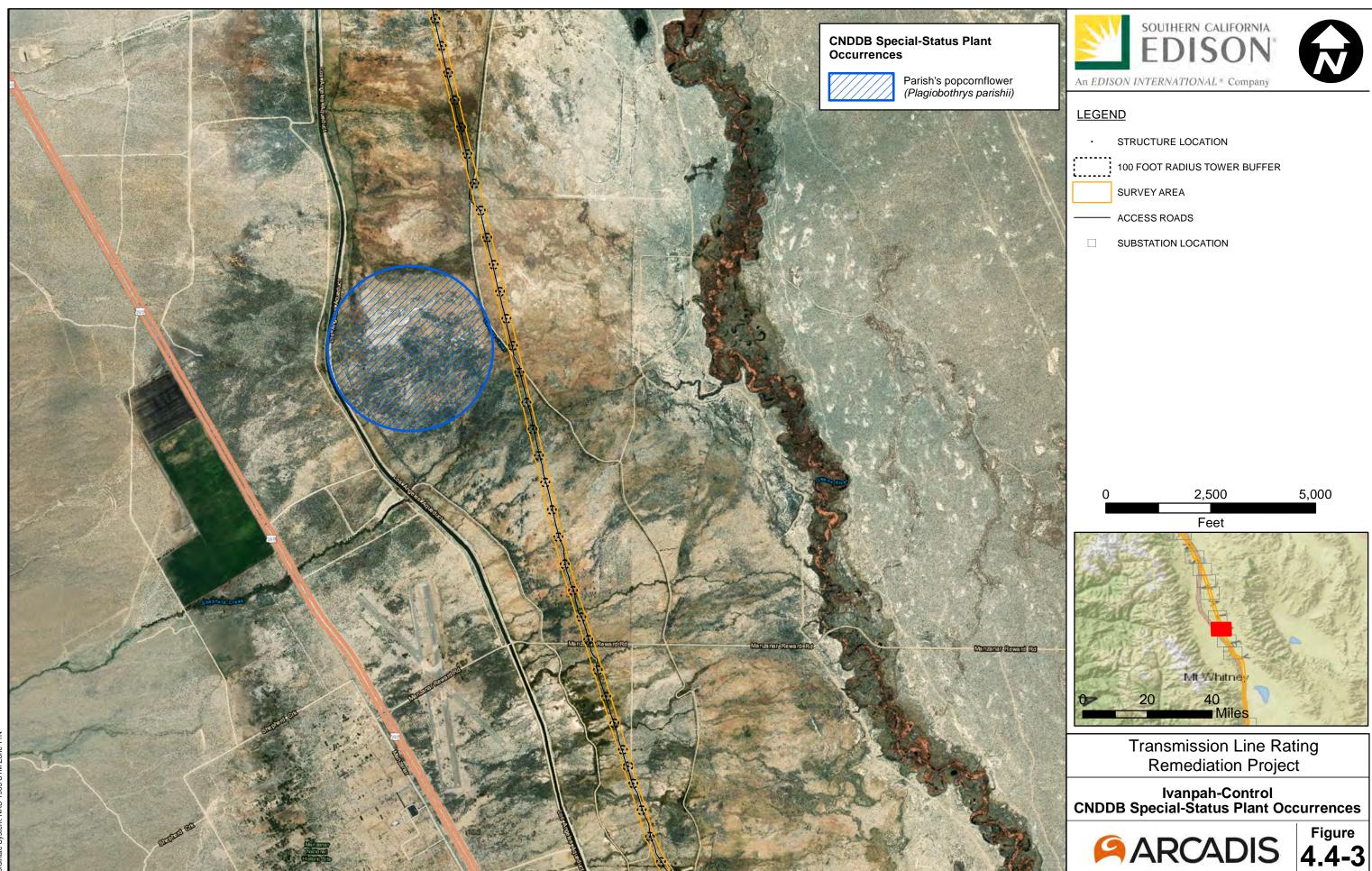


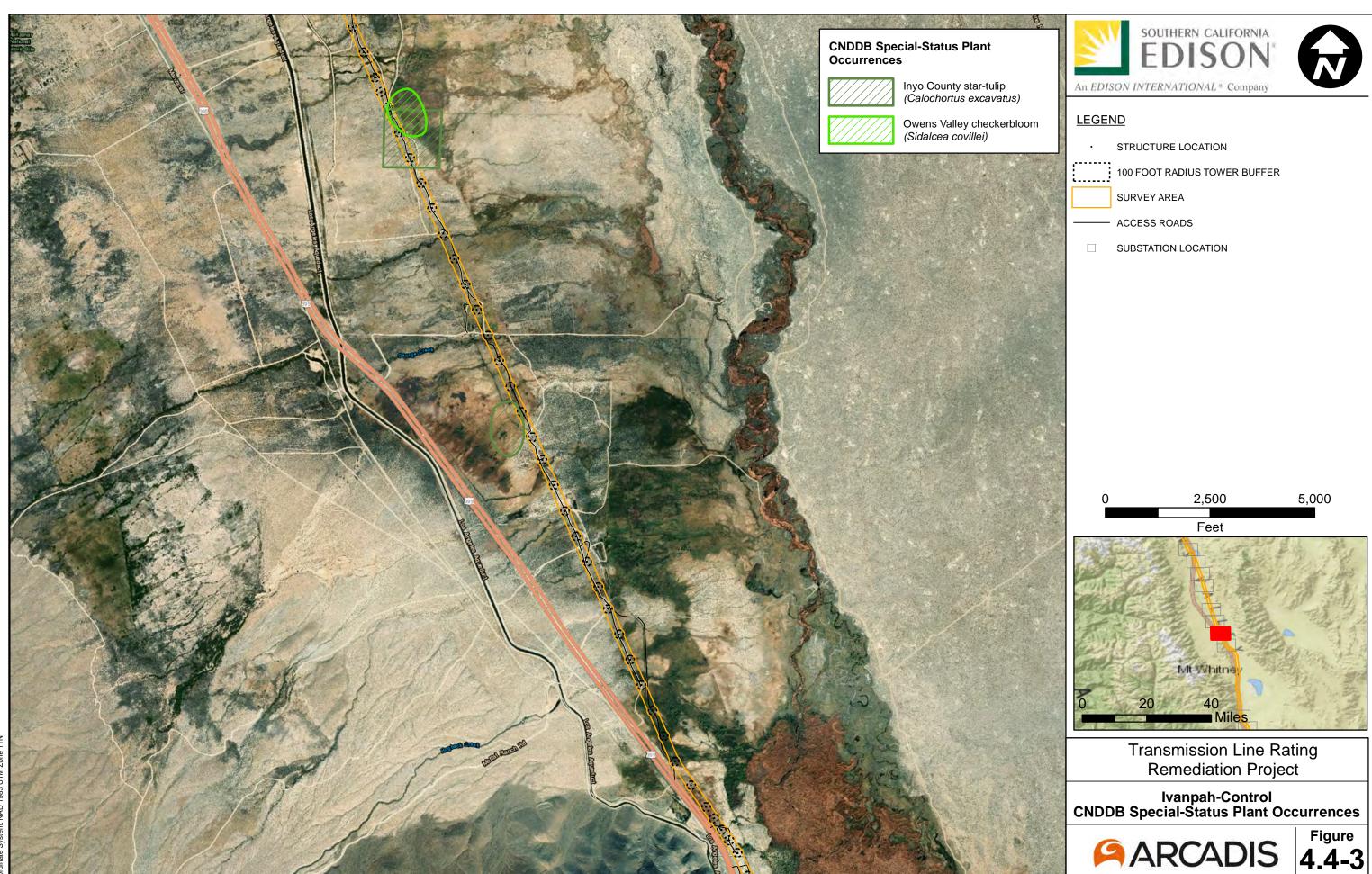


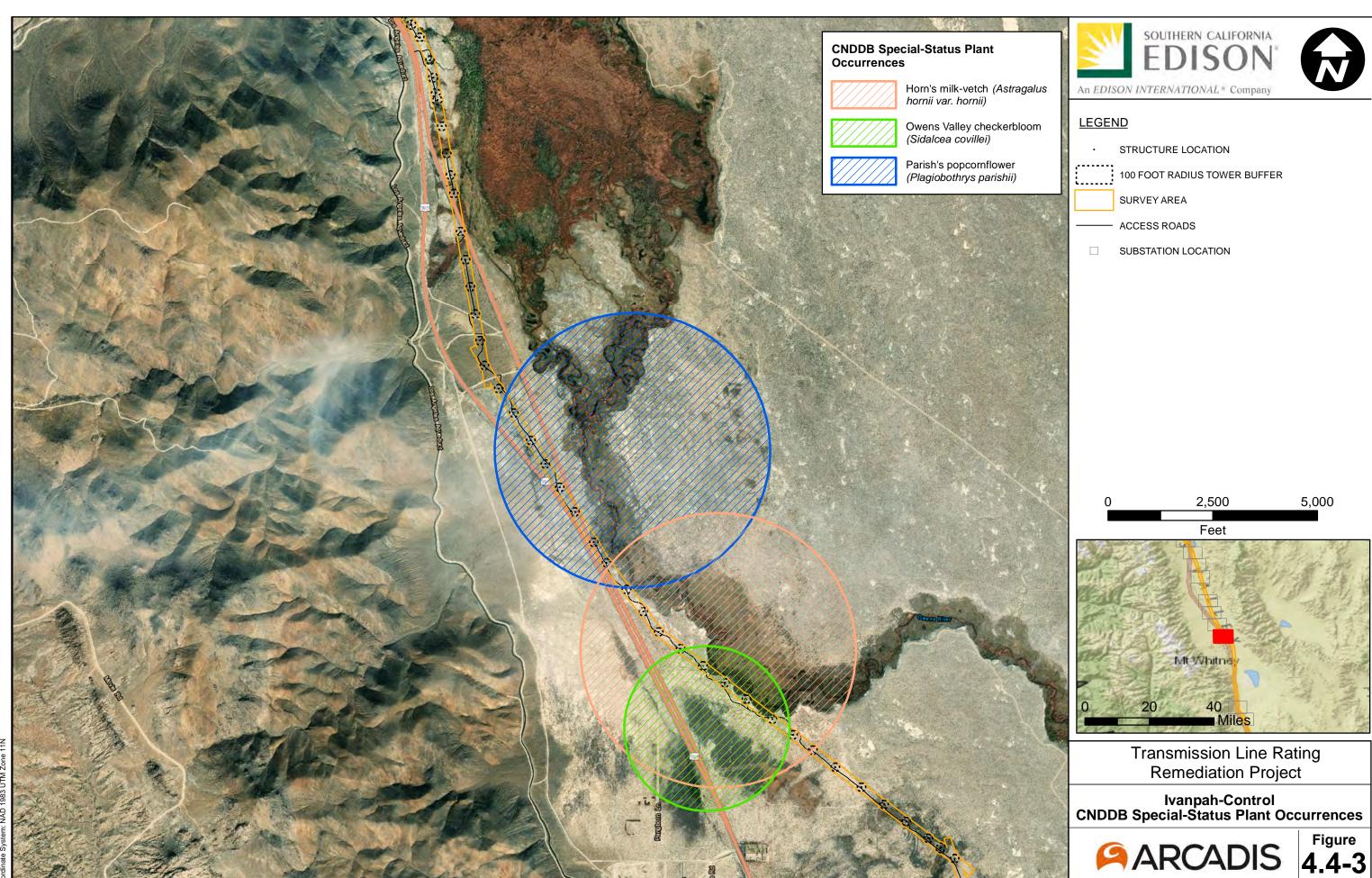
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Ivanpah-Control
CNDDB Special-Status Plant Occurrences



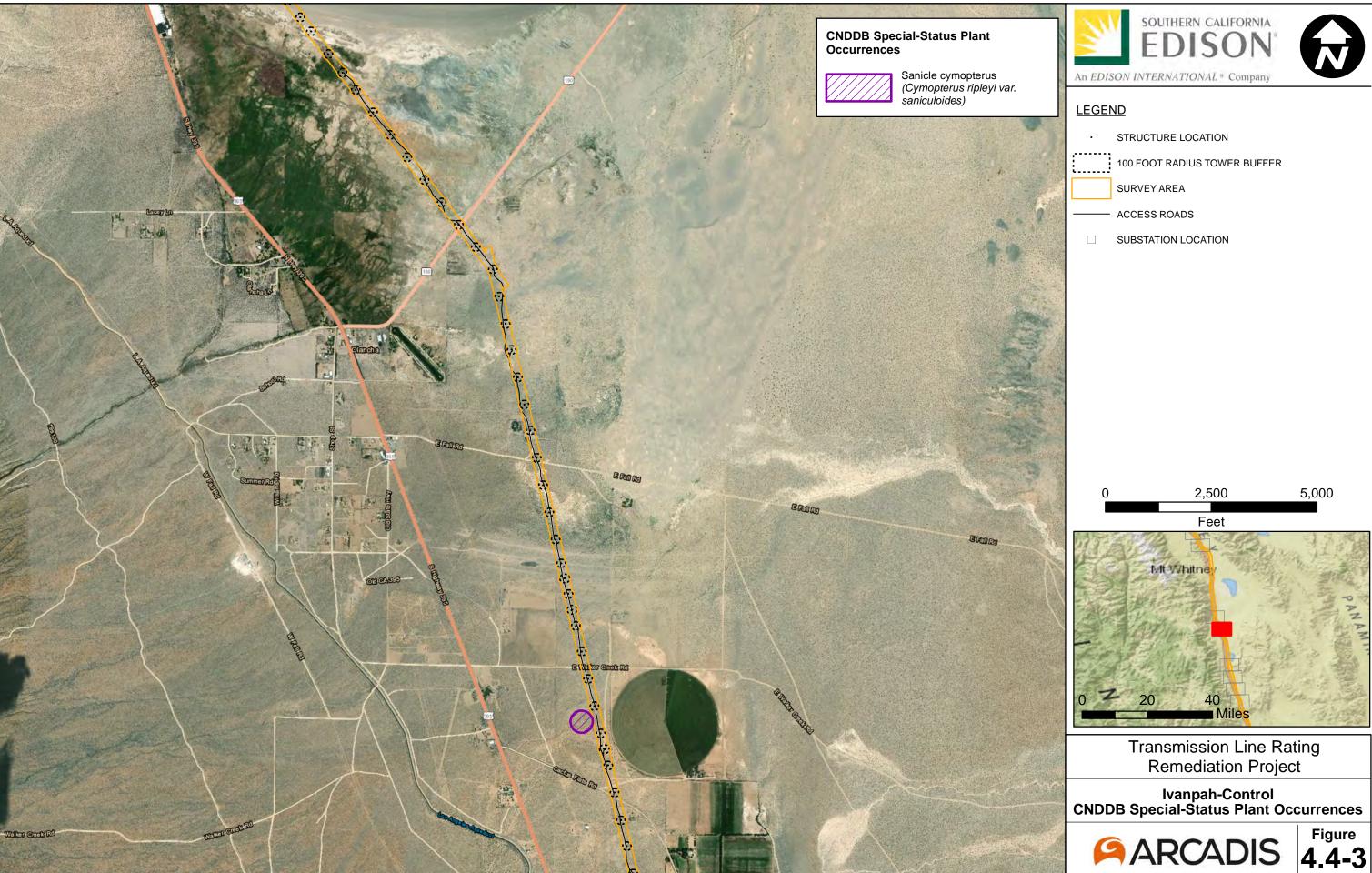






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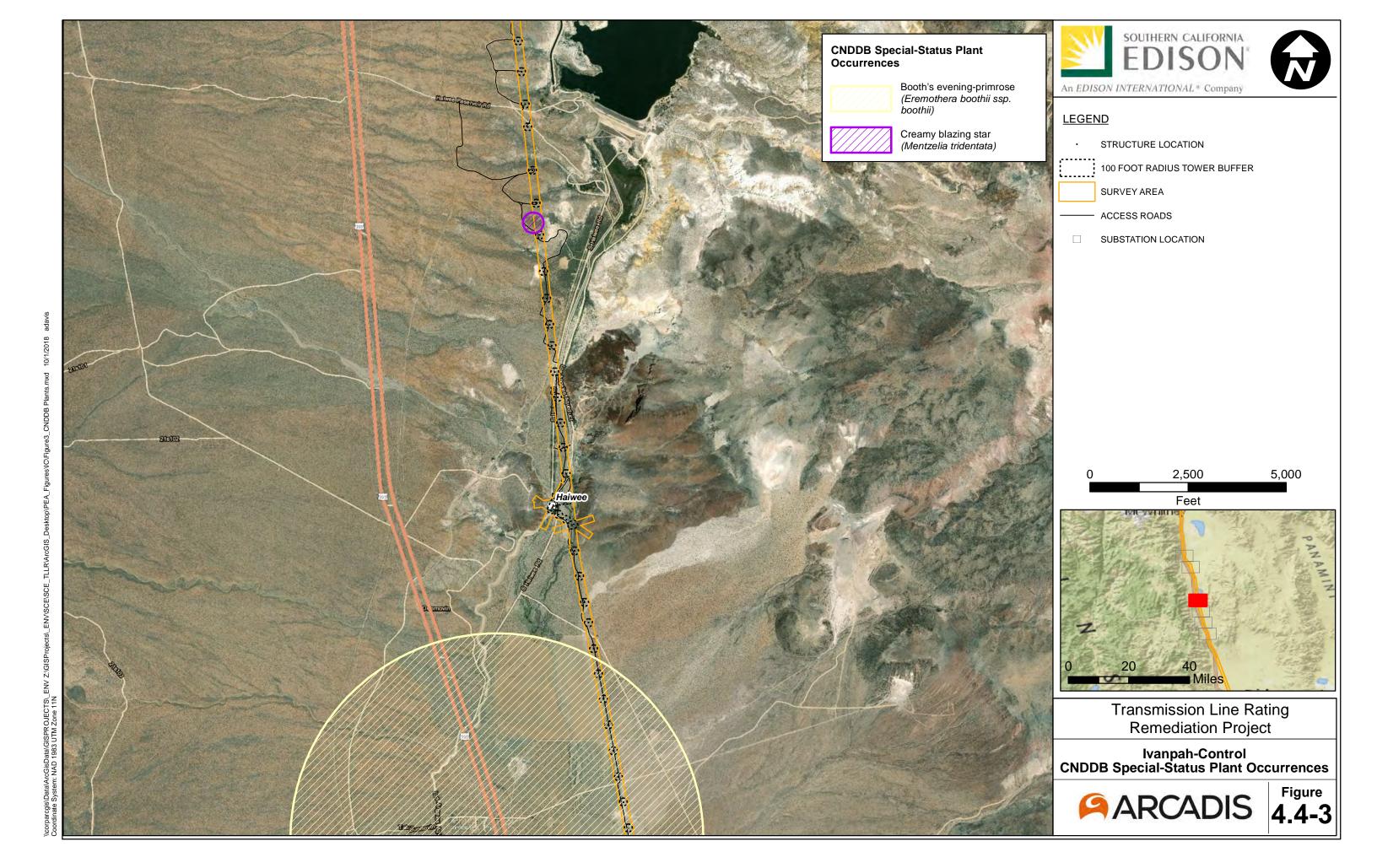
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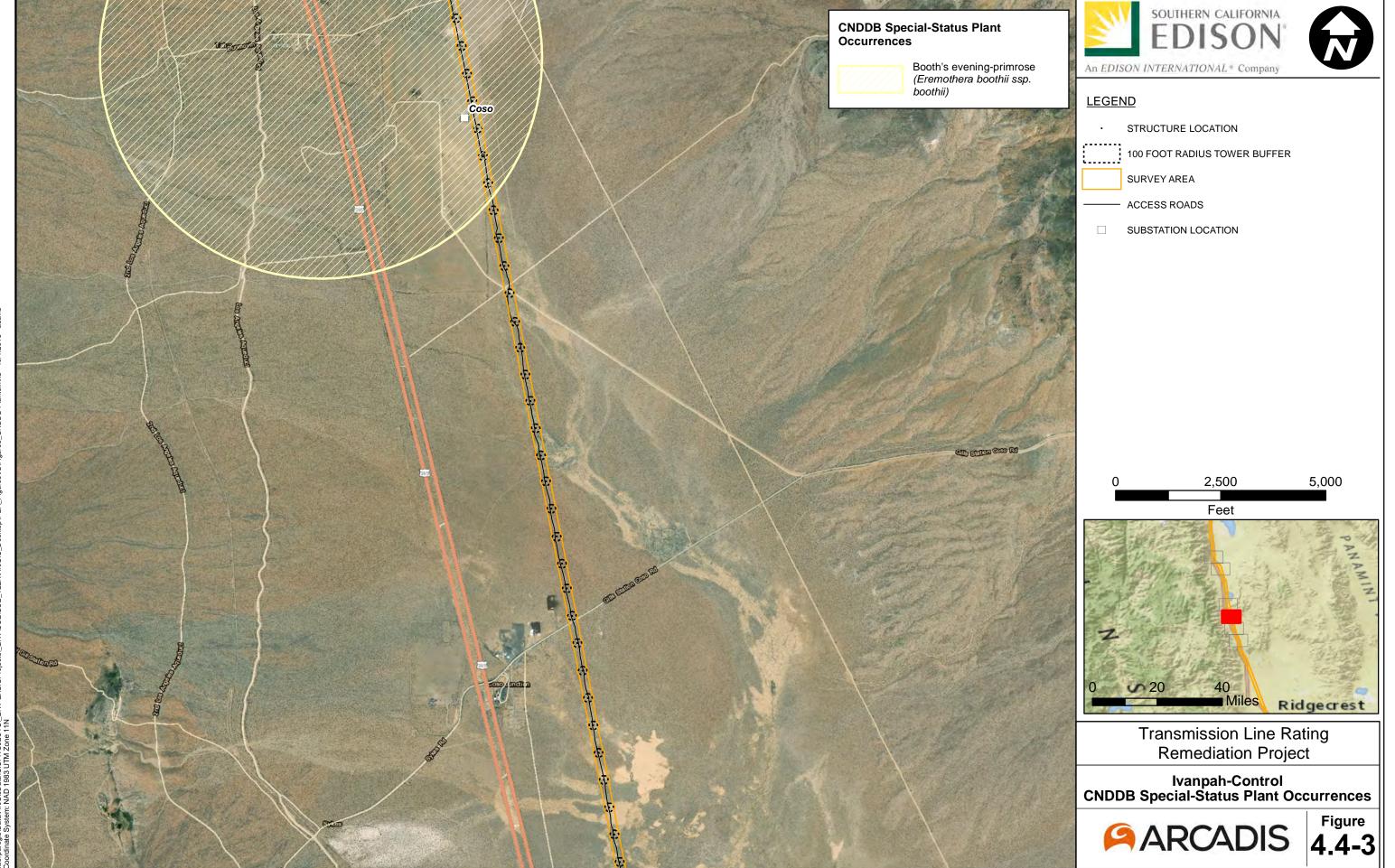


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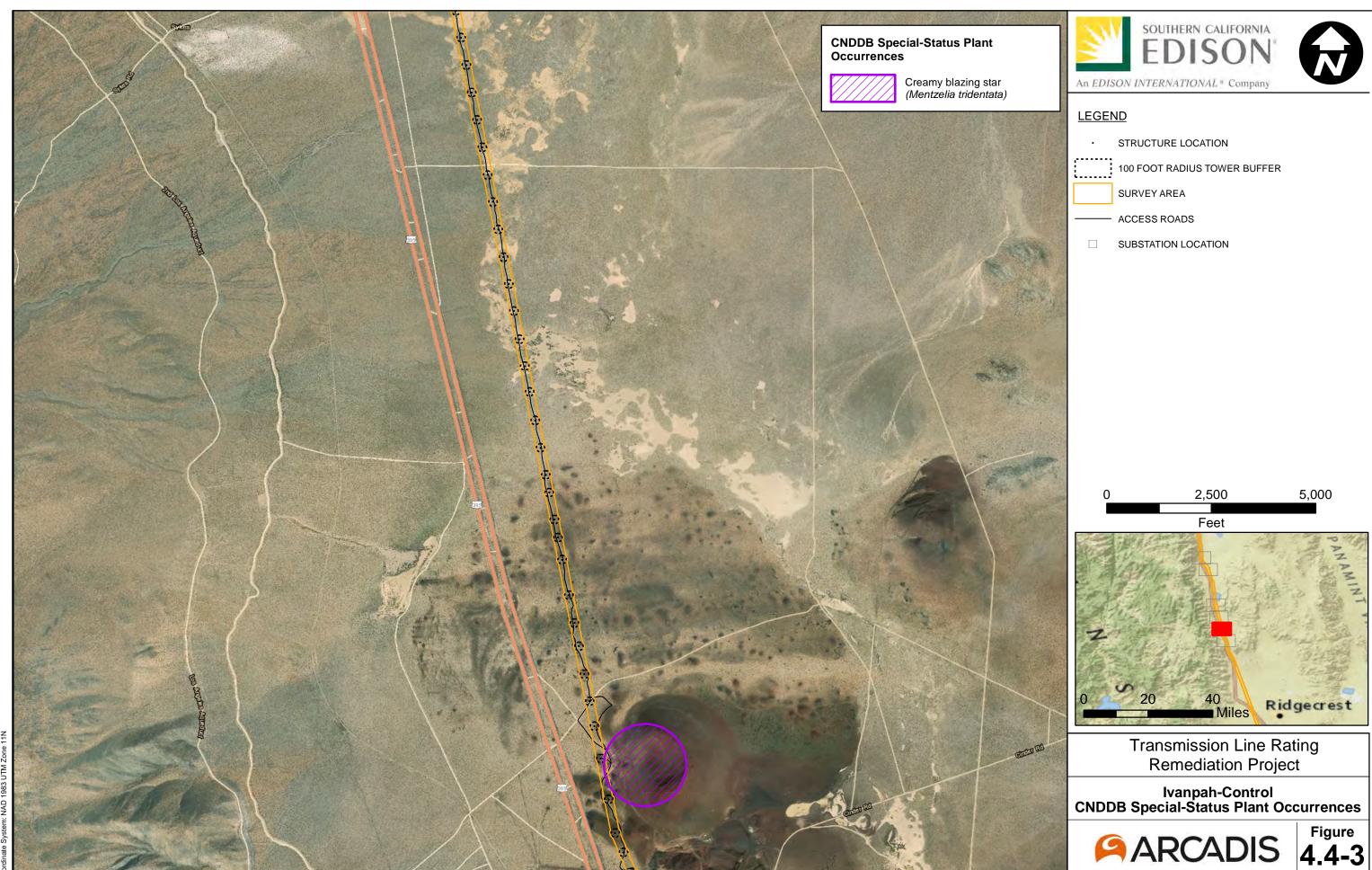
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CNDDB Special-Status Plant Occurrences



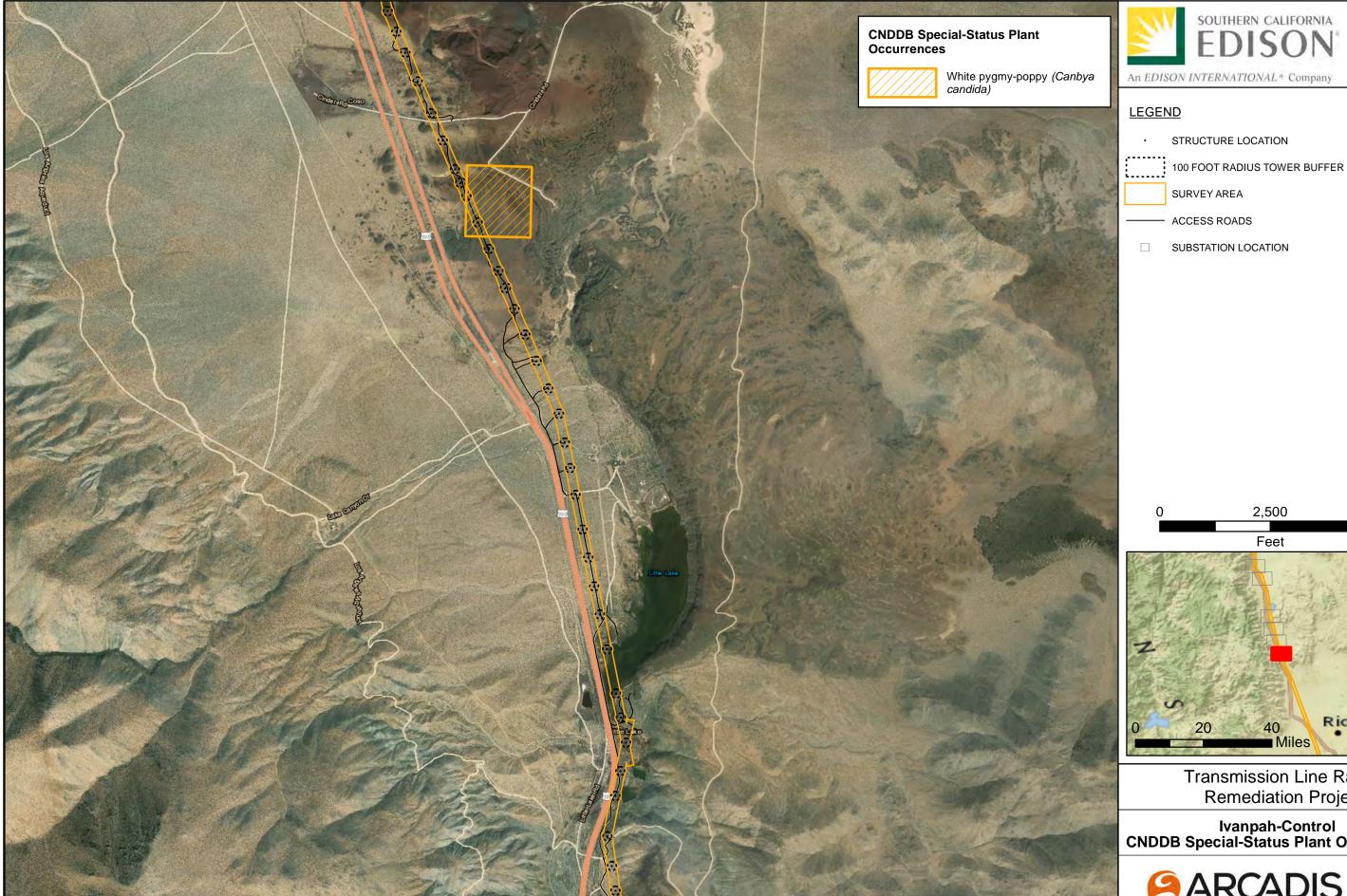




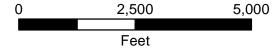
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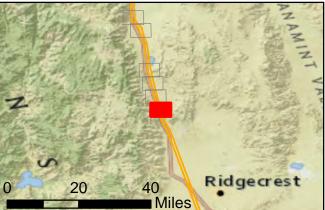


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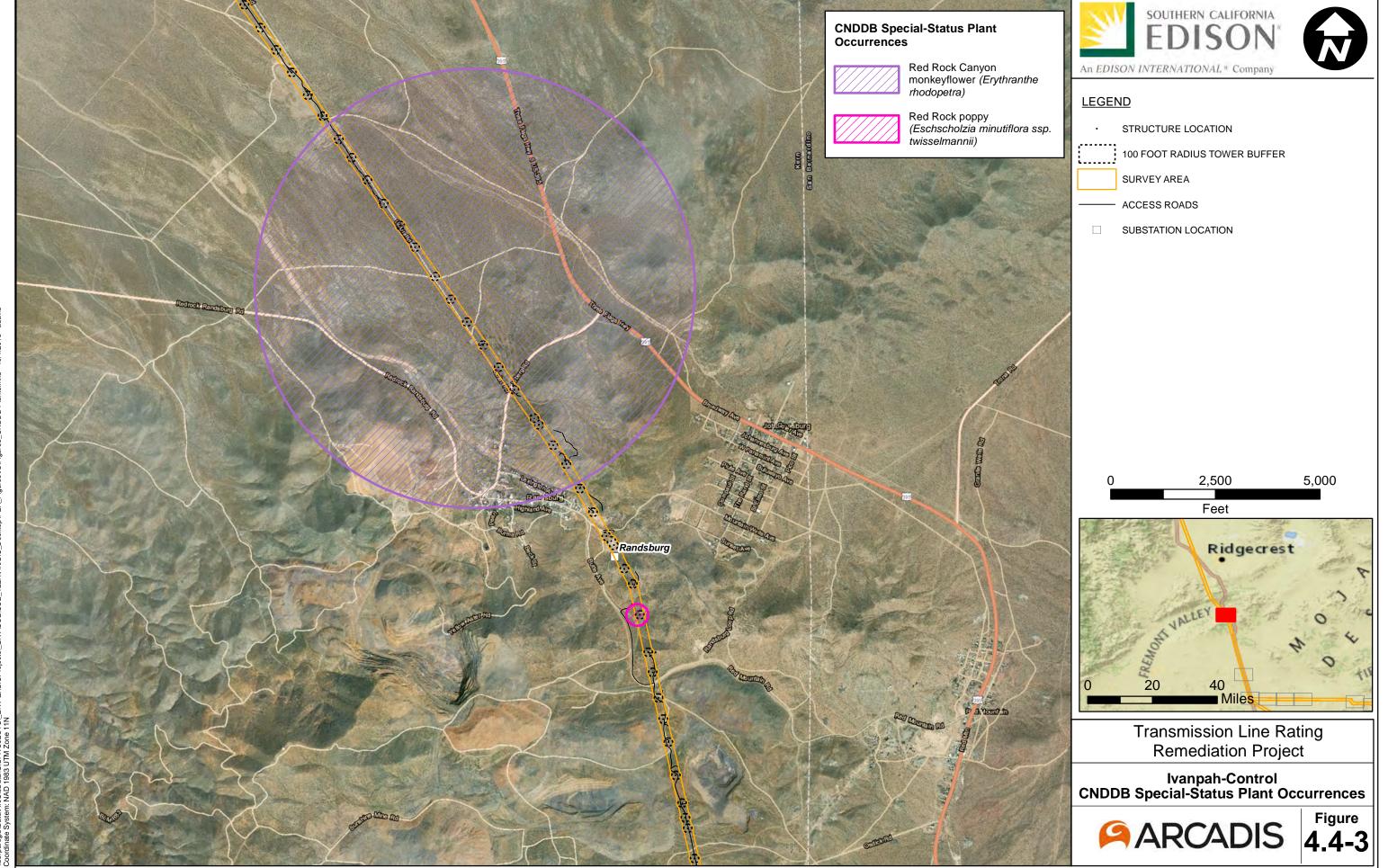




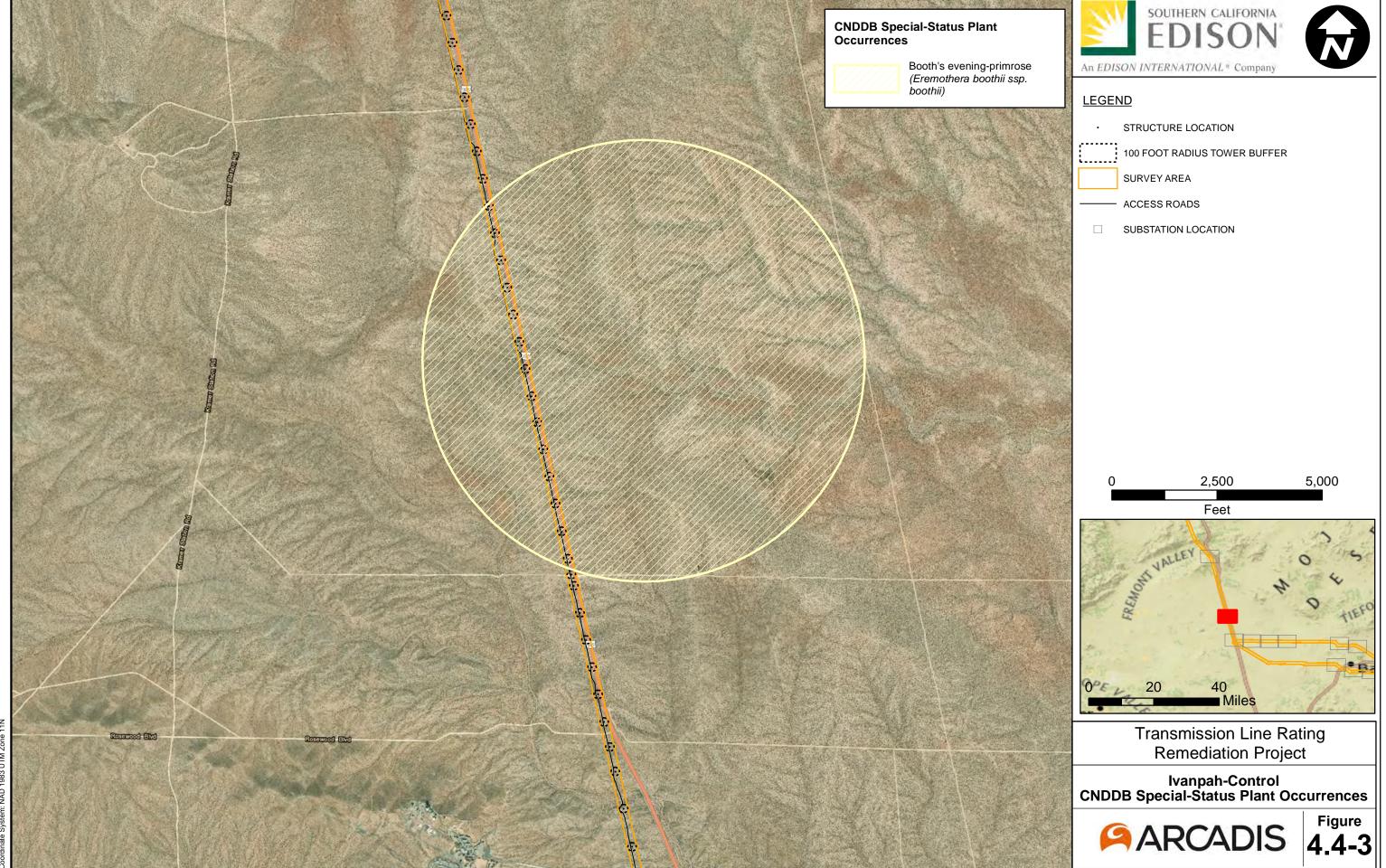
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CNDDB Special-Status Plant Occurrences

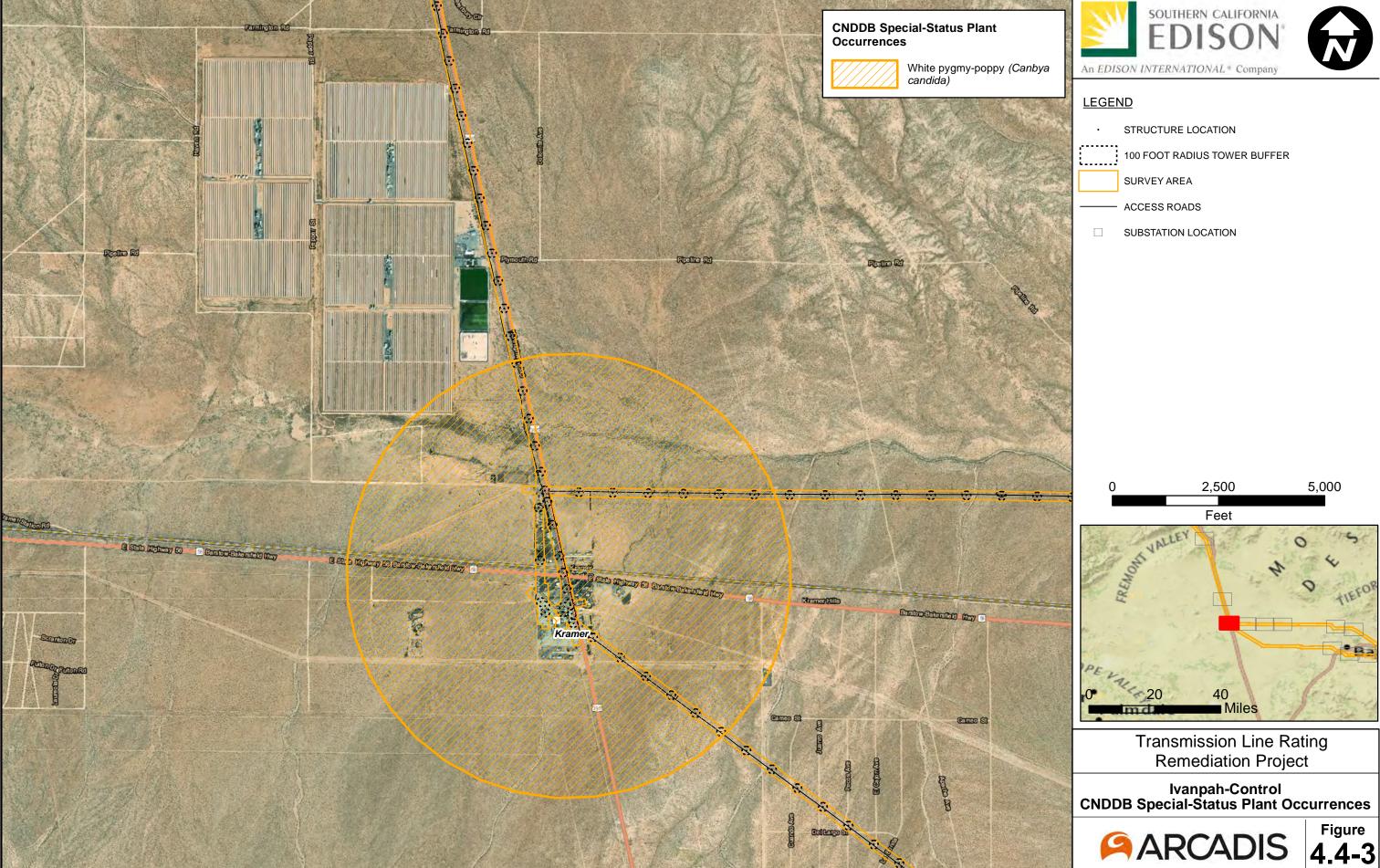


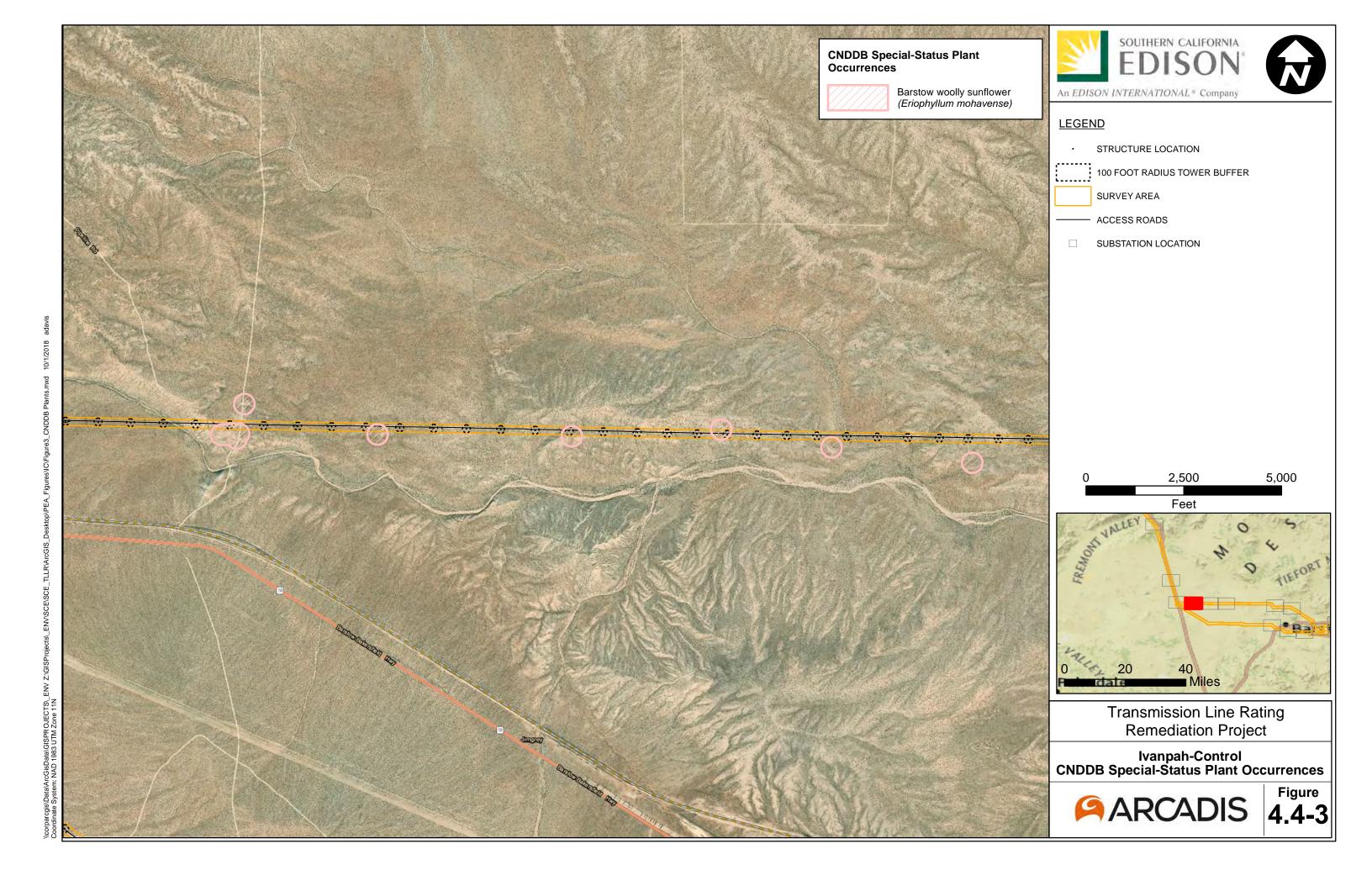


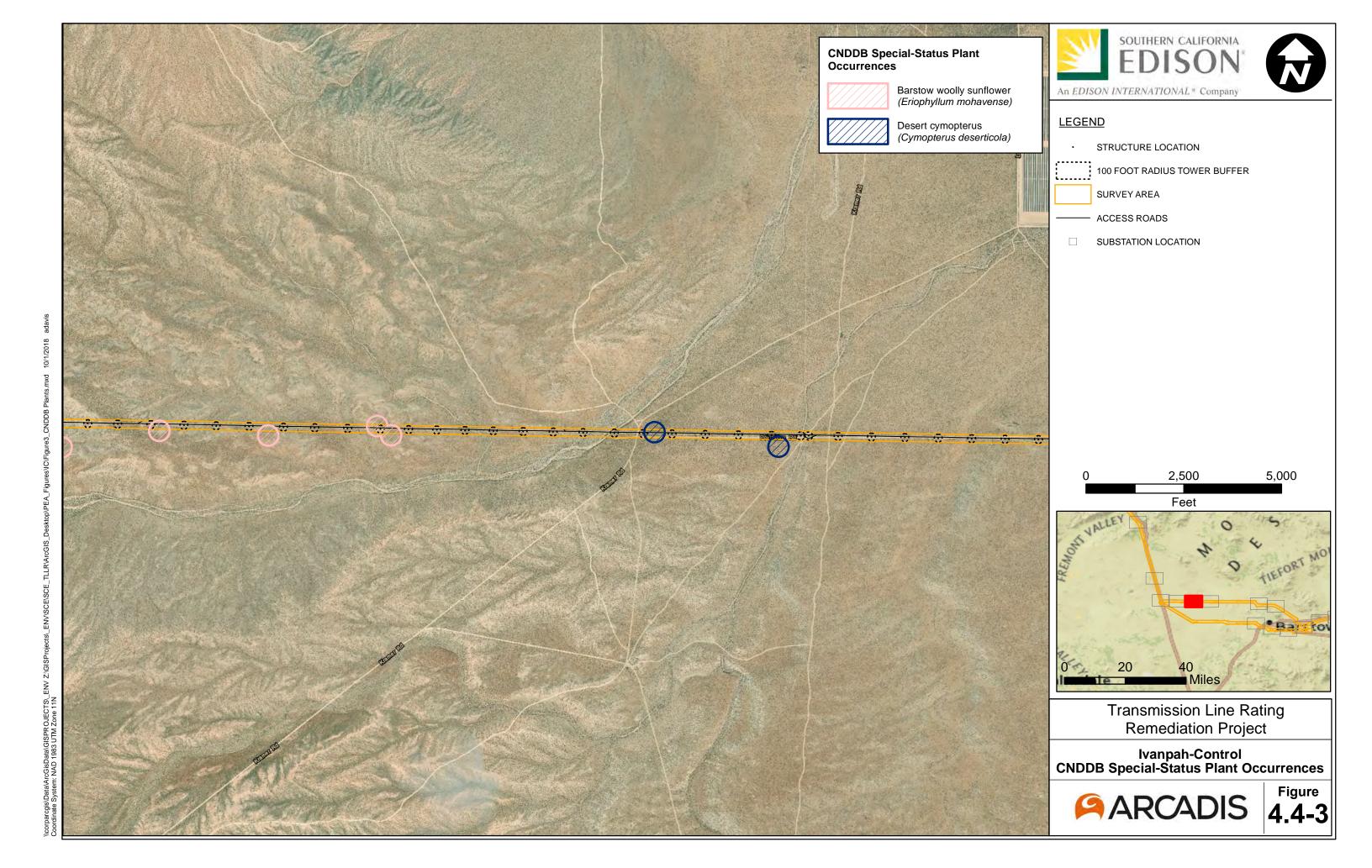
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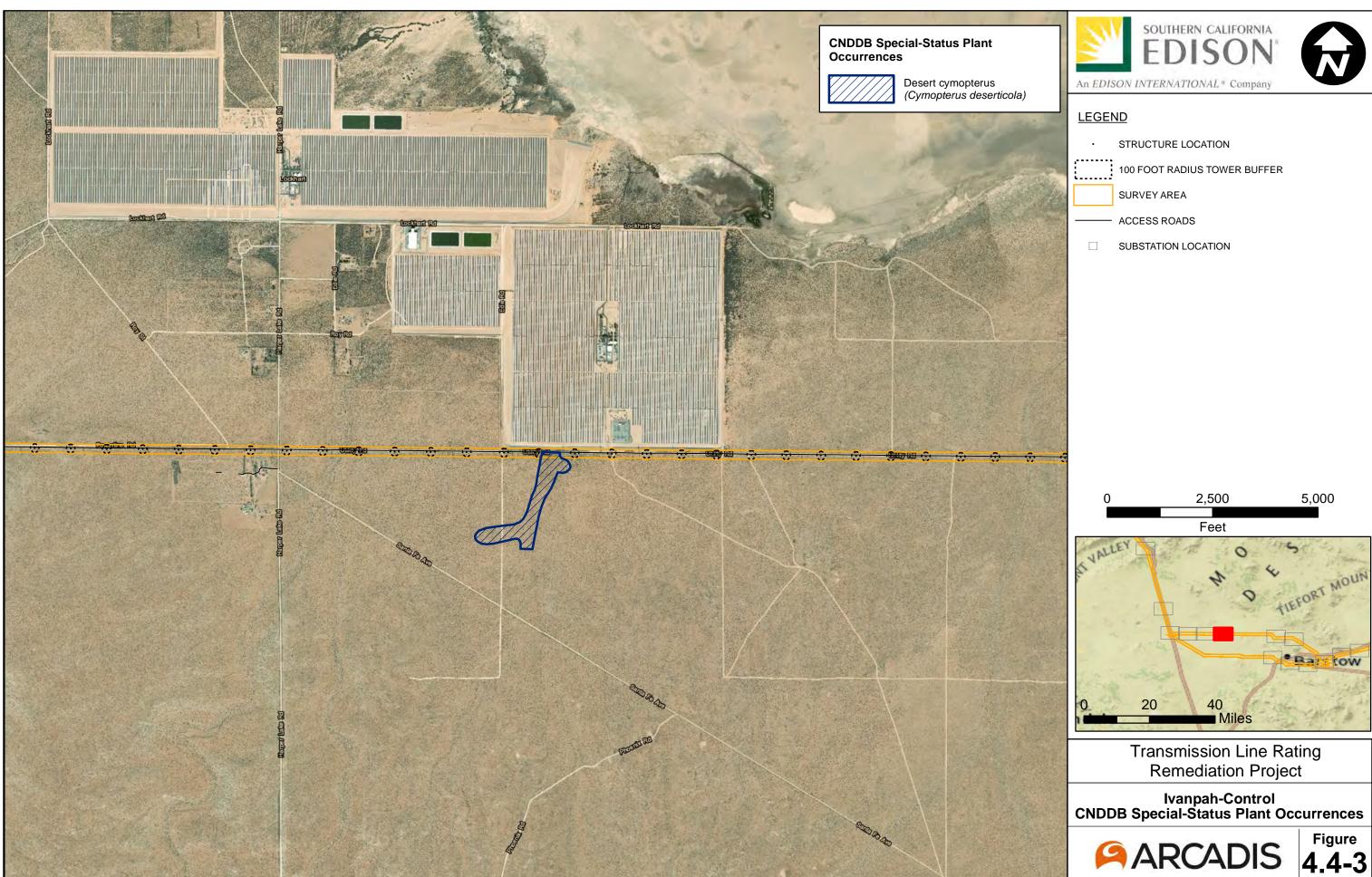


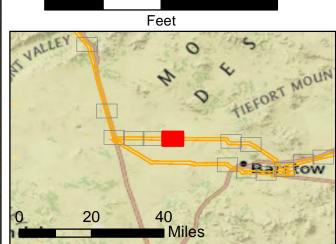
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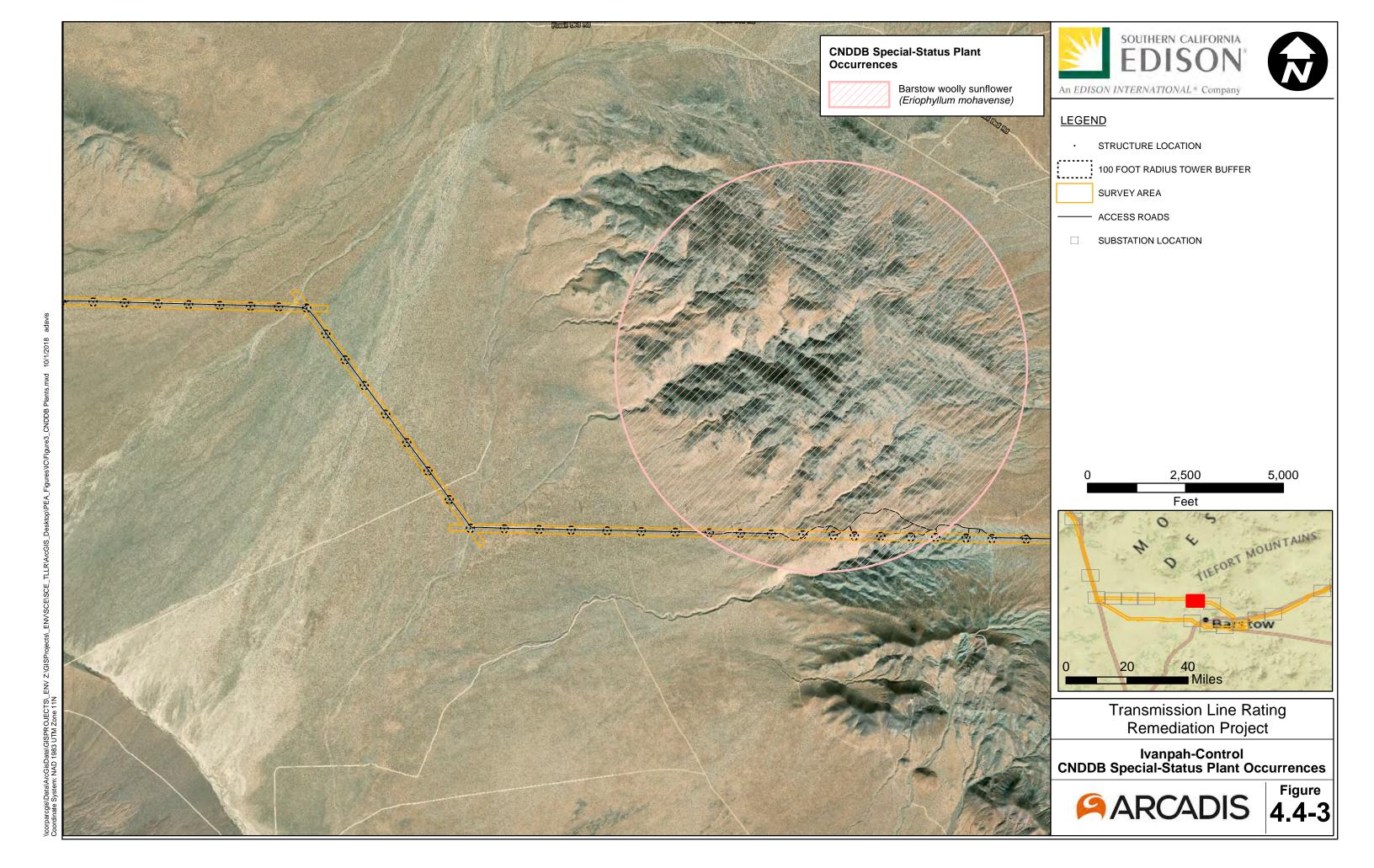


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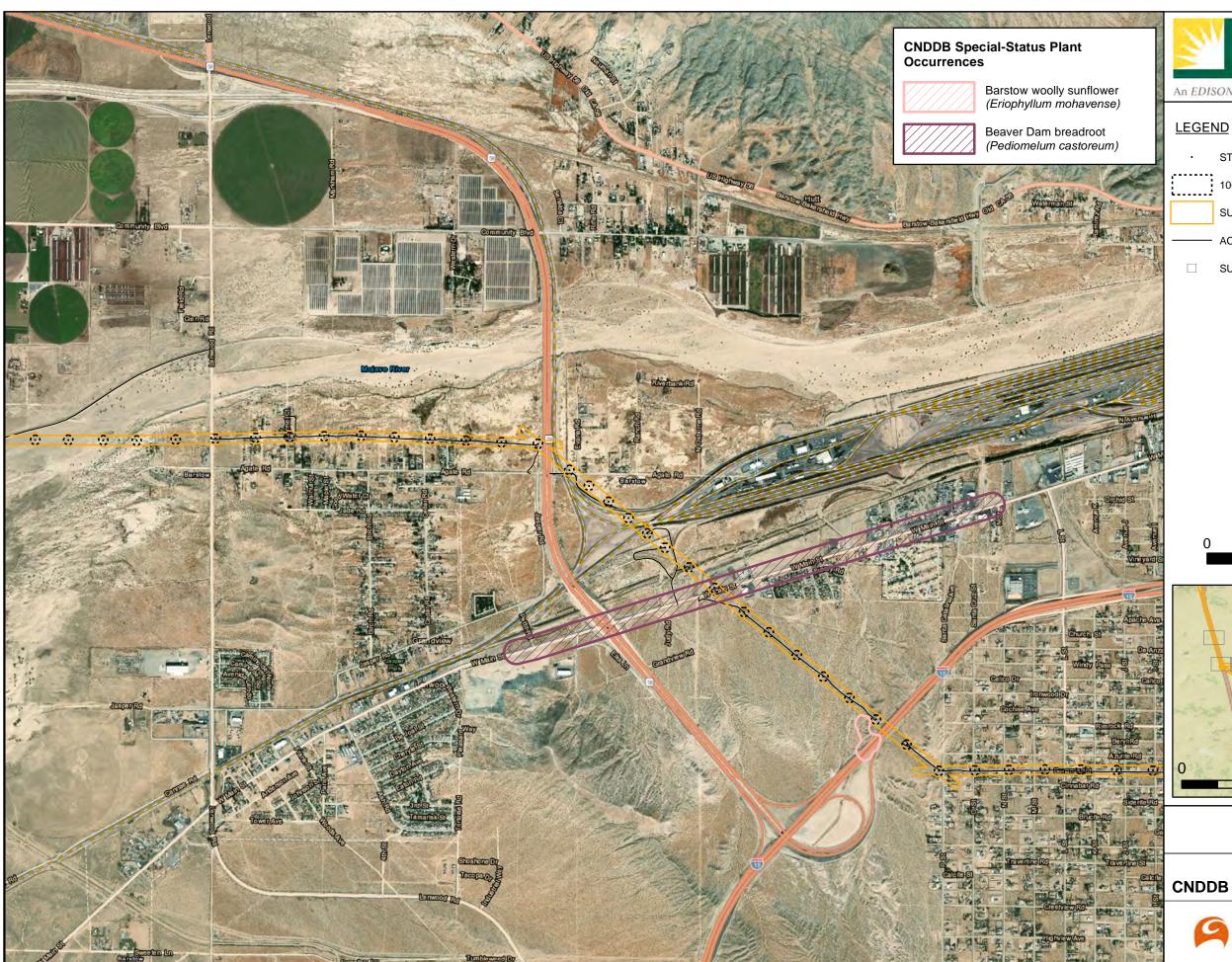
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CNDDB Special-Status Plant Occurrences



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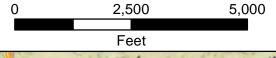
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

ACCESS ROADS

SUBSTATION LOCATION

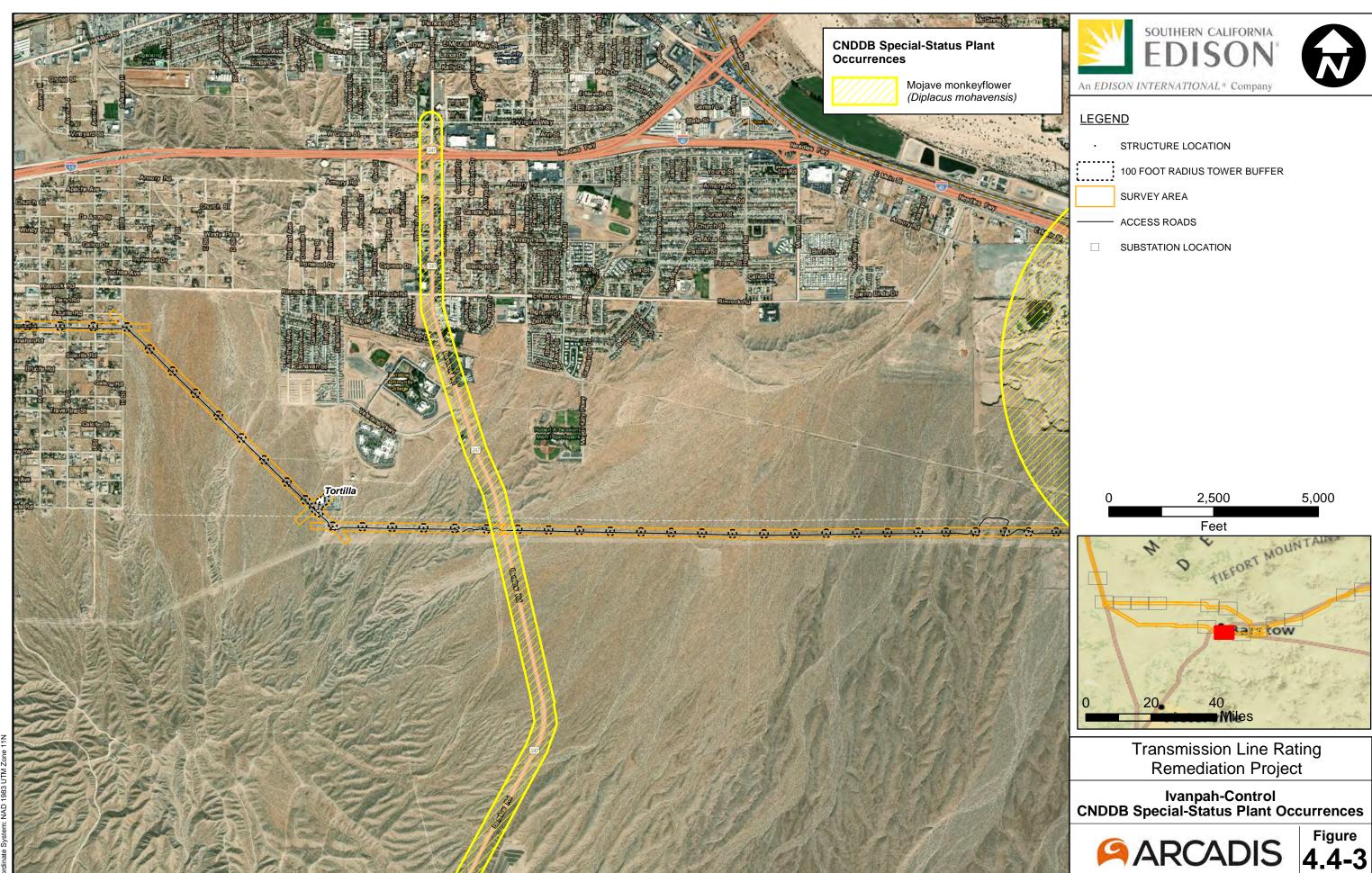




**Transmission Line Rating** Remediation Project

Ivanpah-Control
CNDDB Special-Status Plant Occurrences

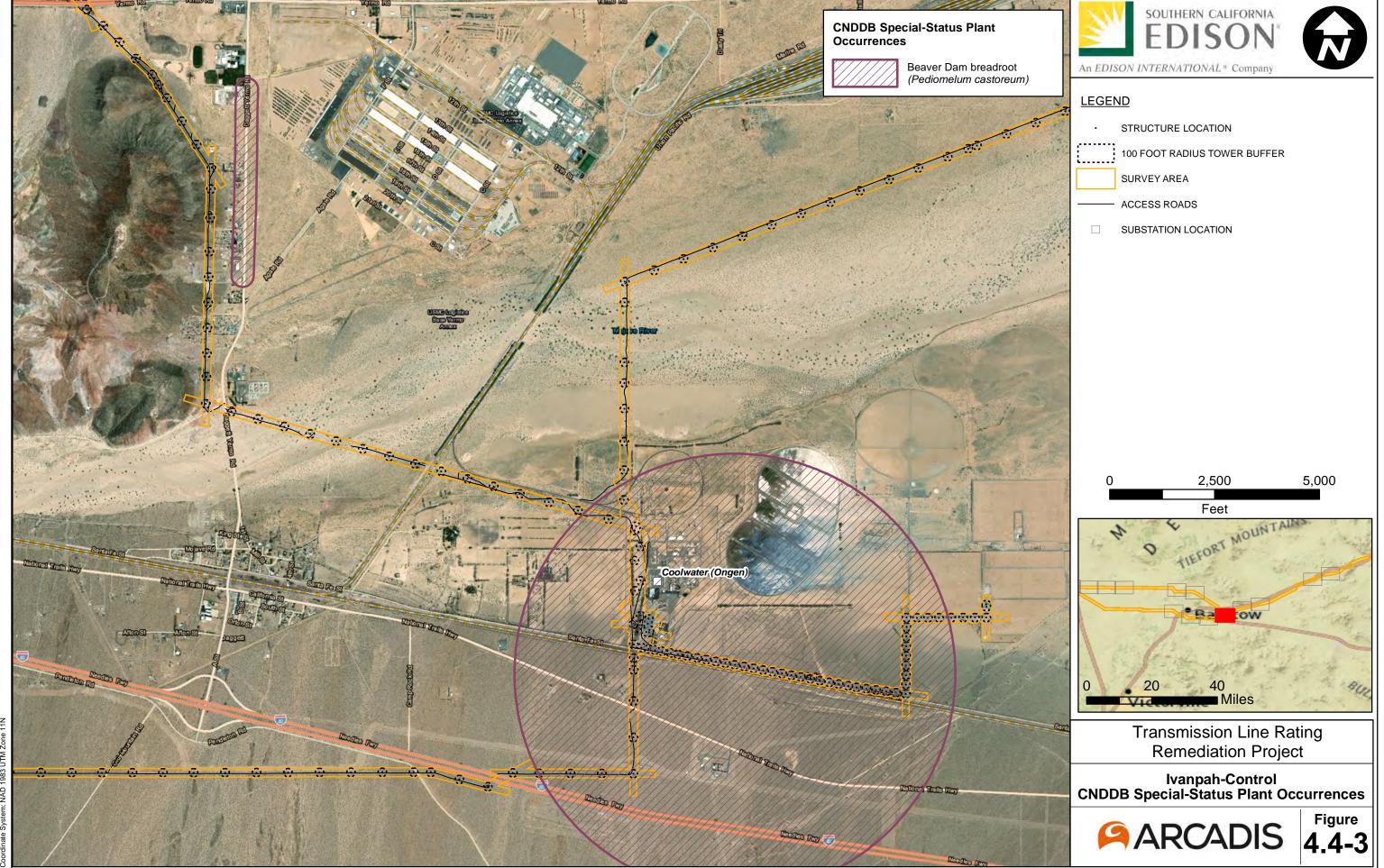




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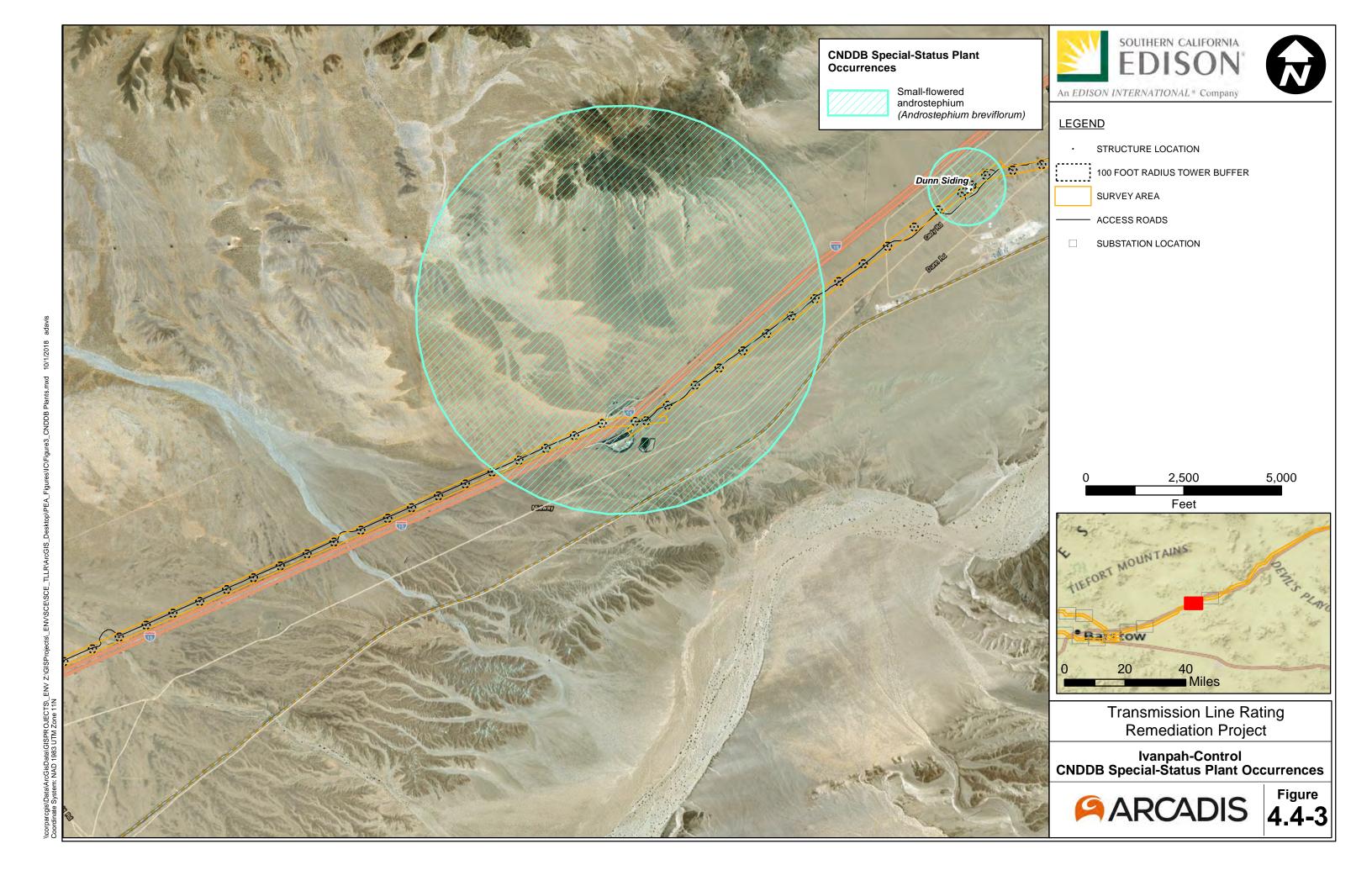


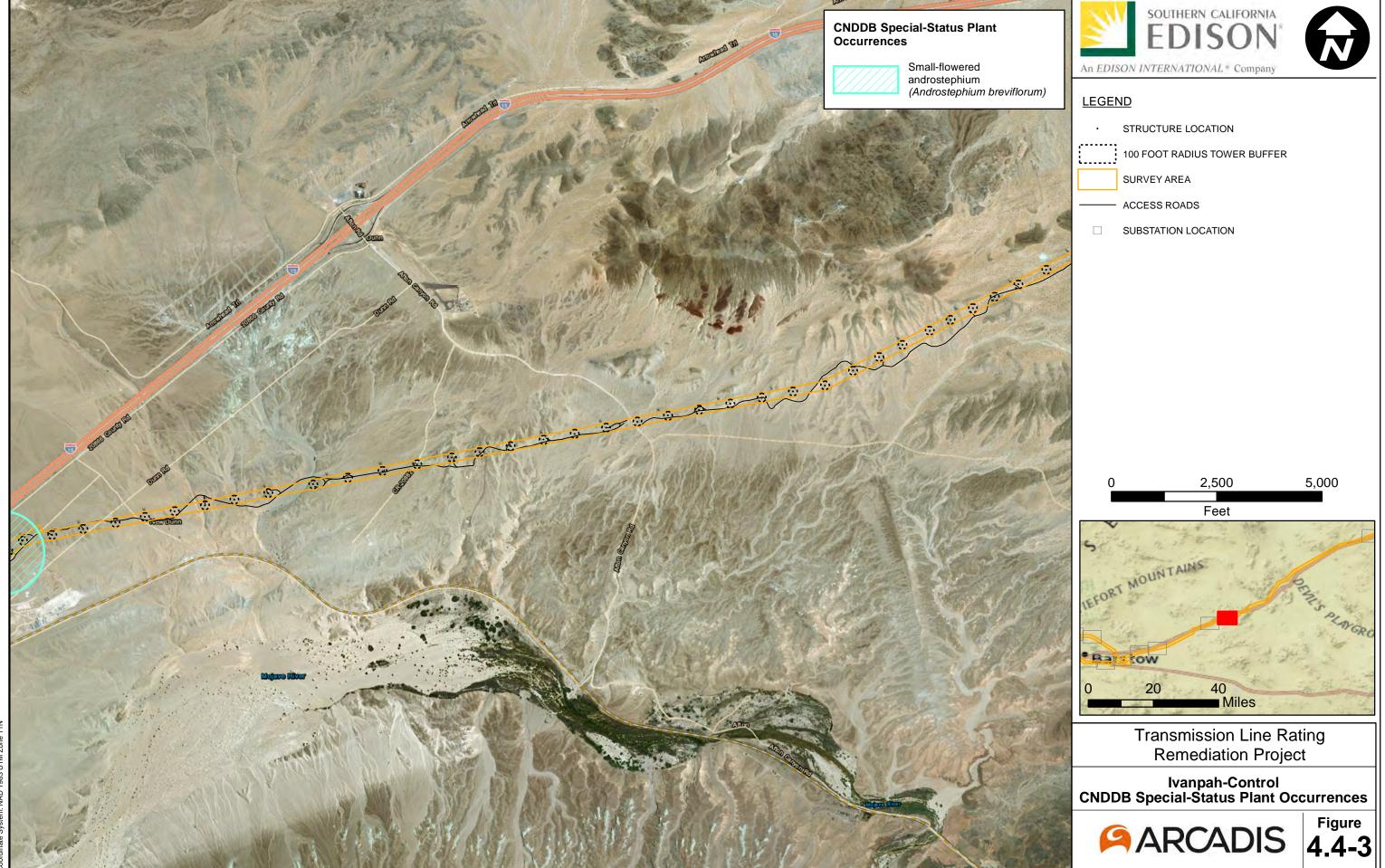
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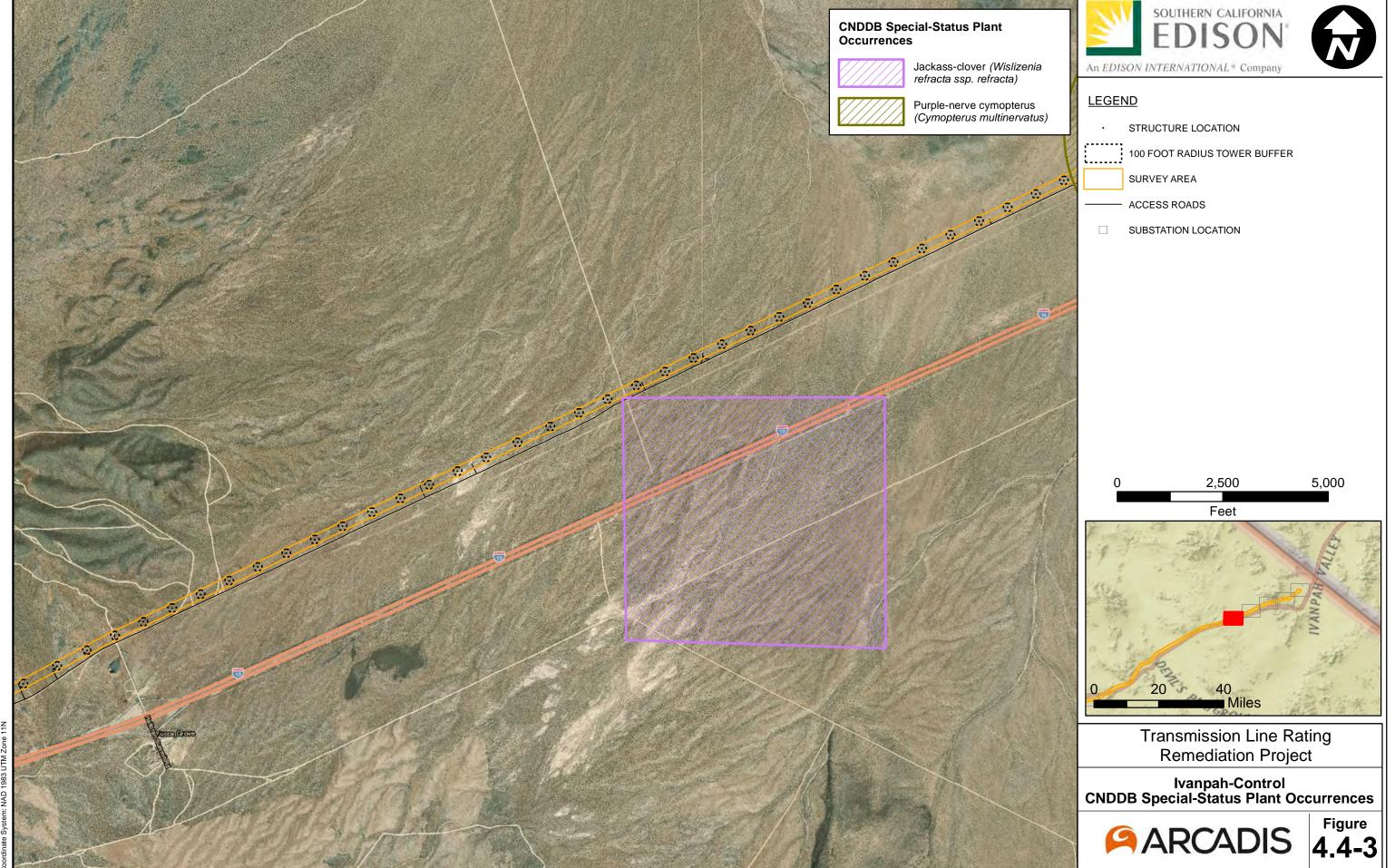
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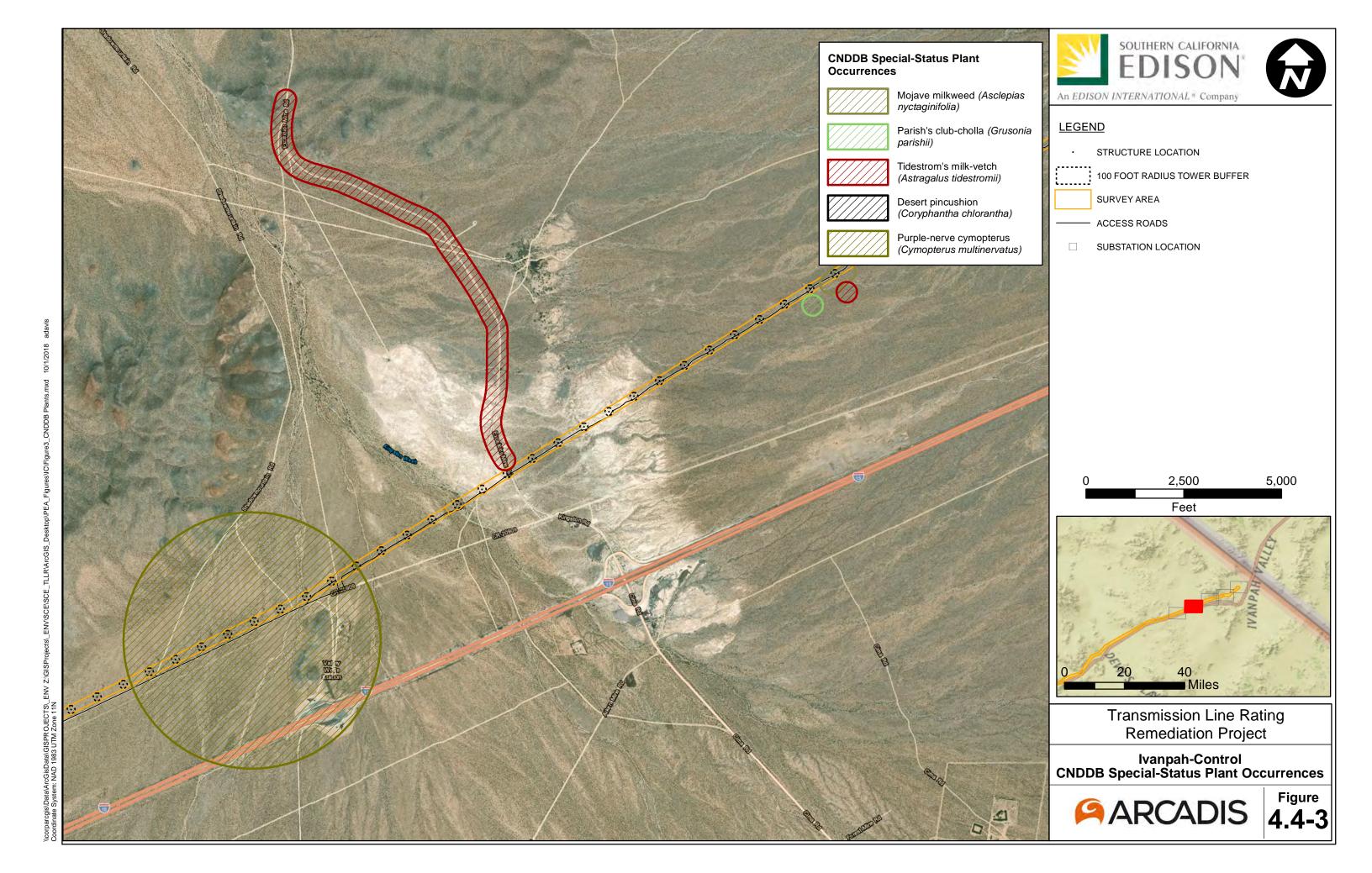


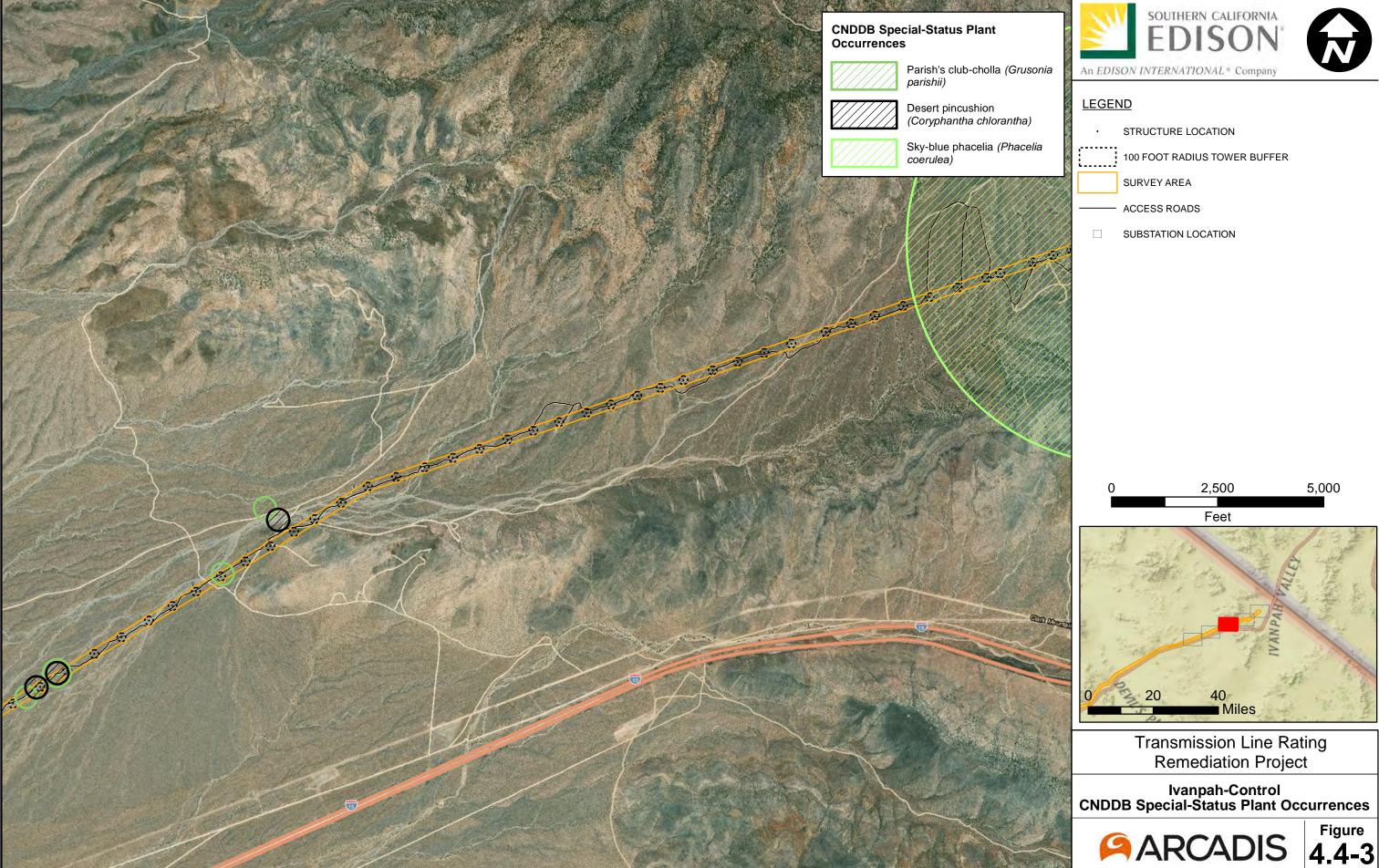


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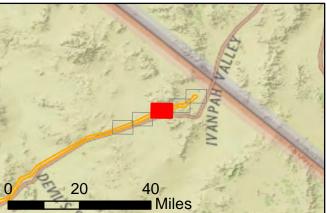
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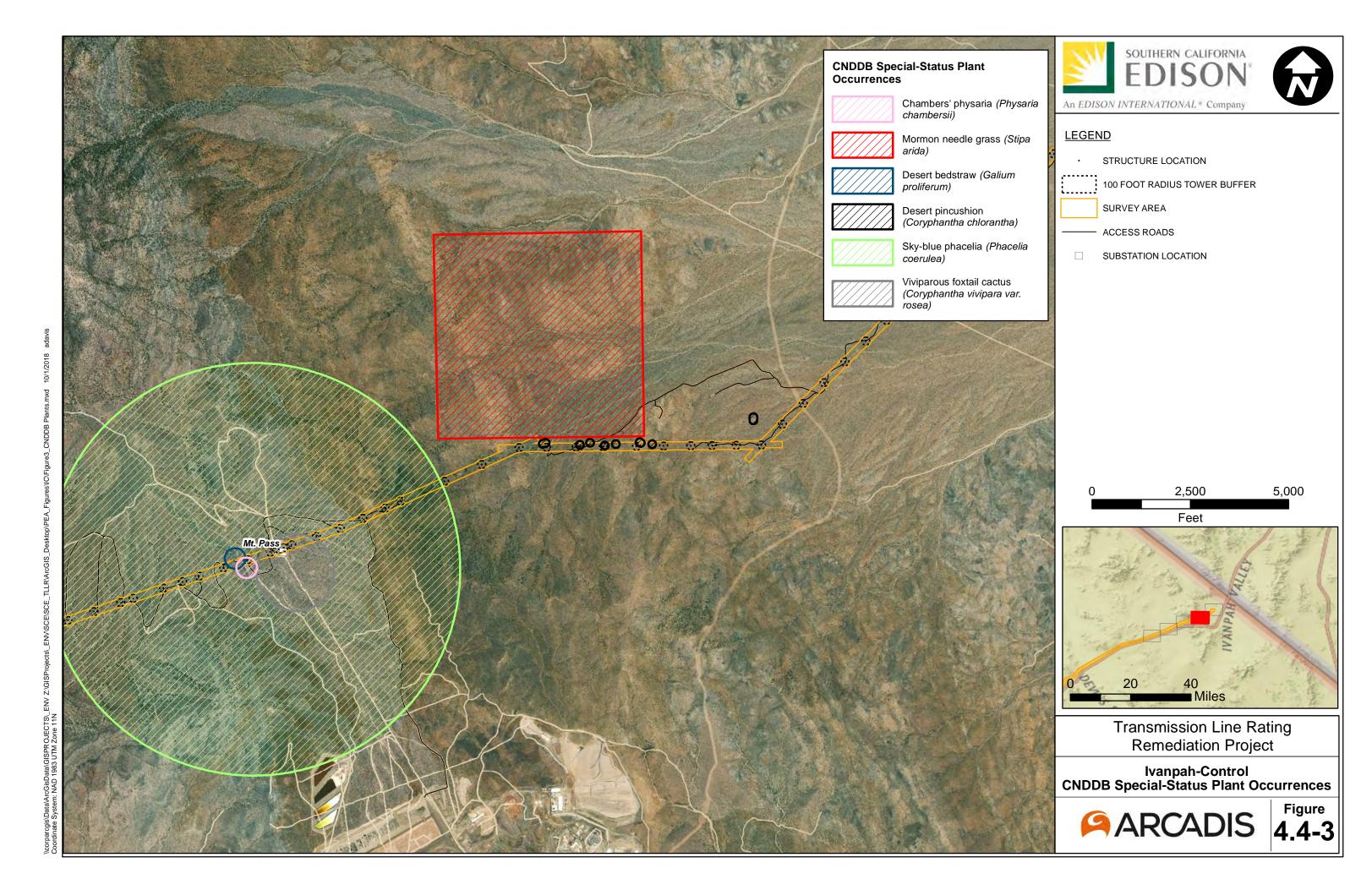


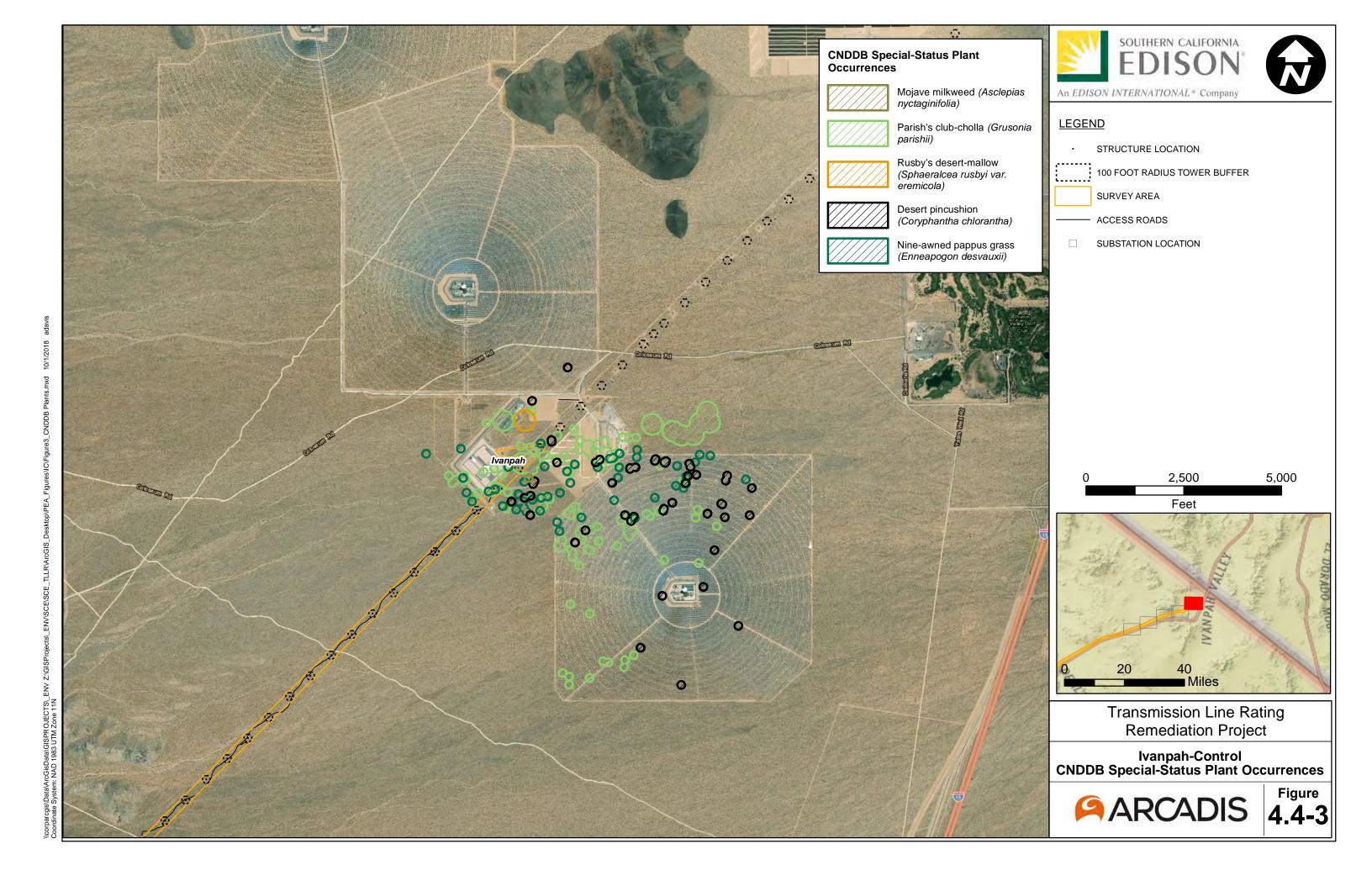
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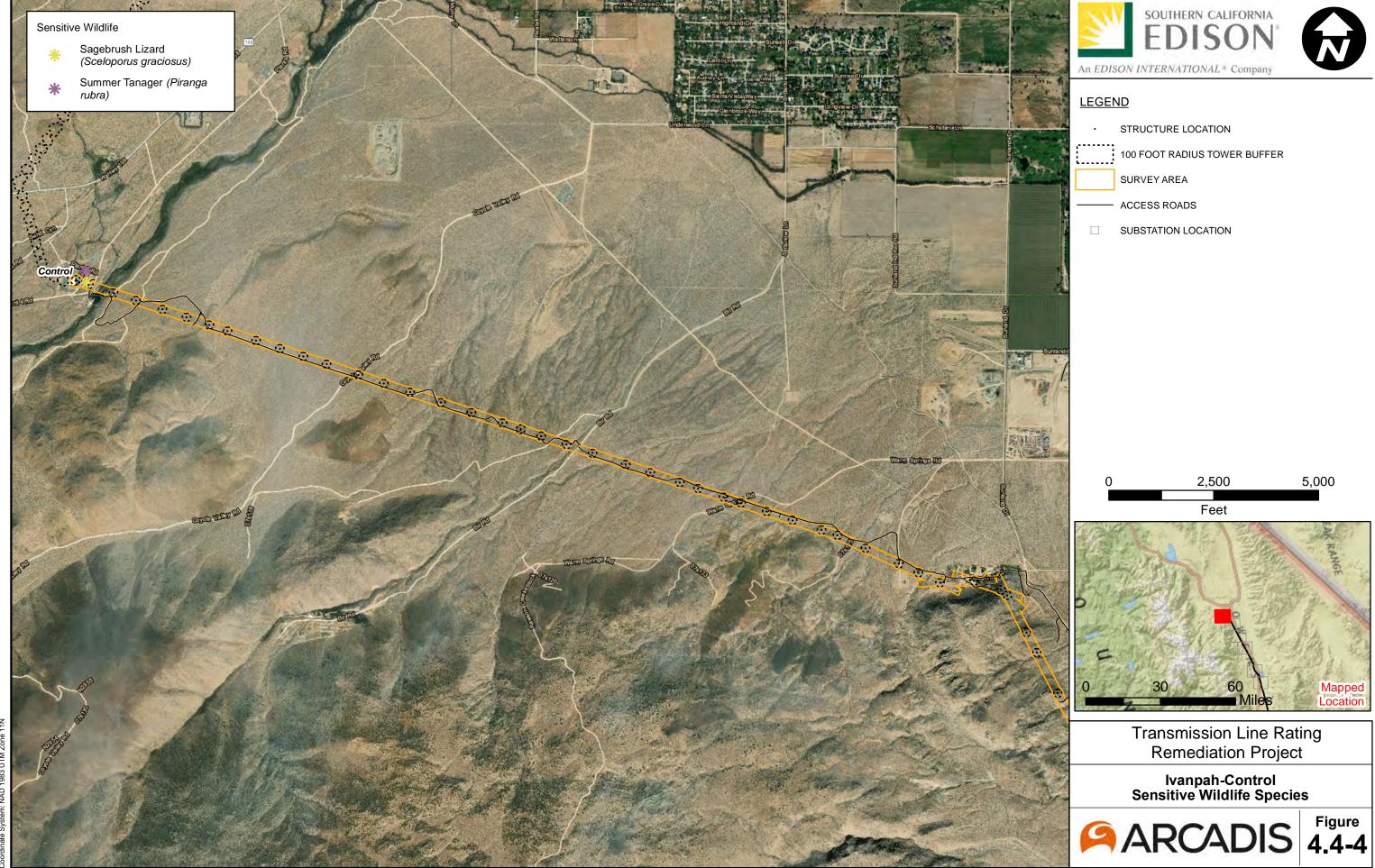


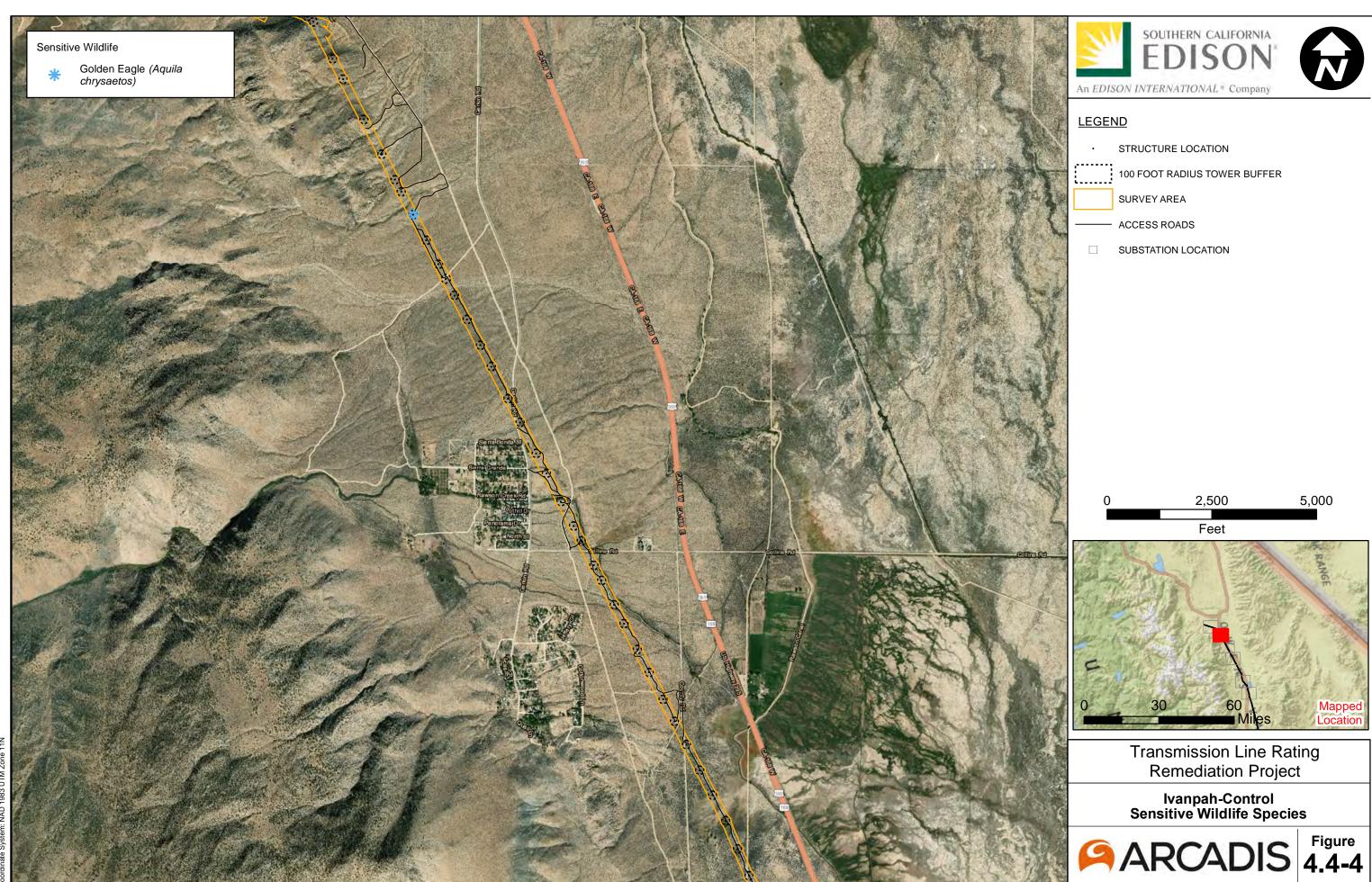
Ivanpah-Control
CNDDB Special-Status Plant Occurrences



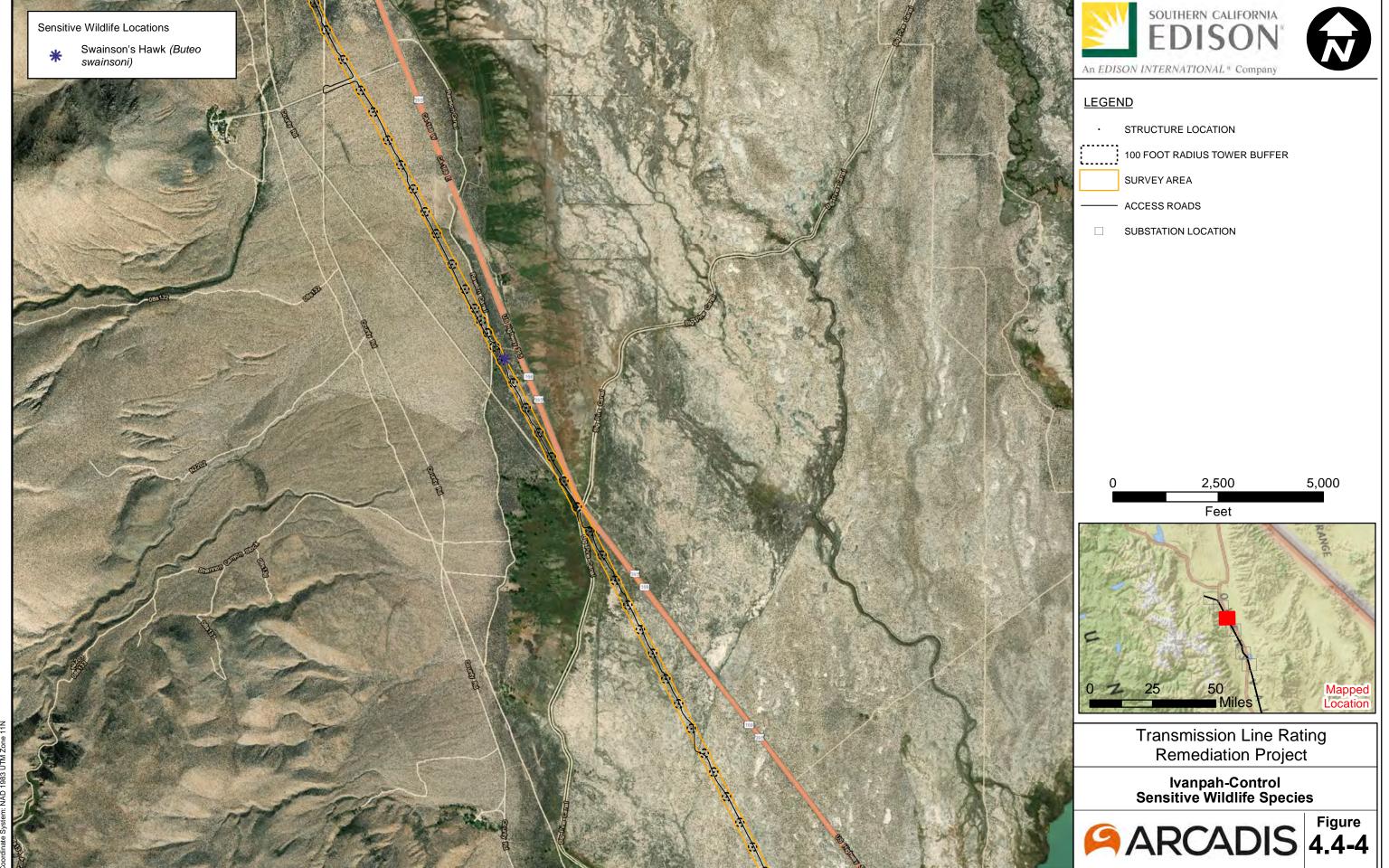


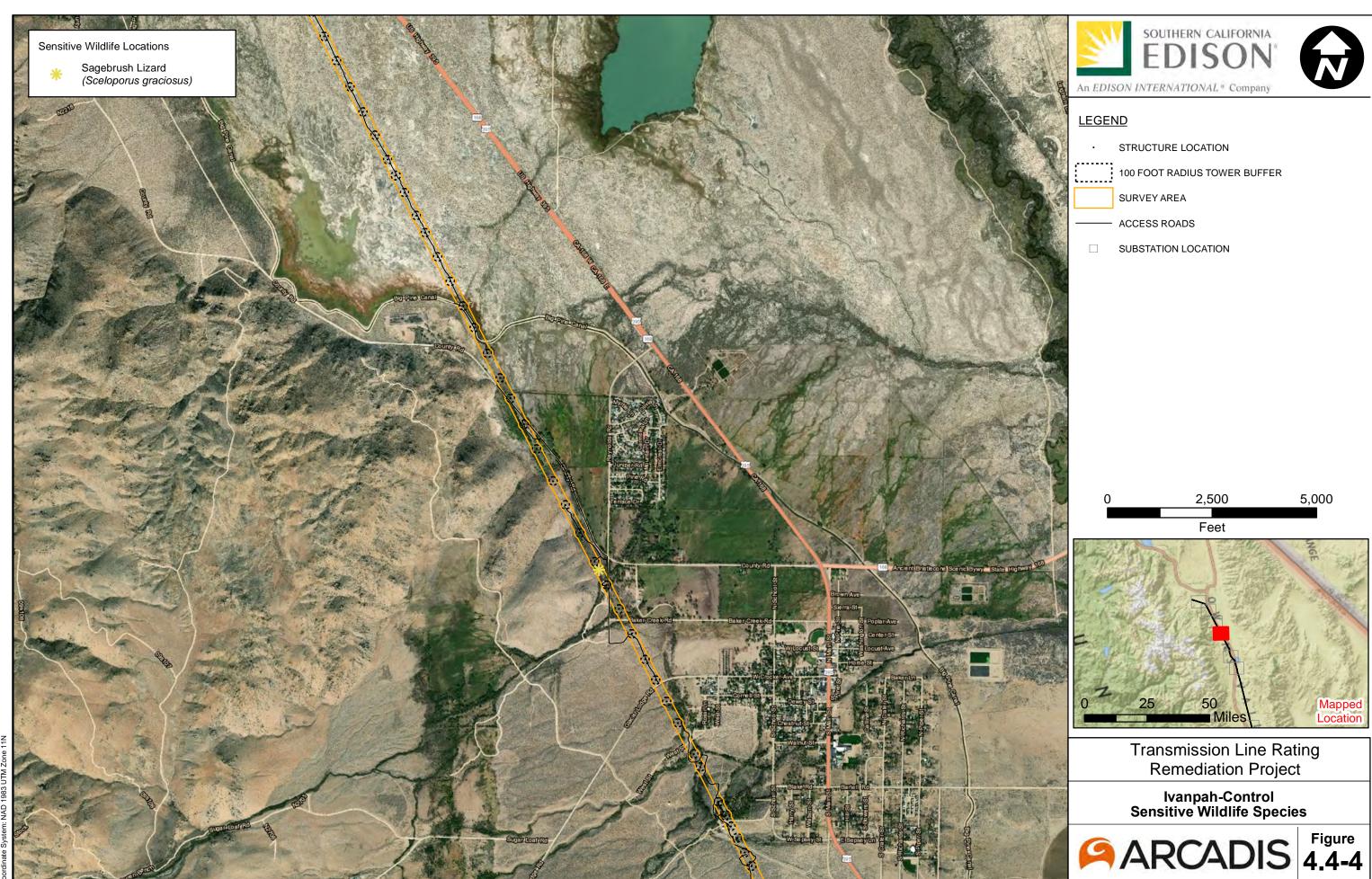


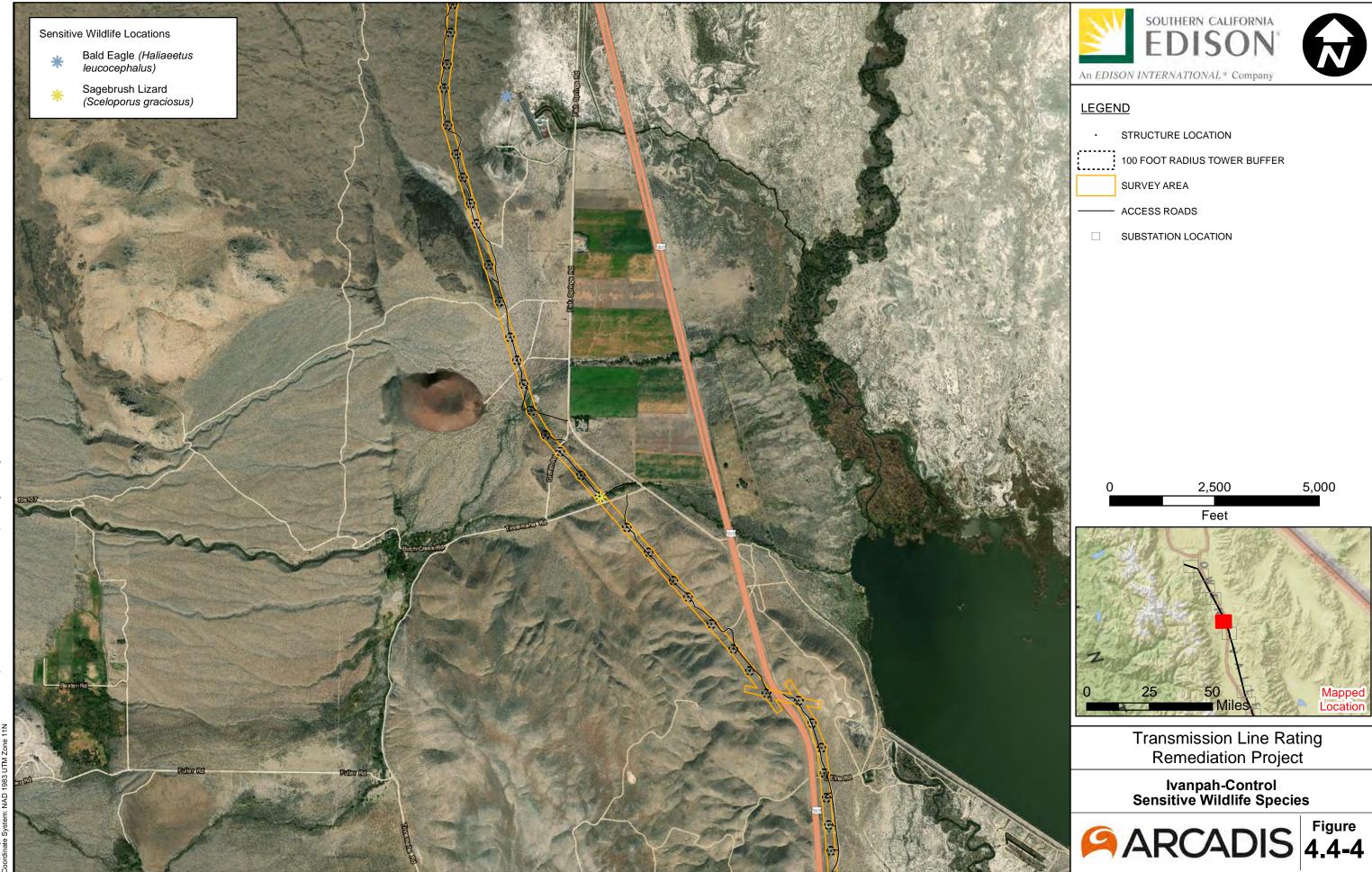


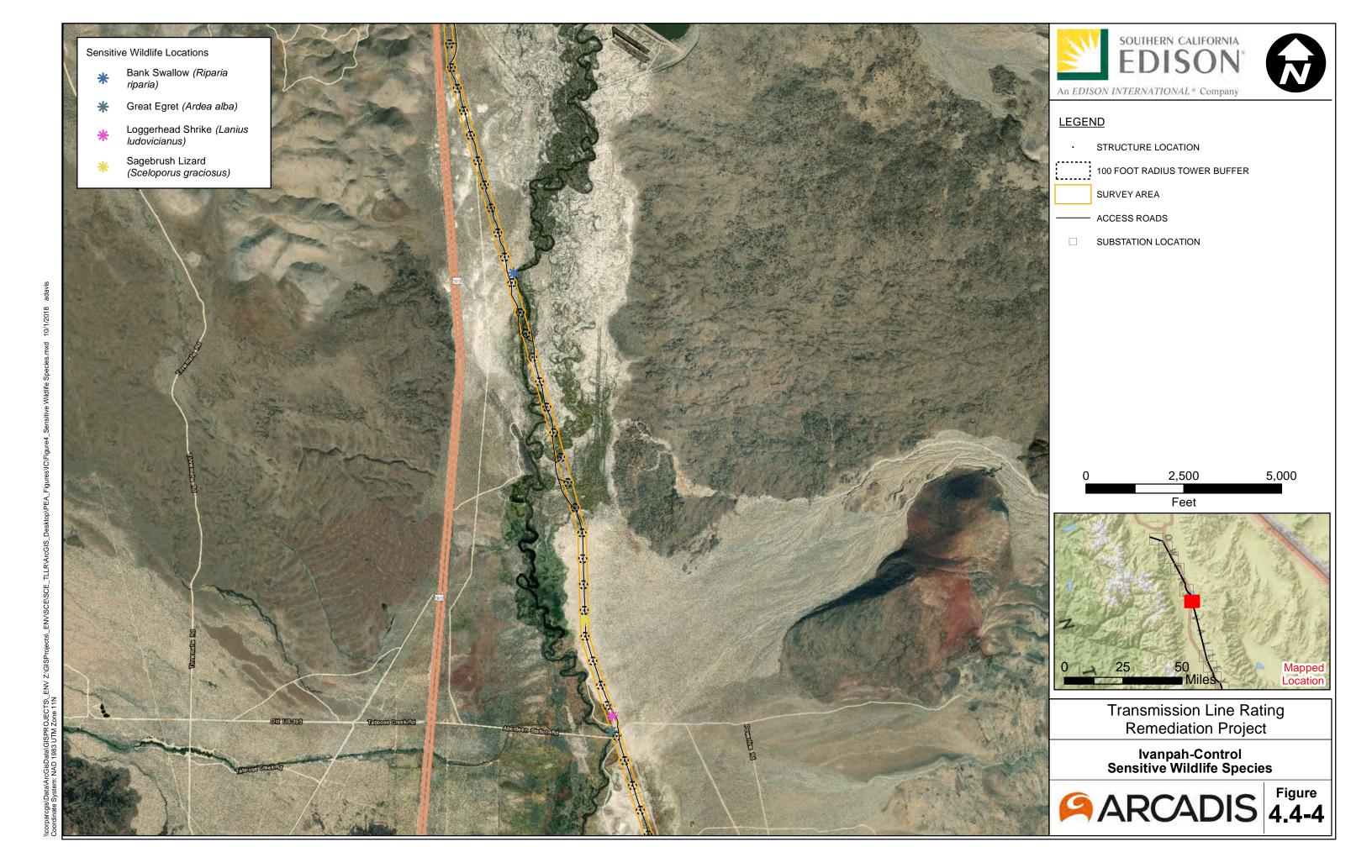


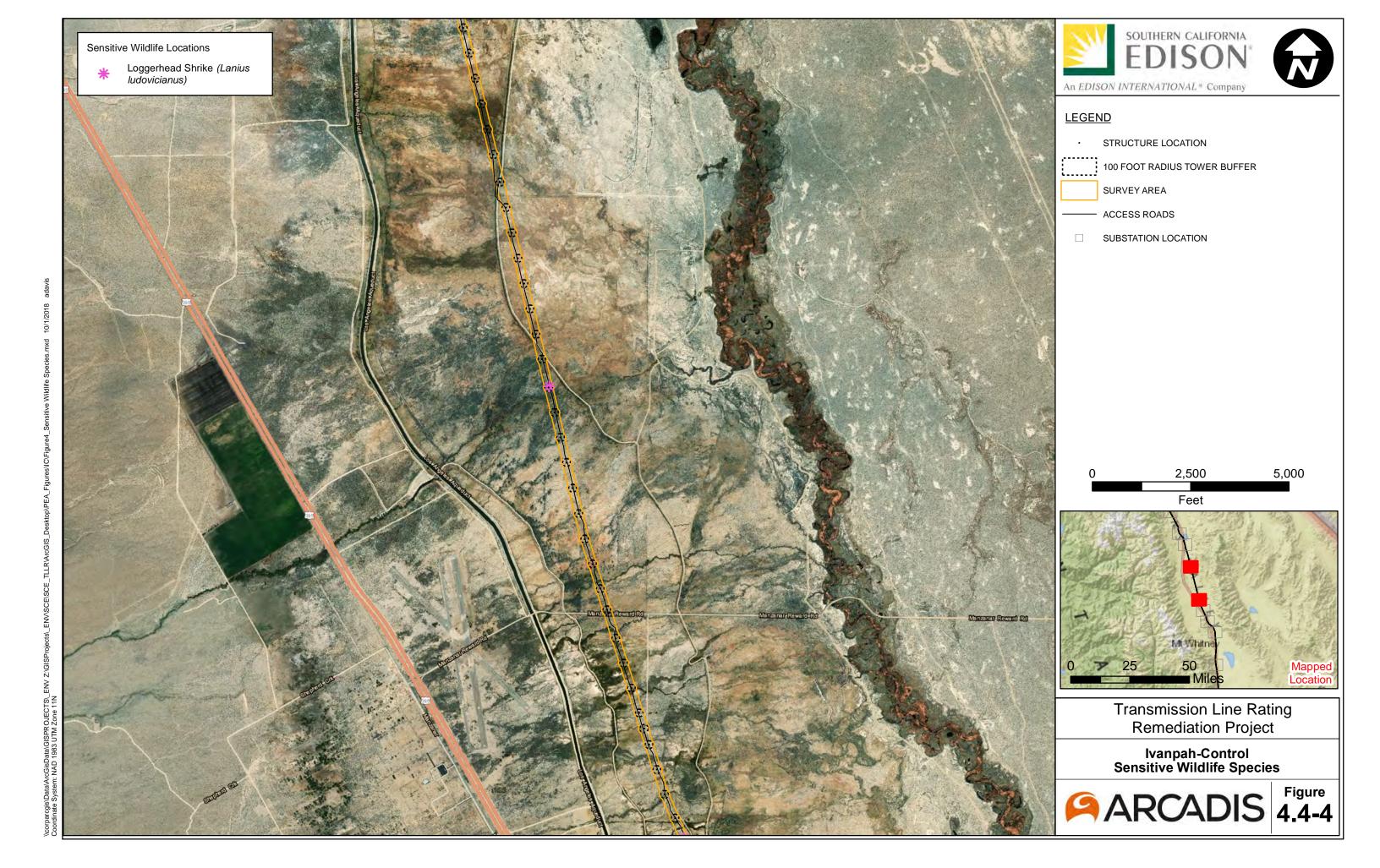
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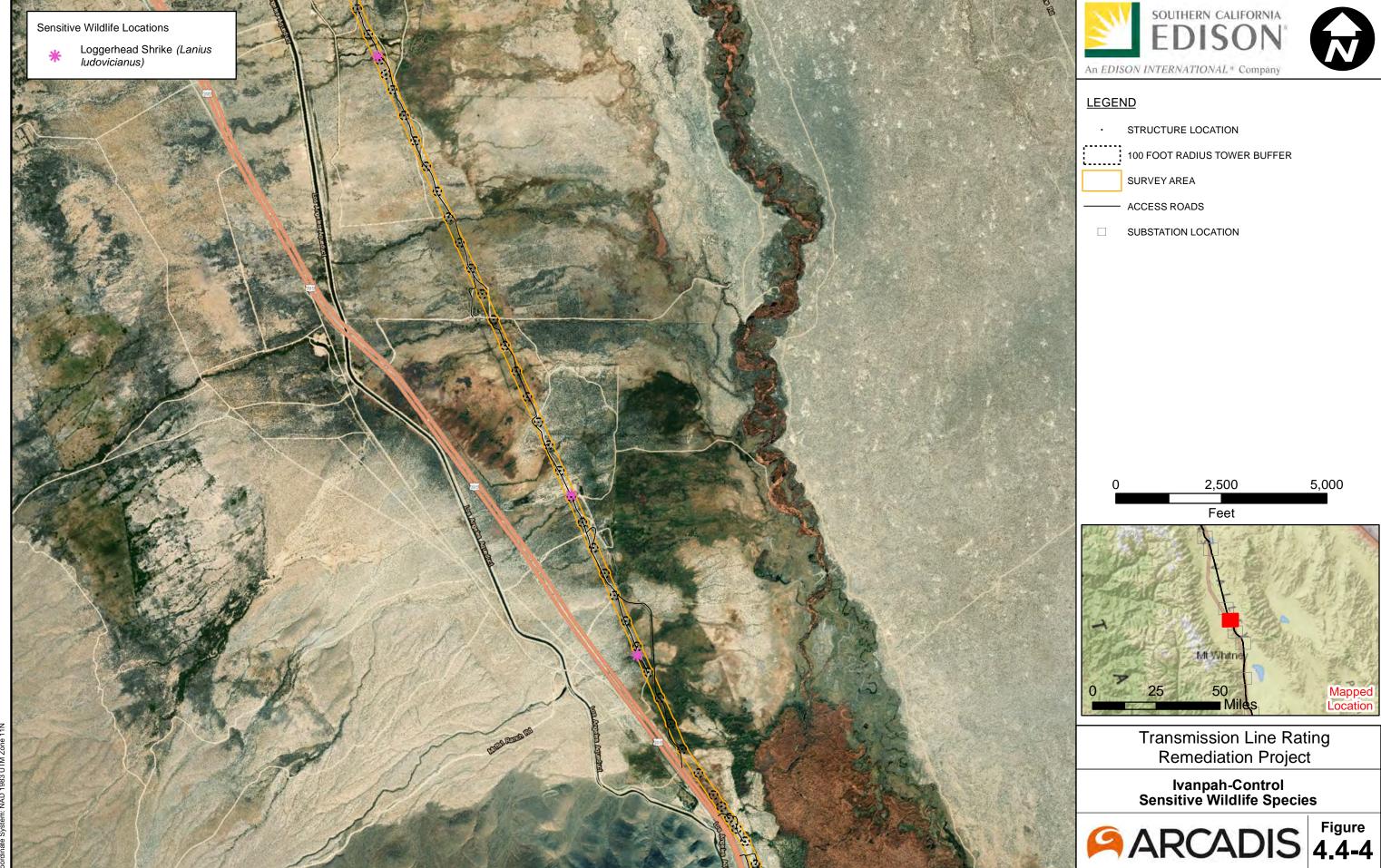




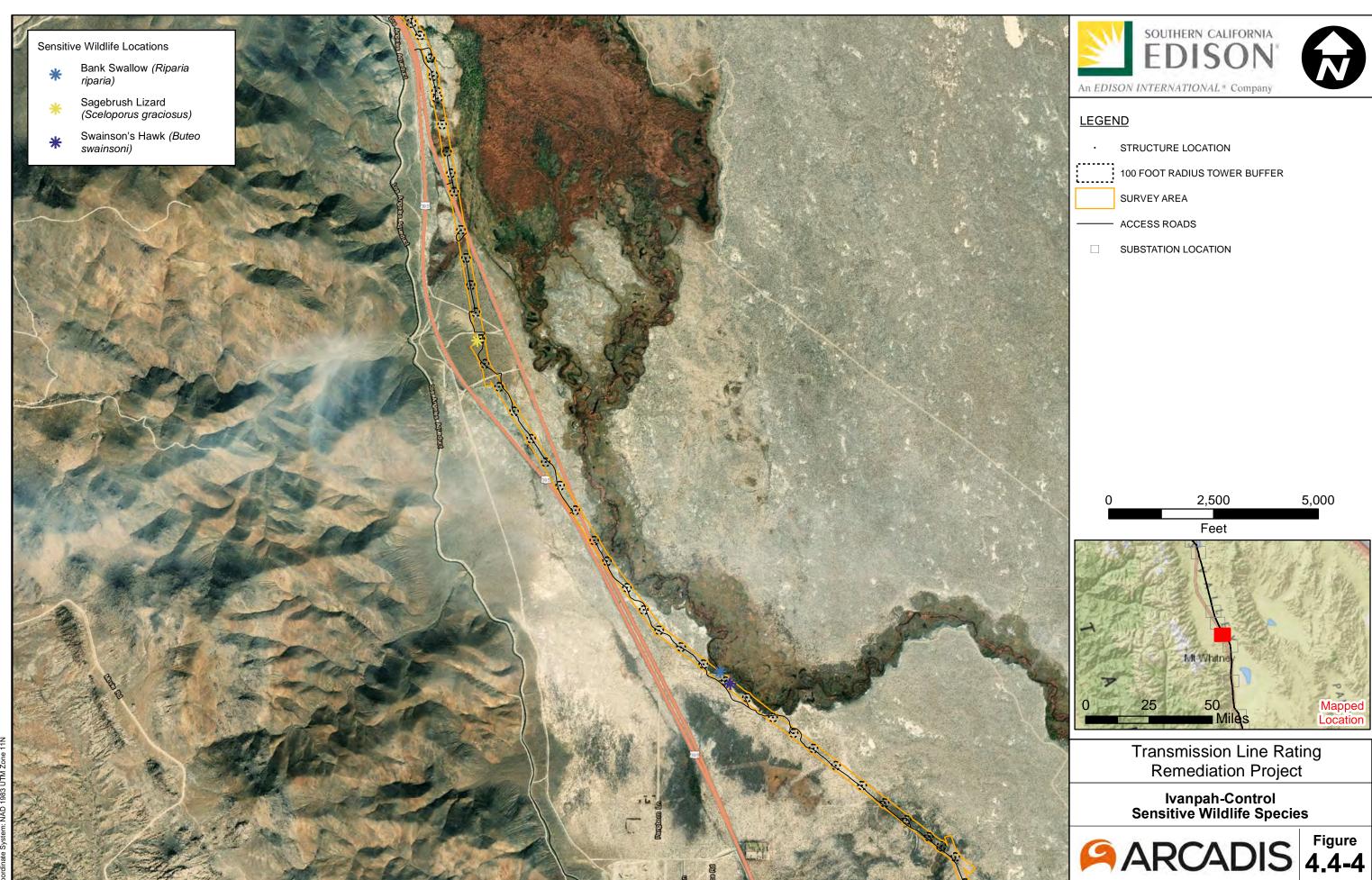




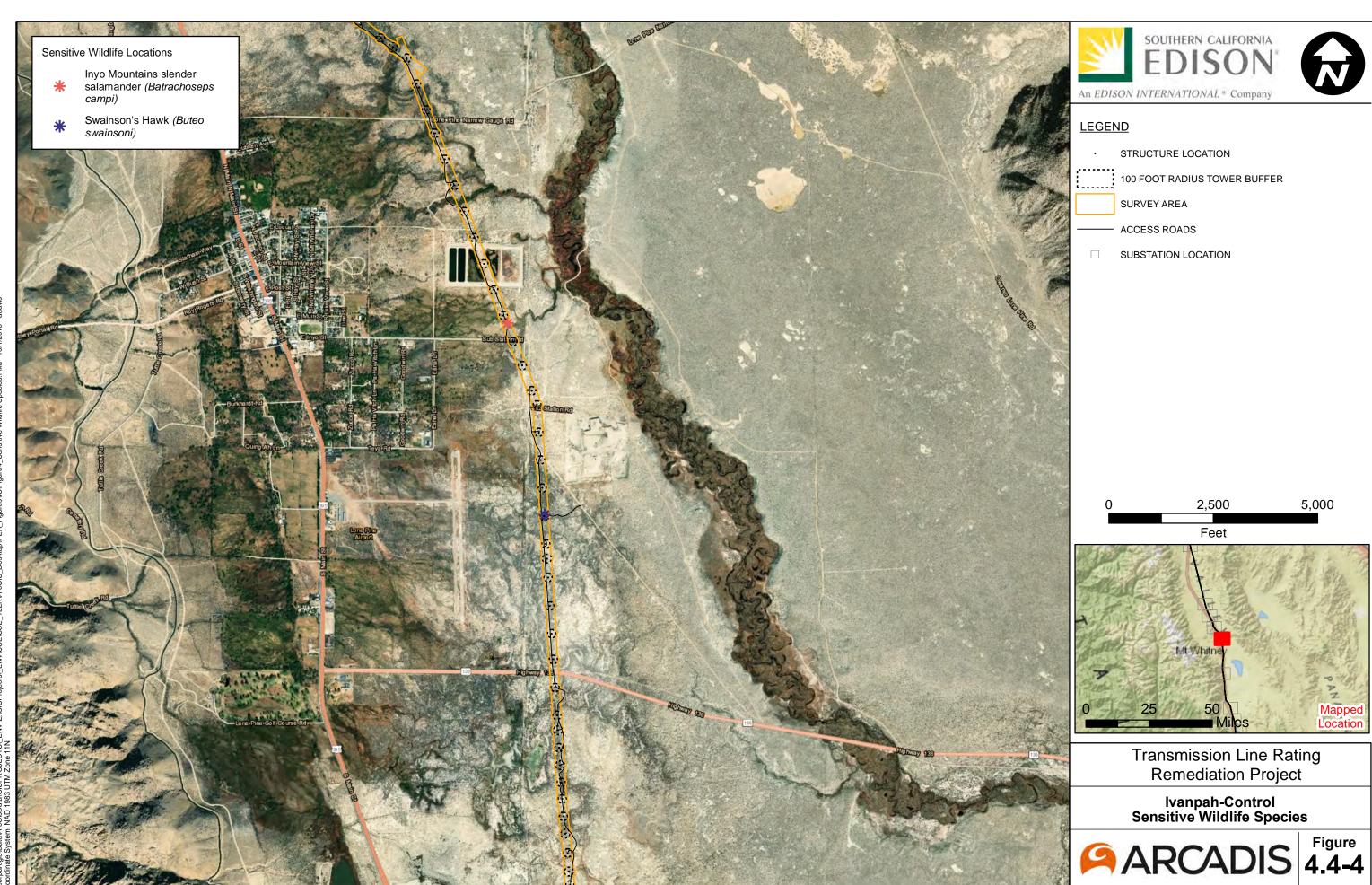


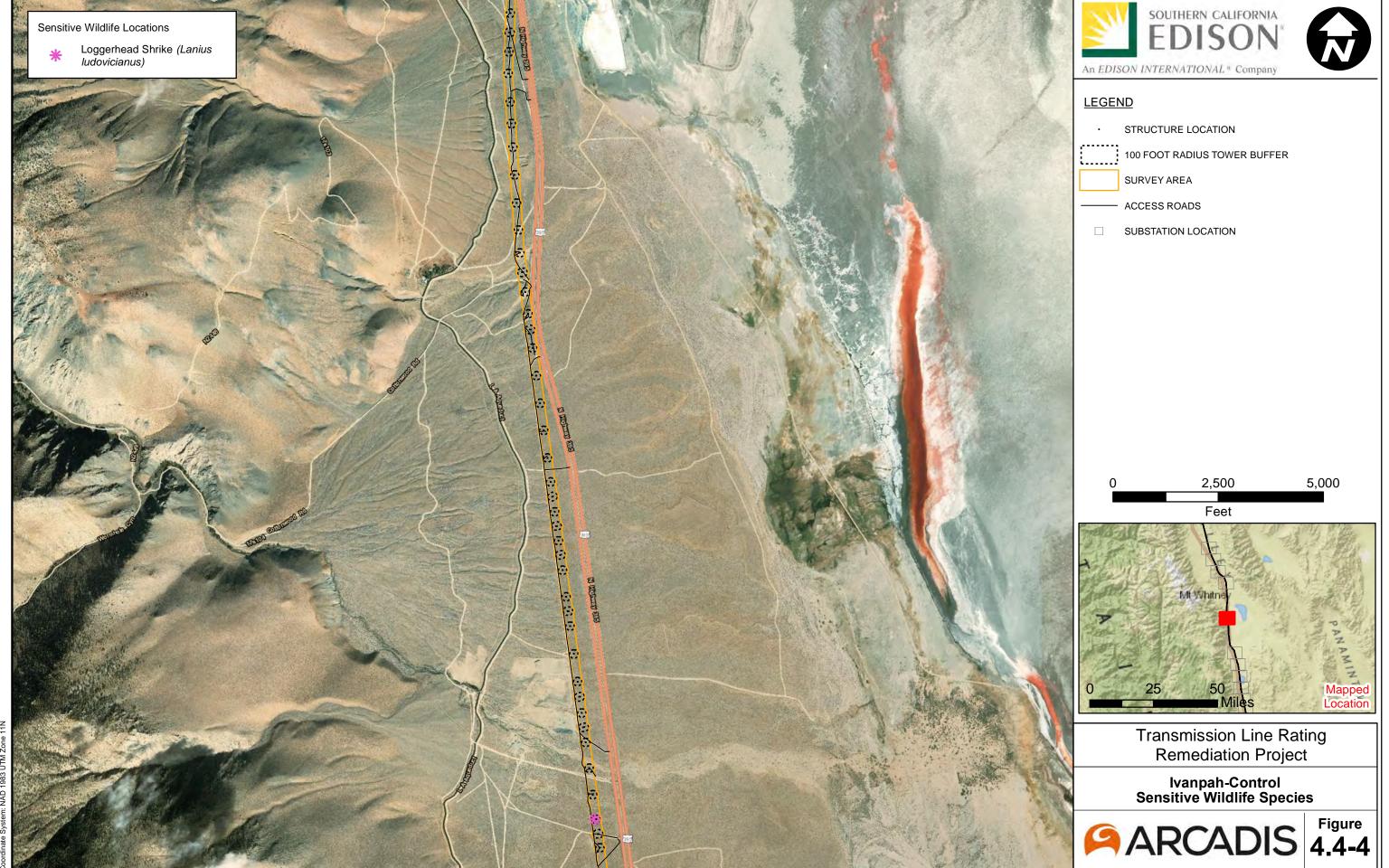


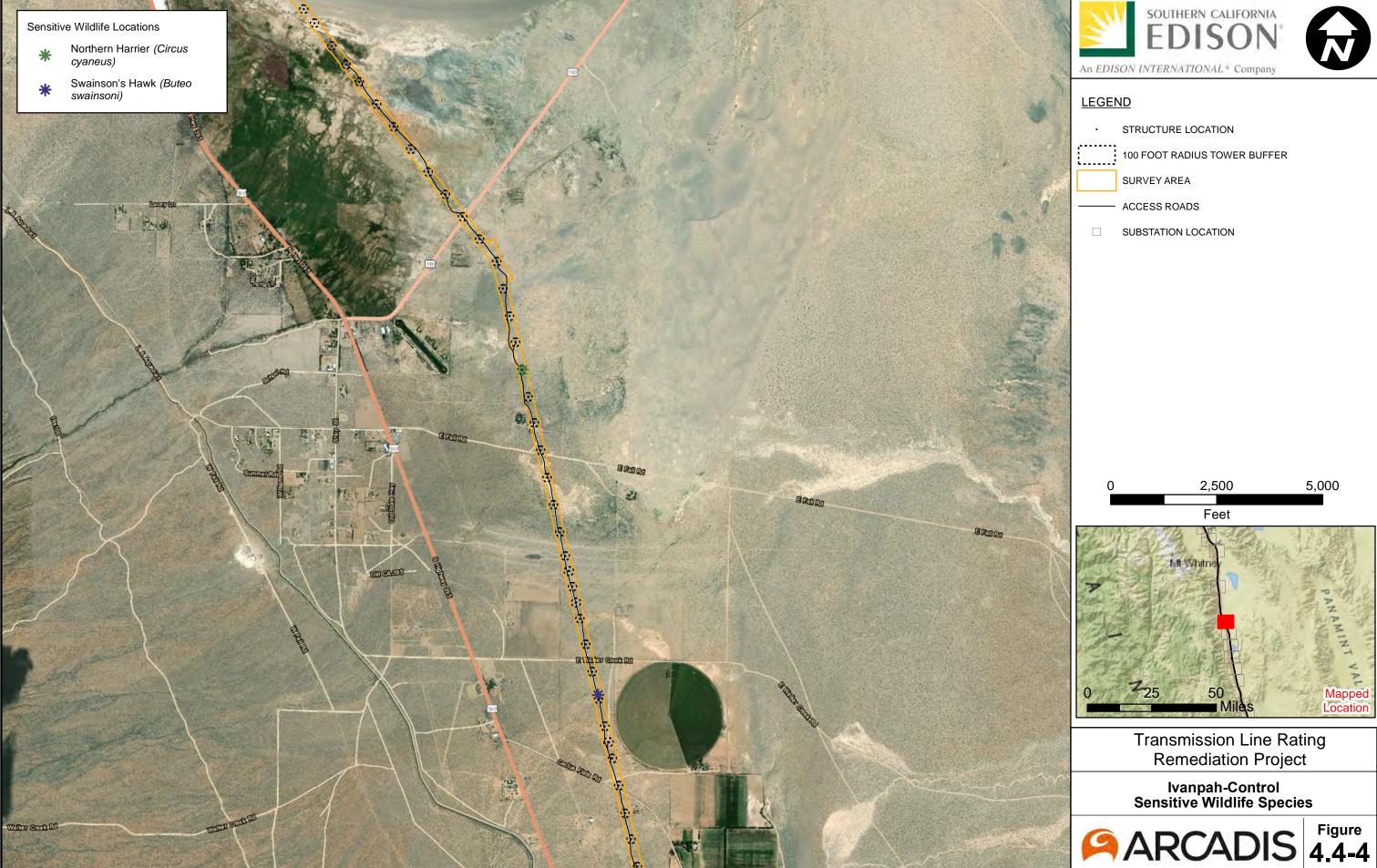
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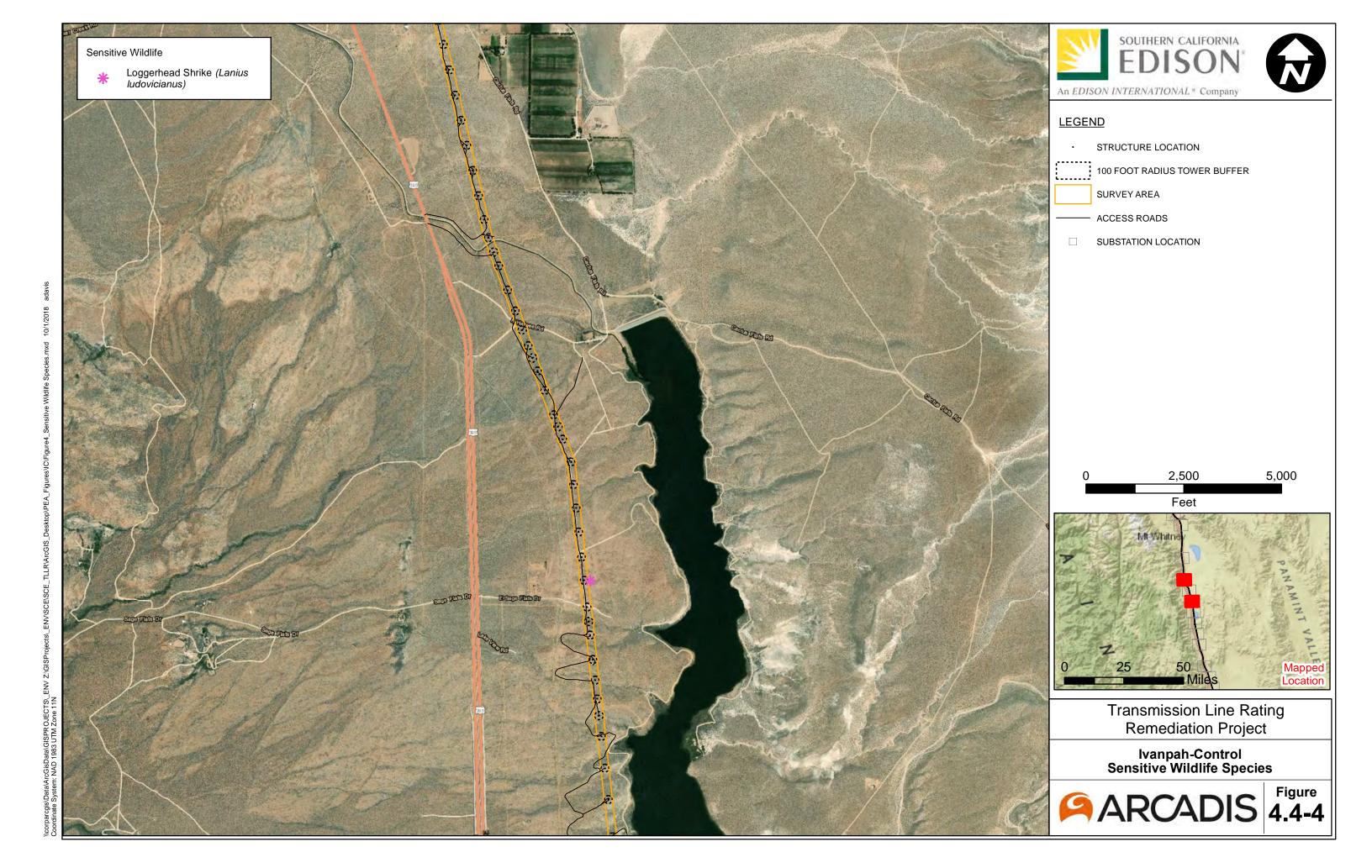
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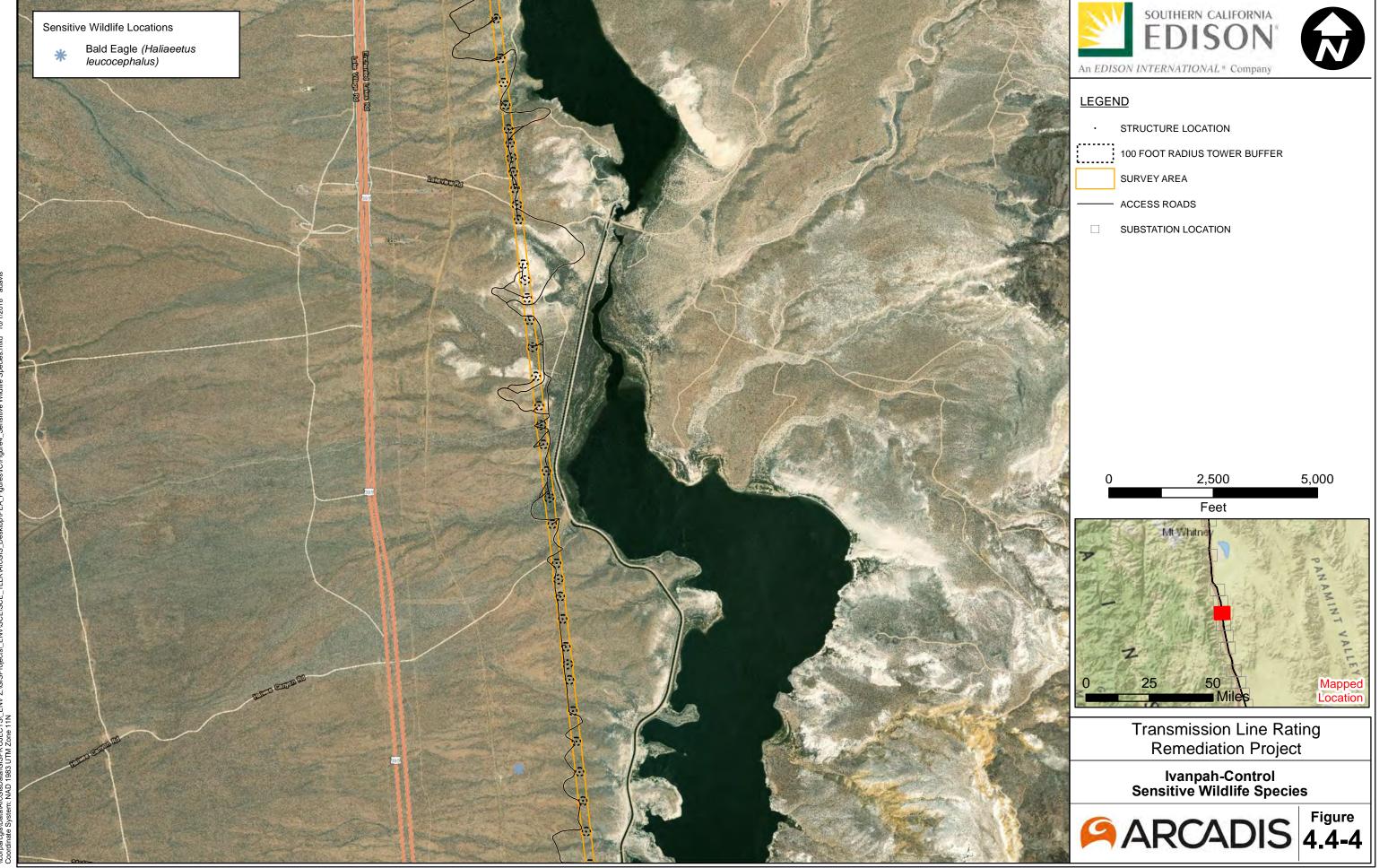




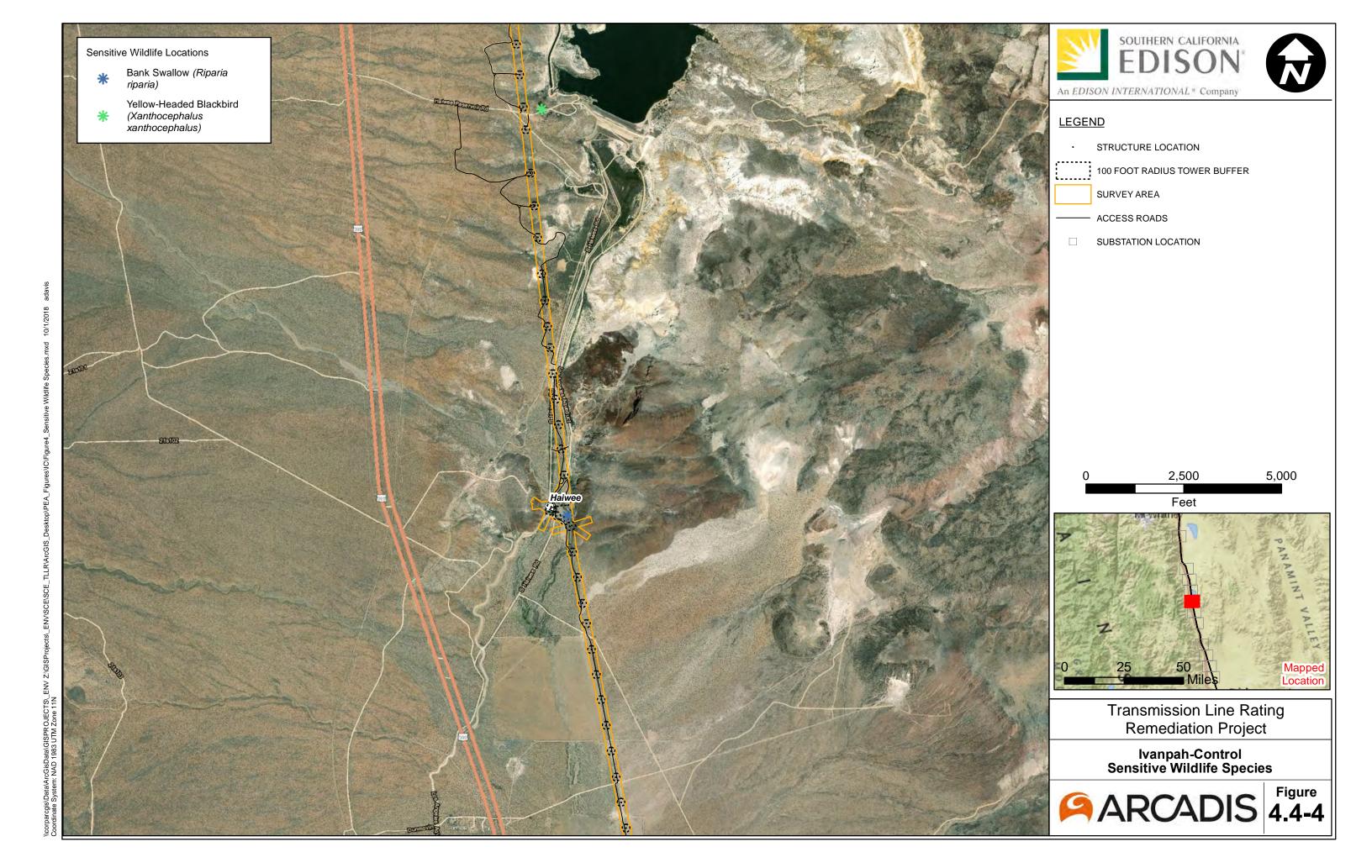


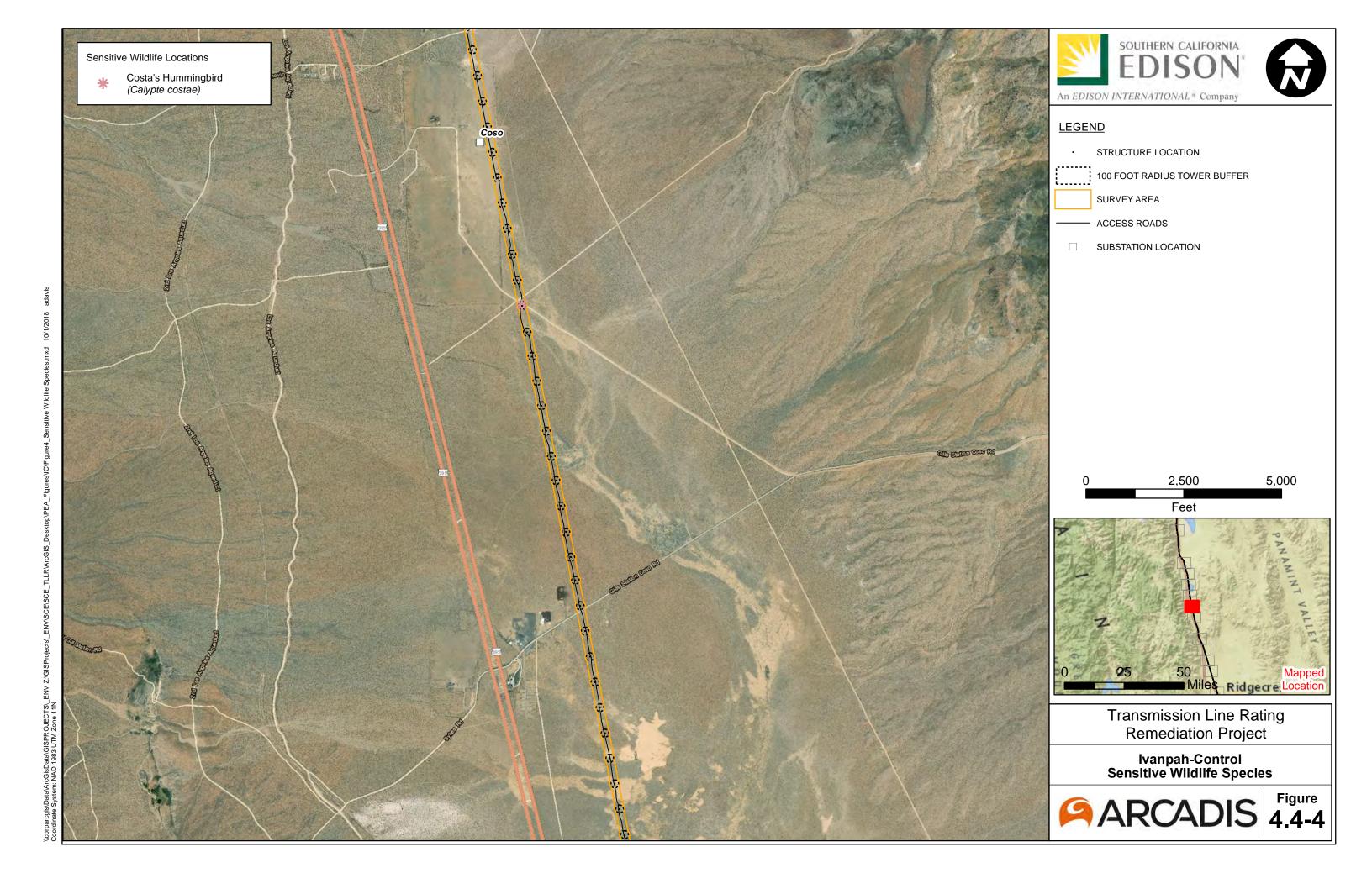


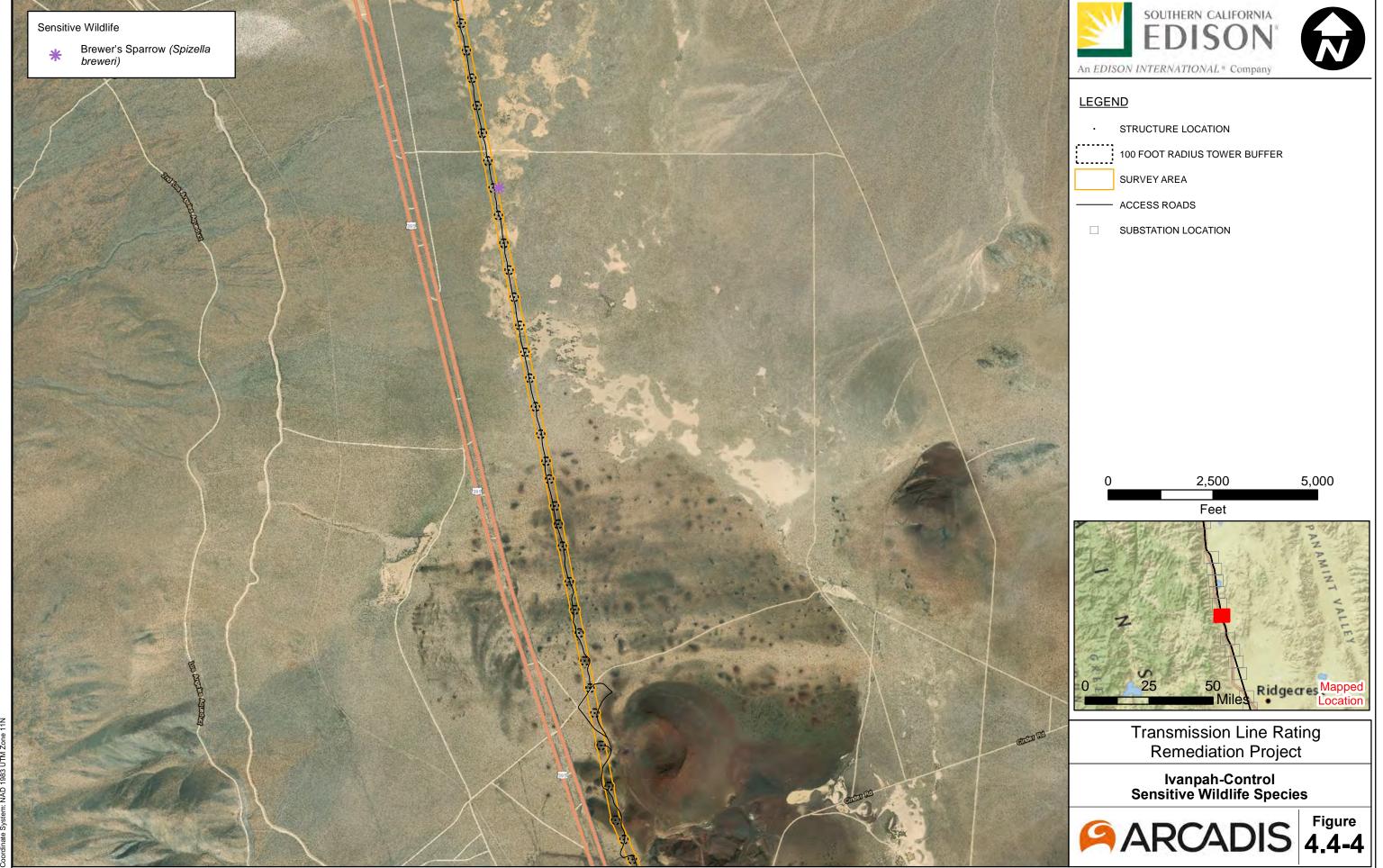


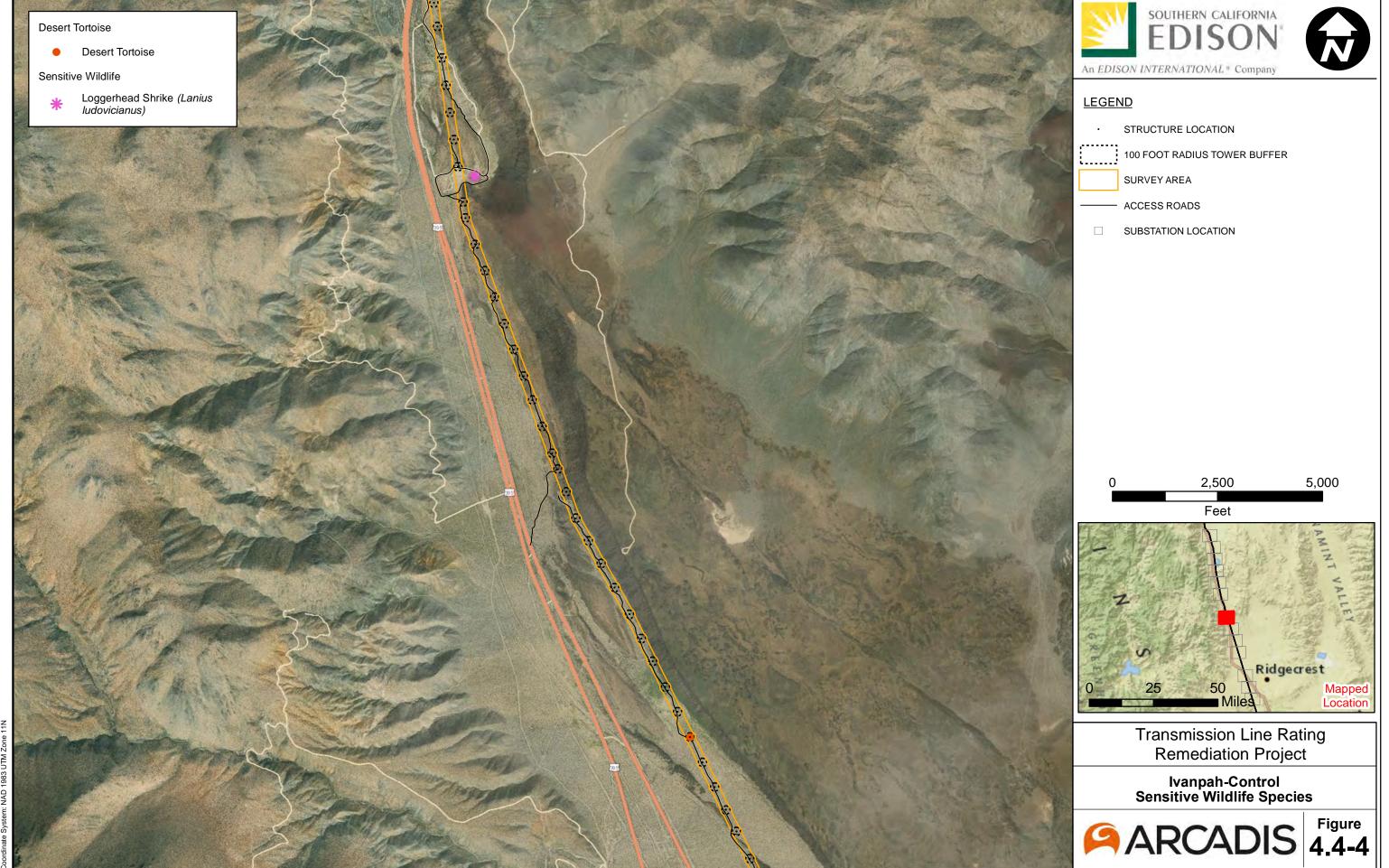


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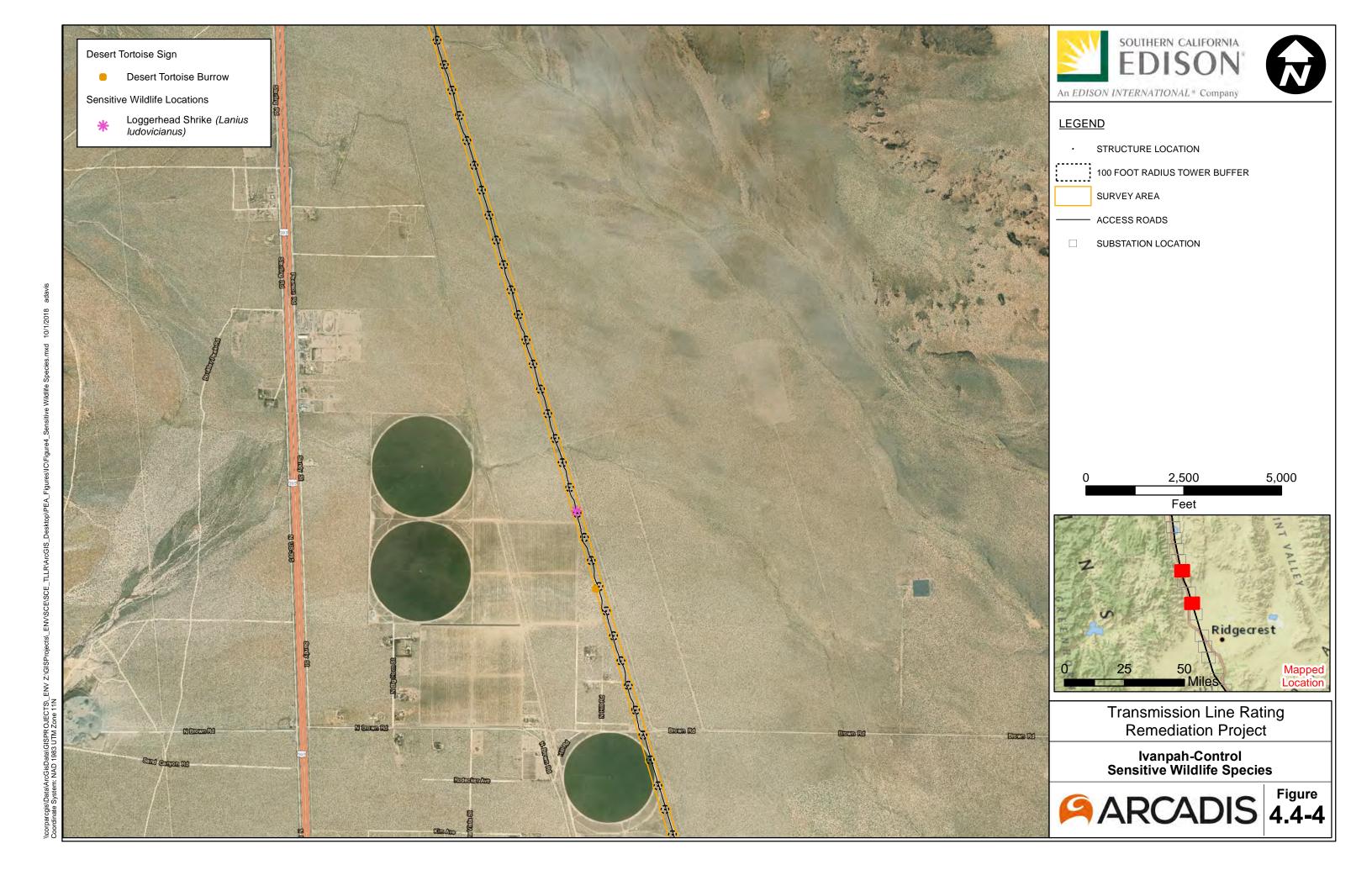


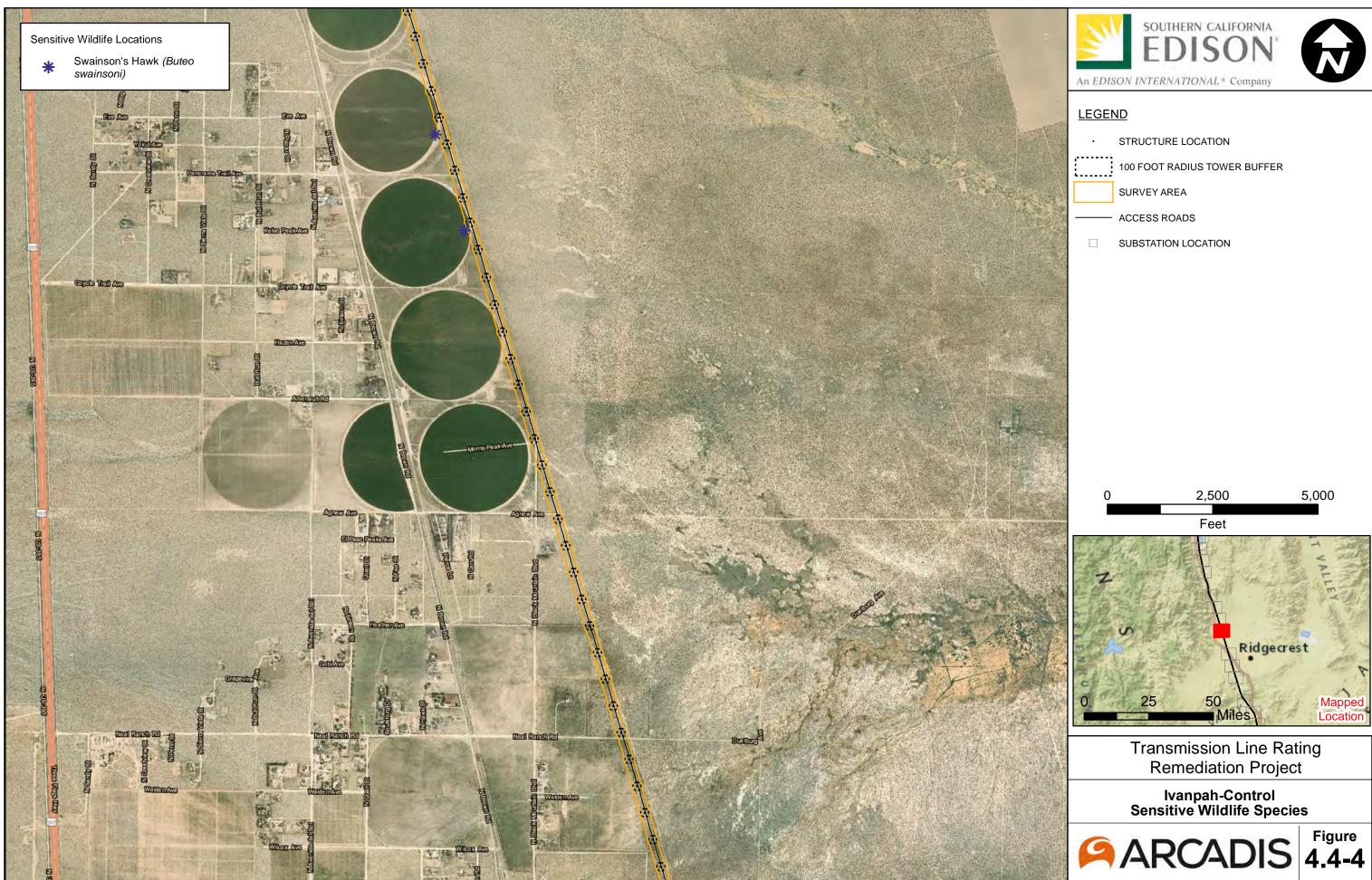


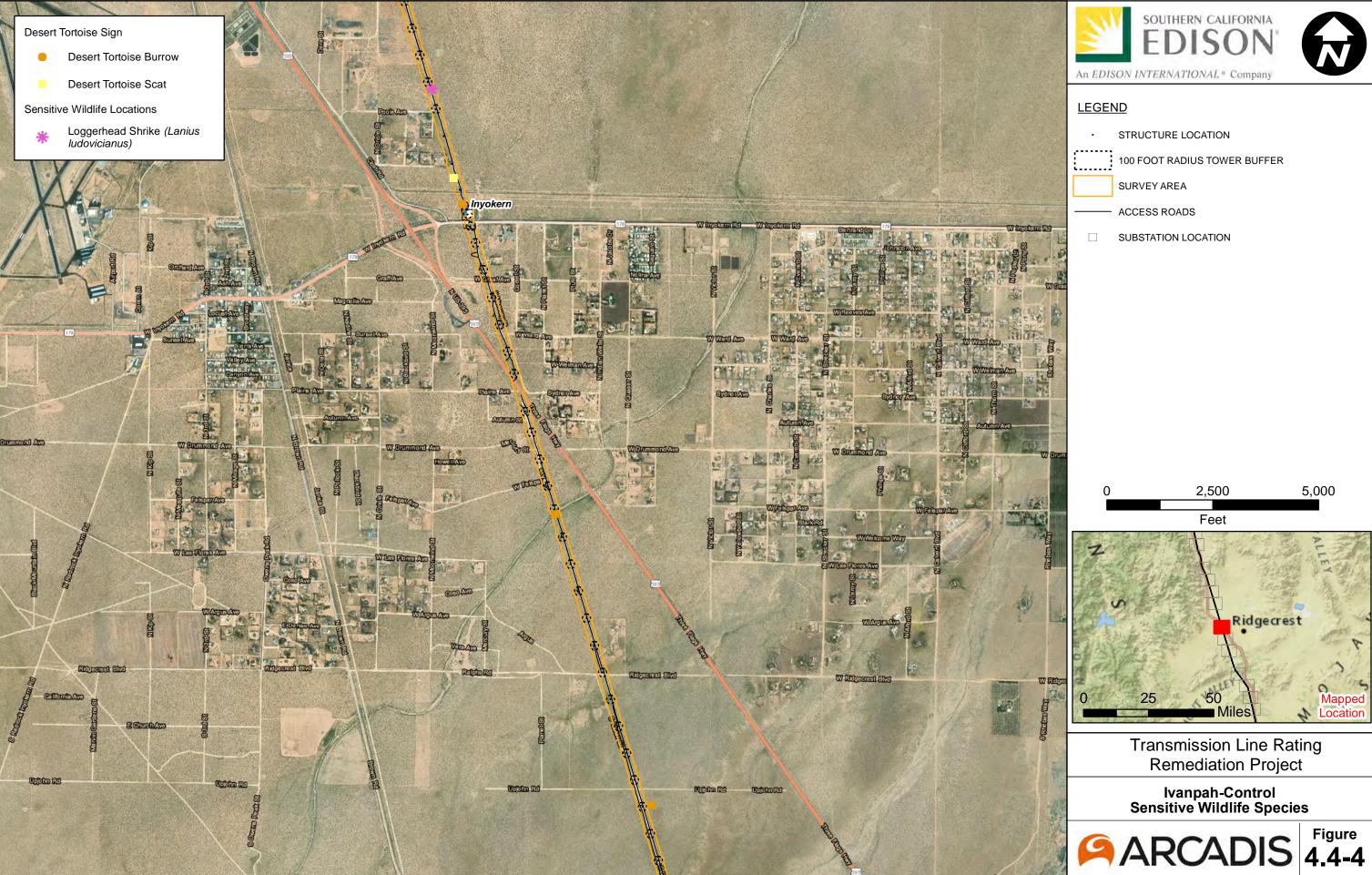


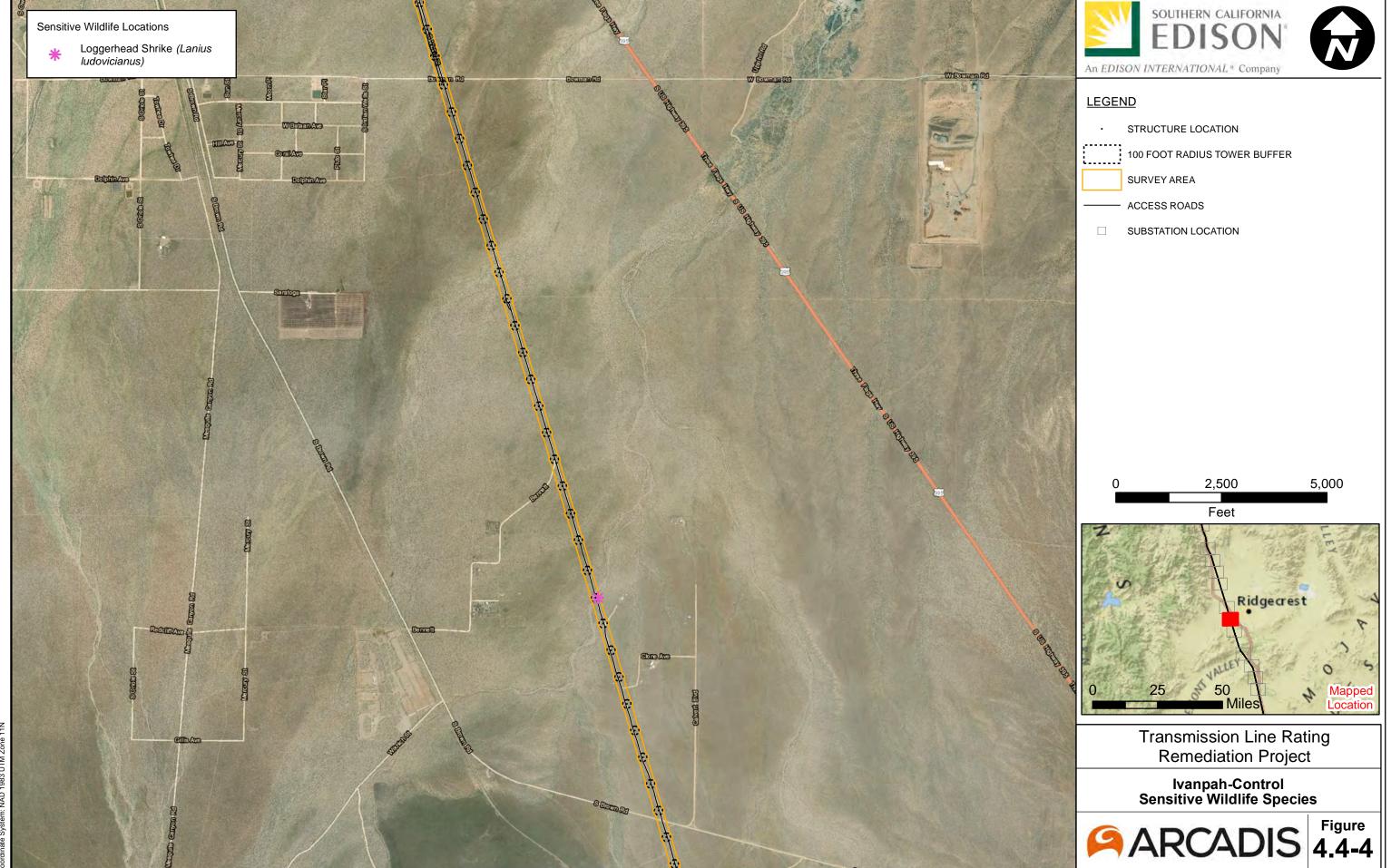


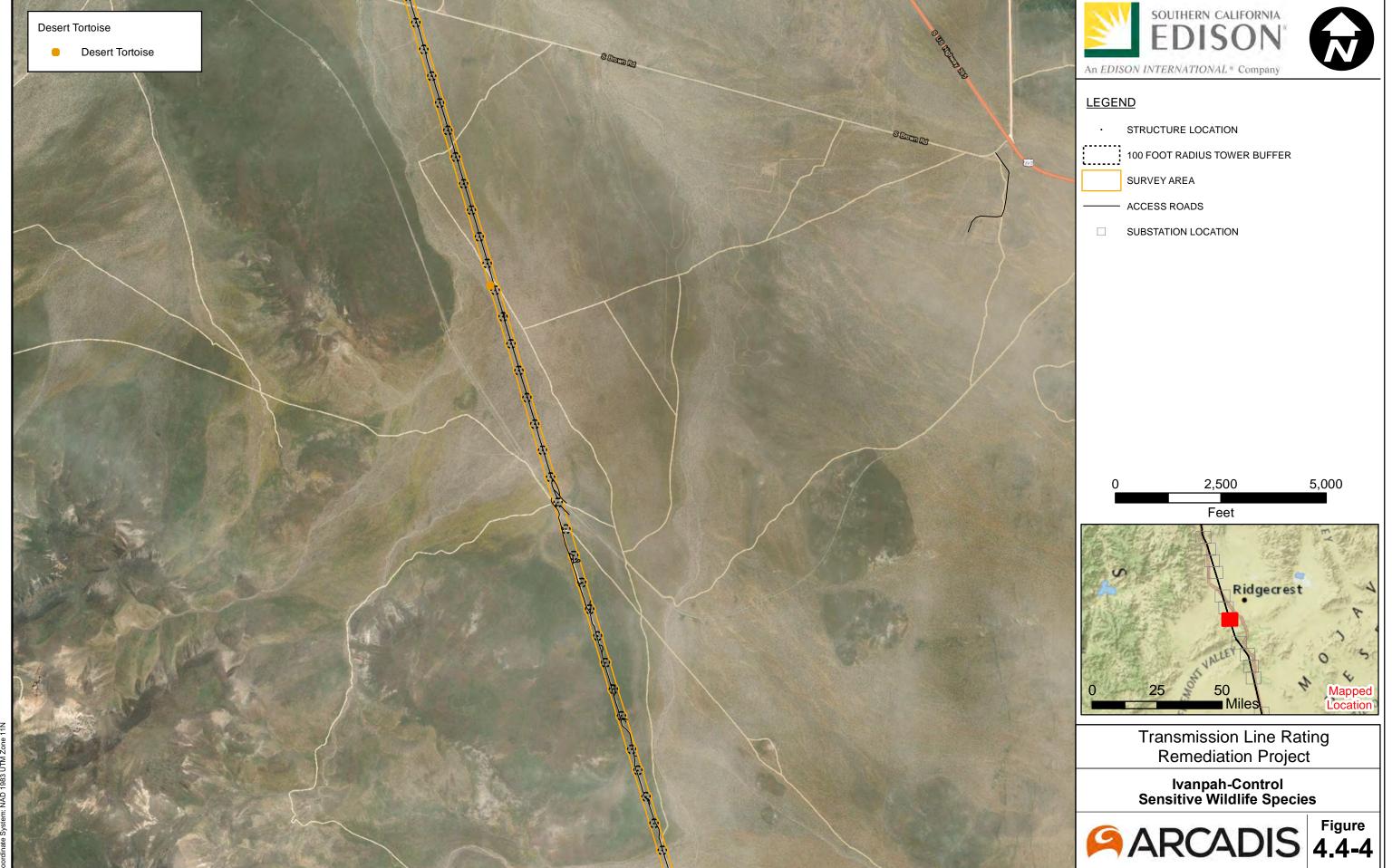




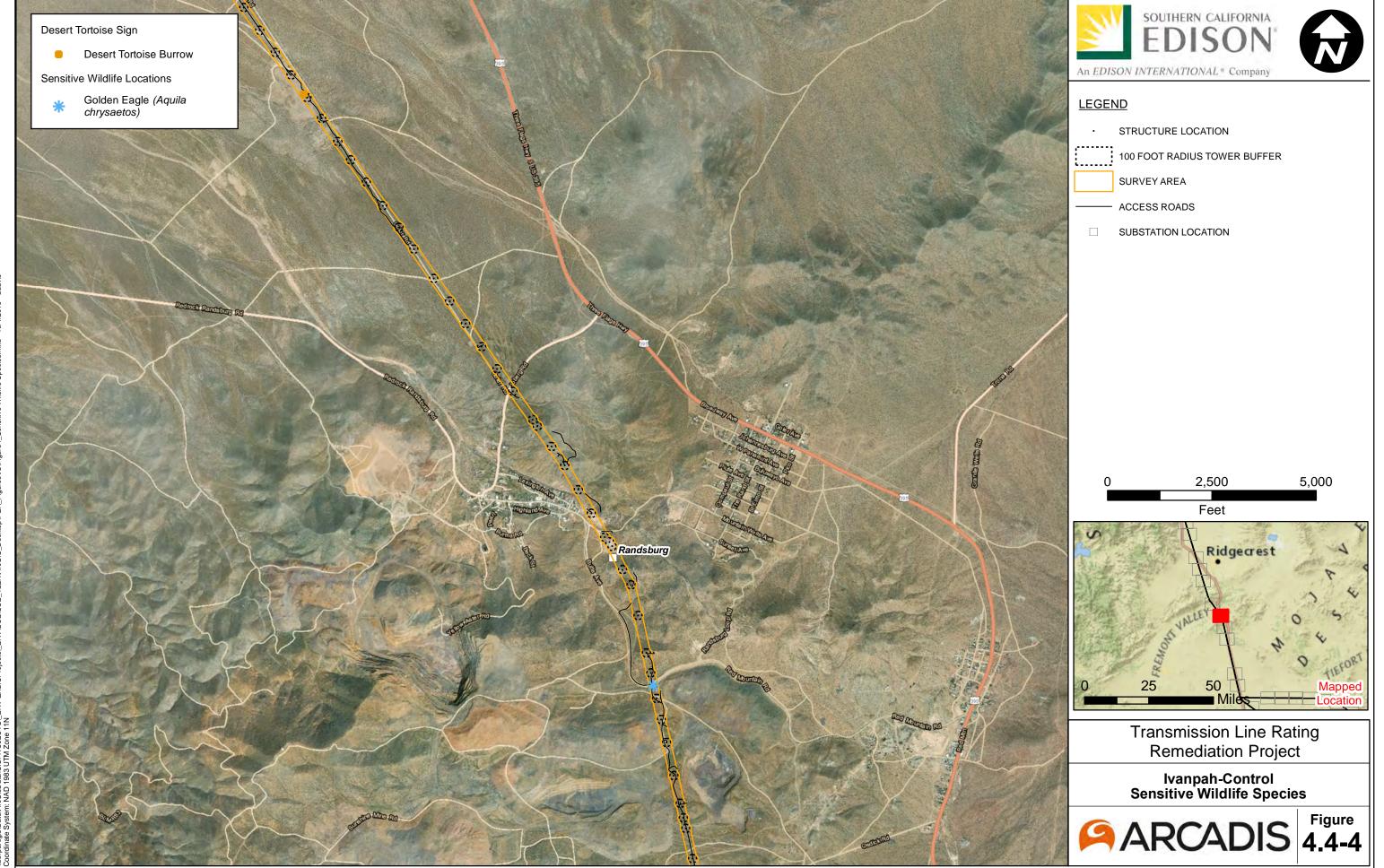


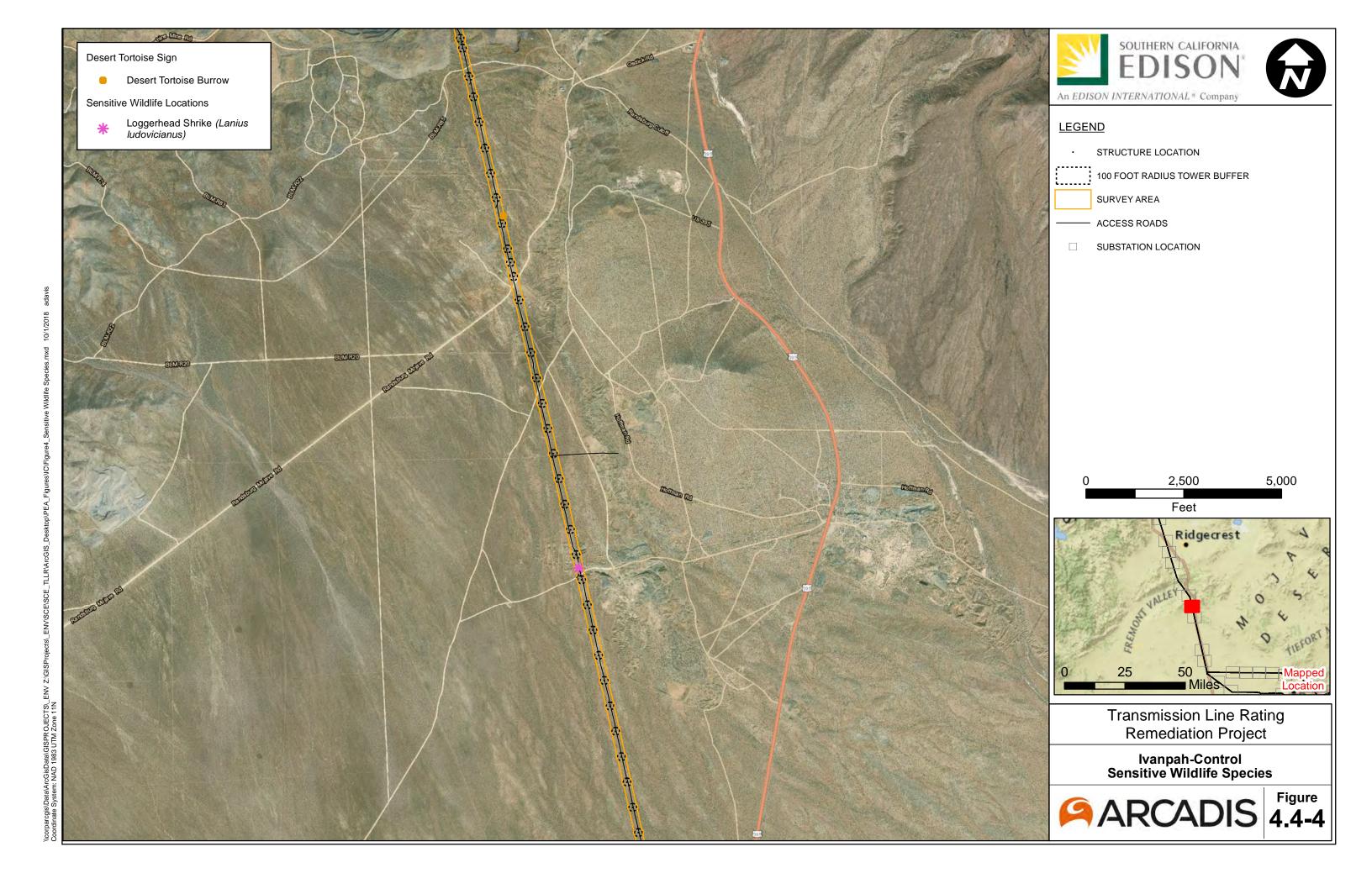


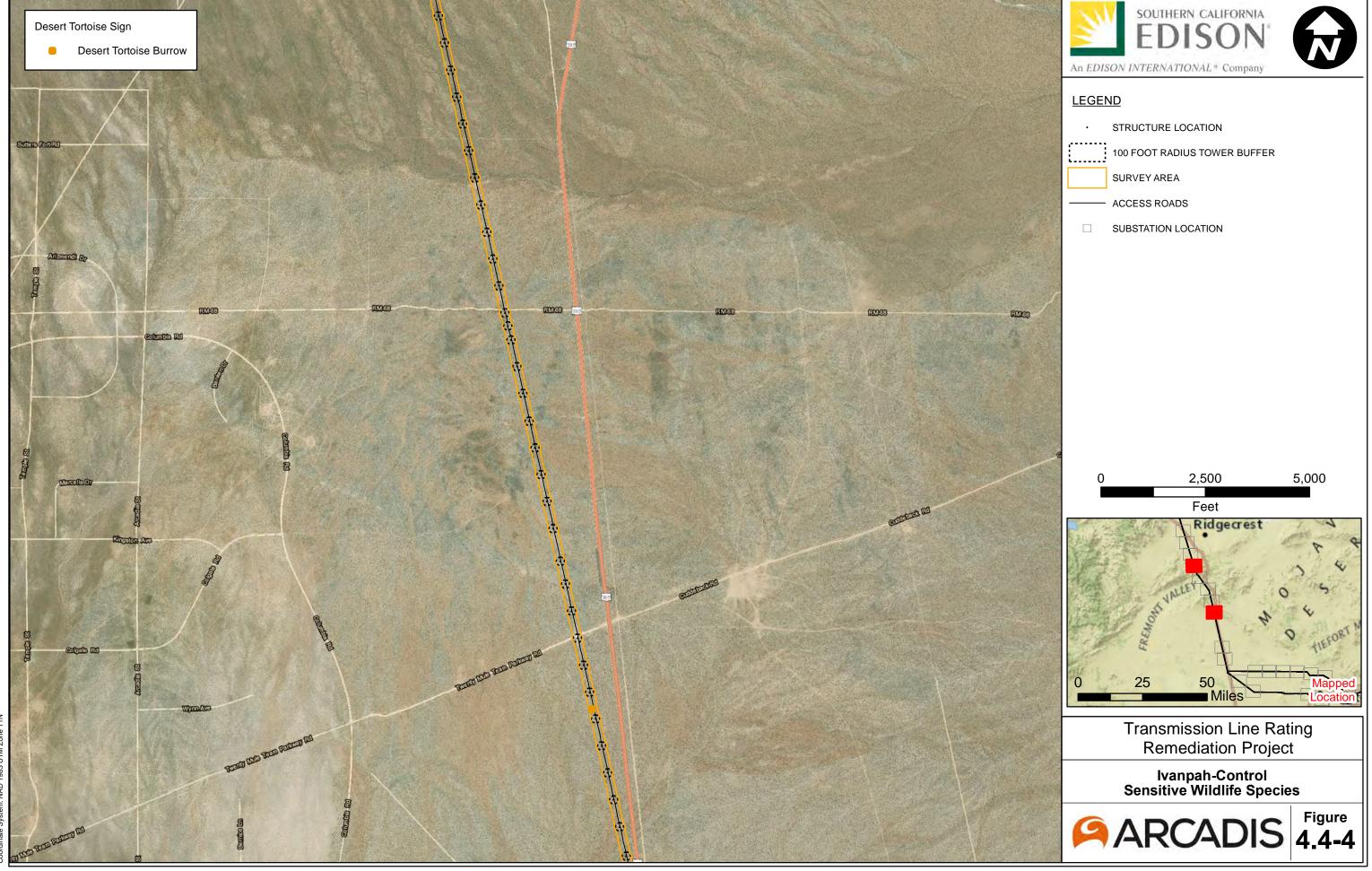


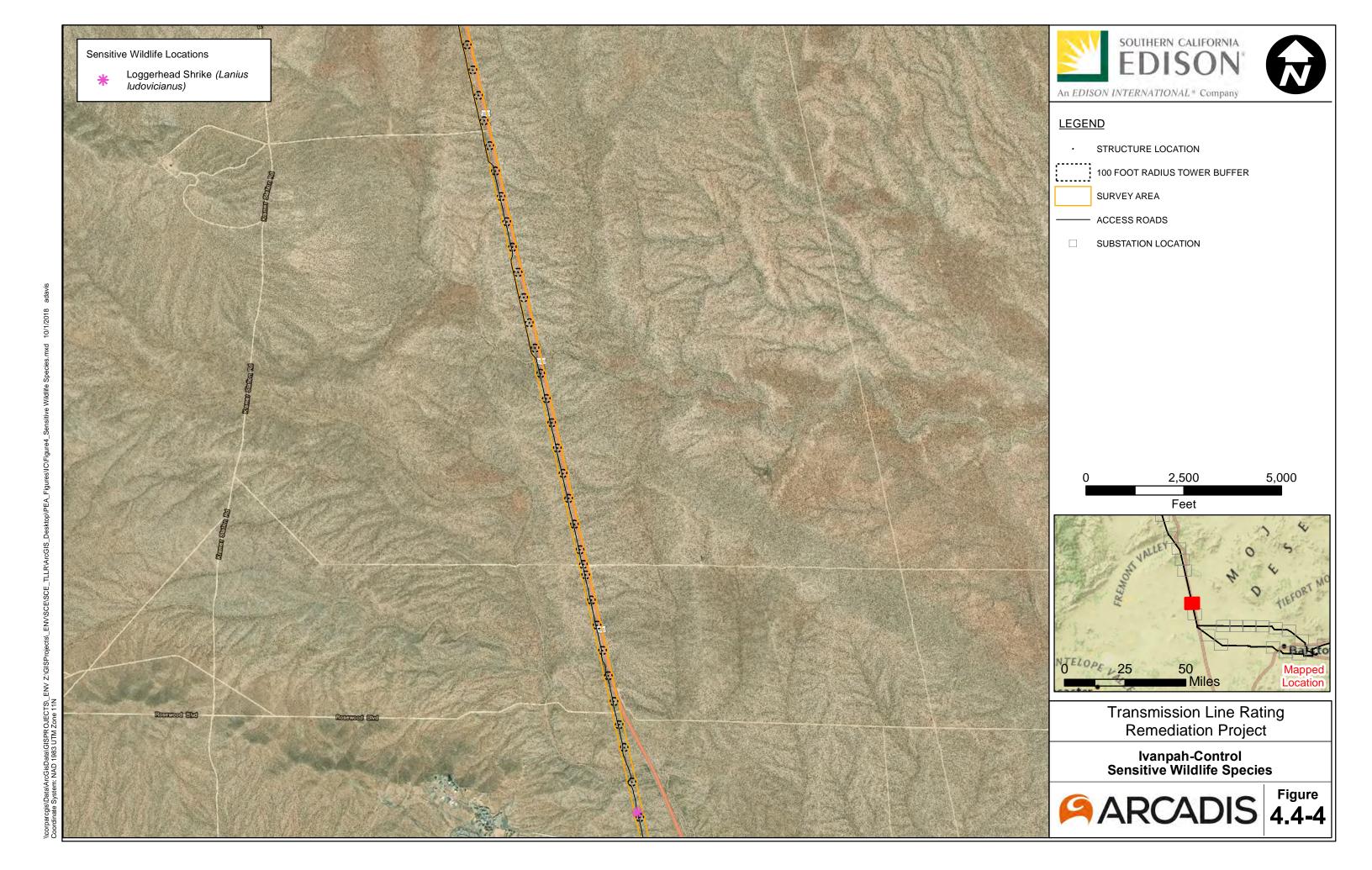


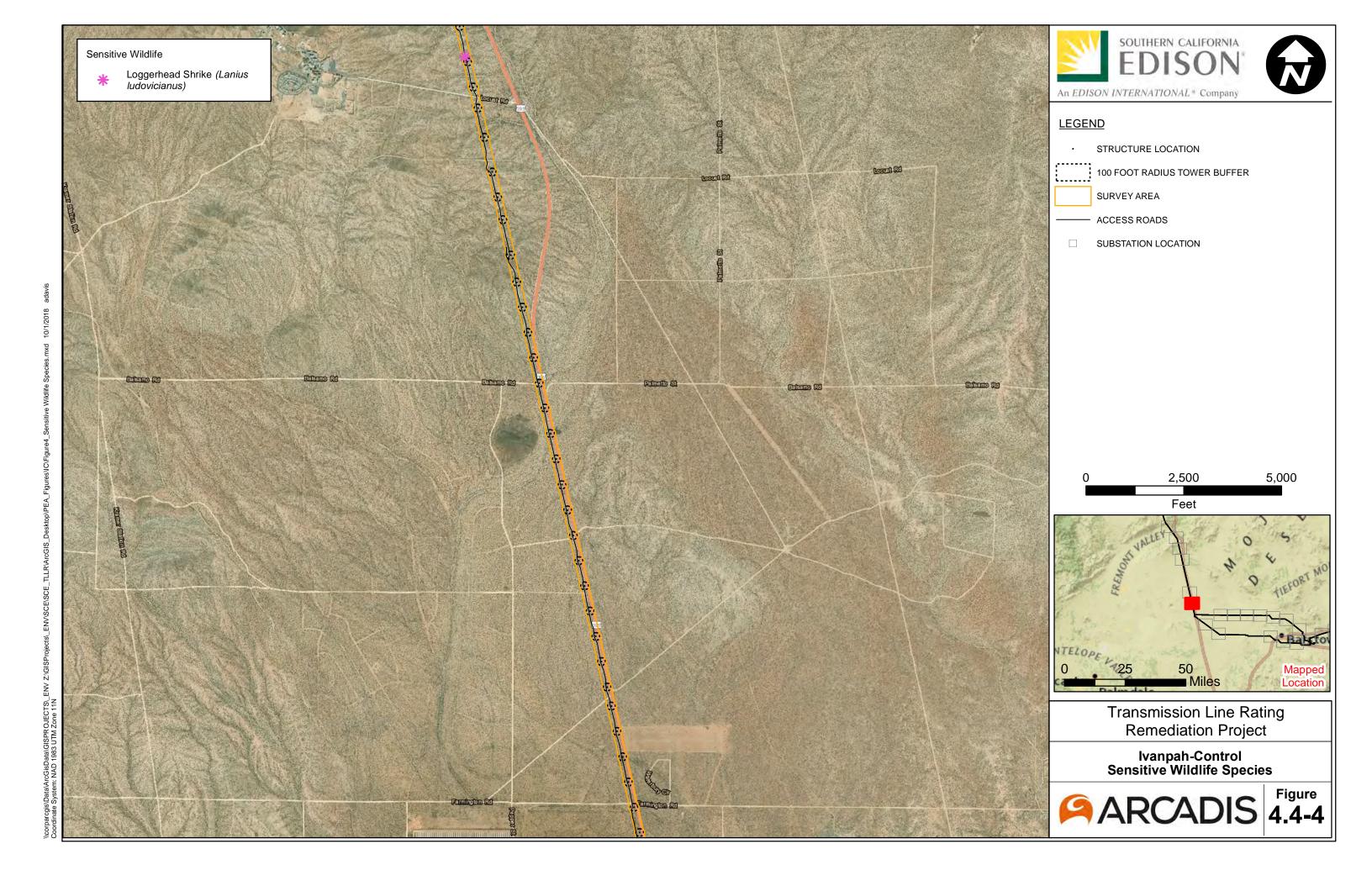


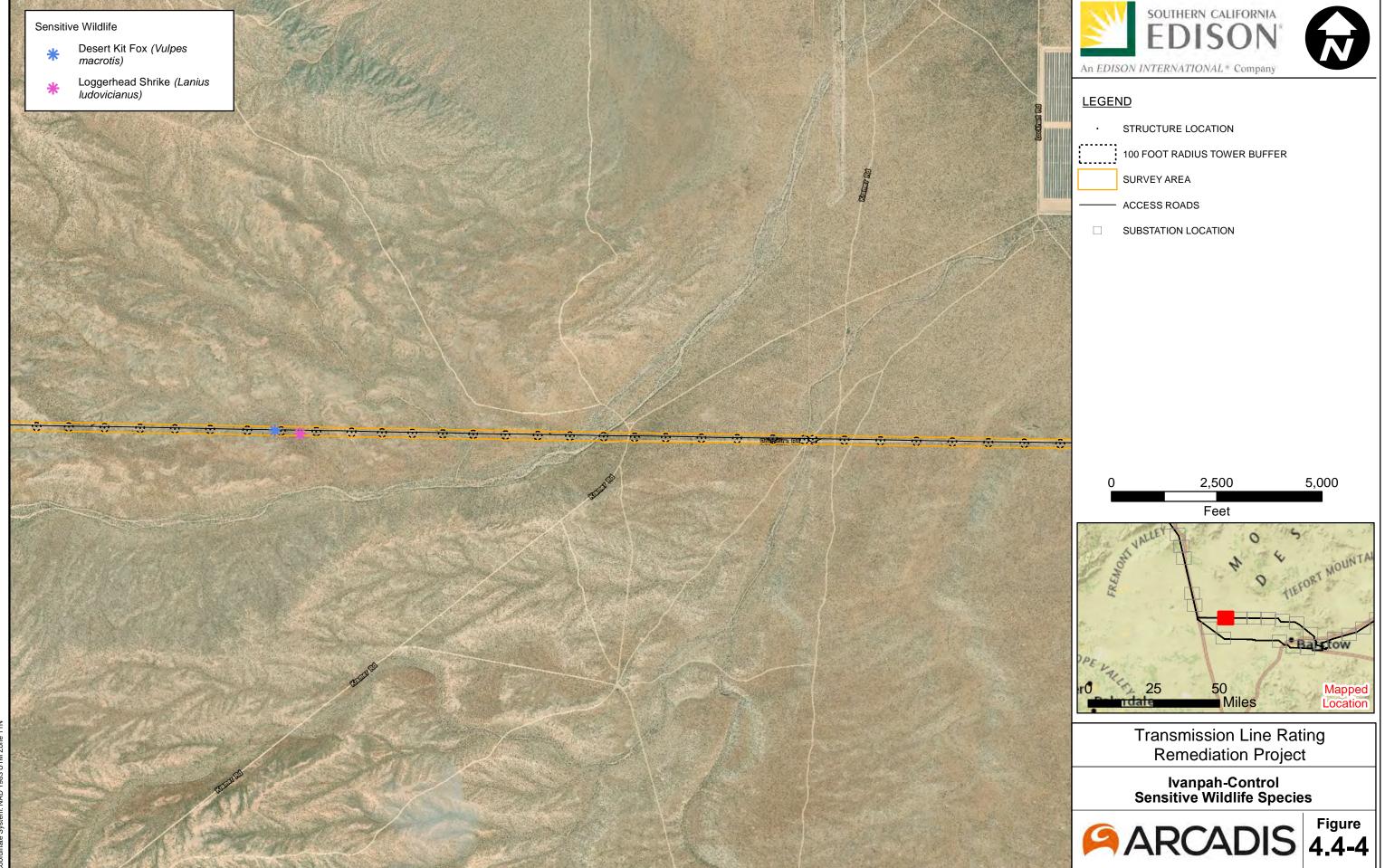


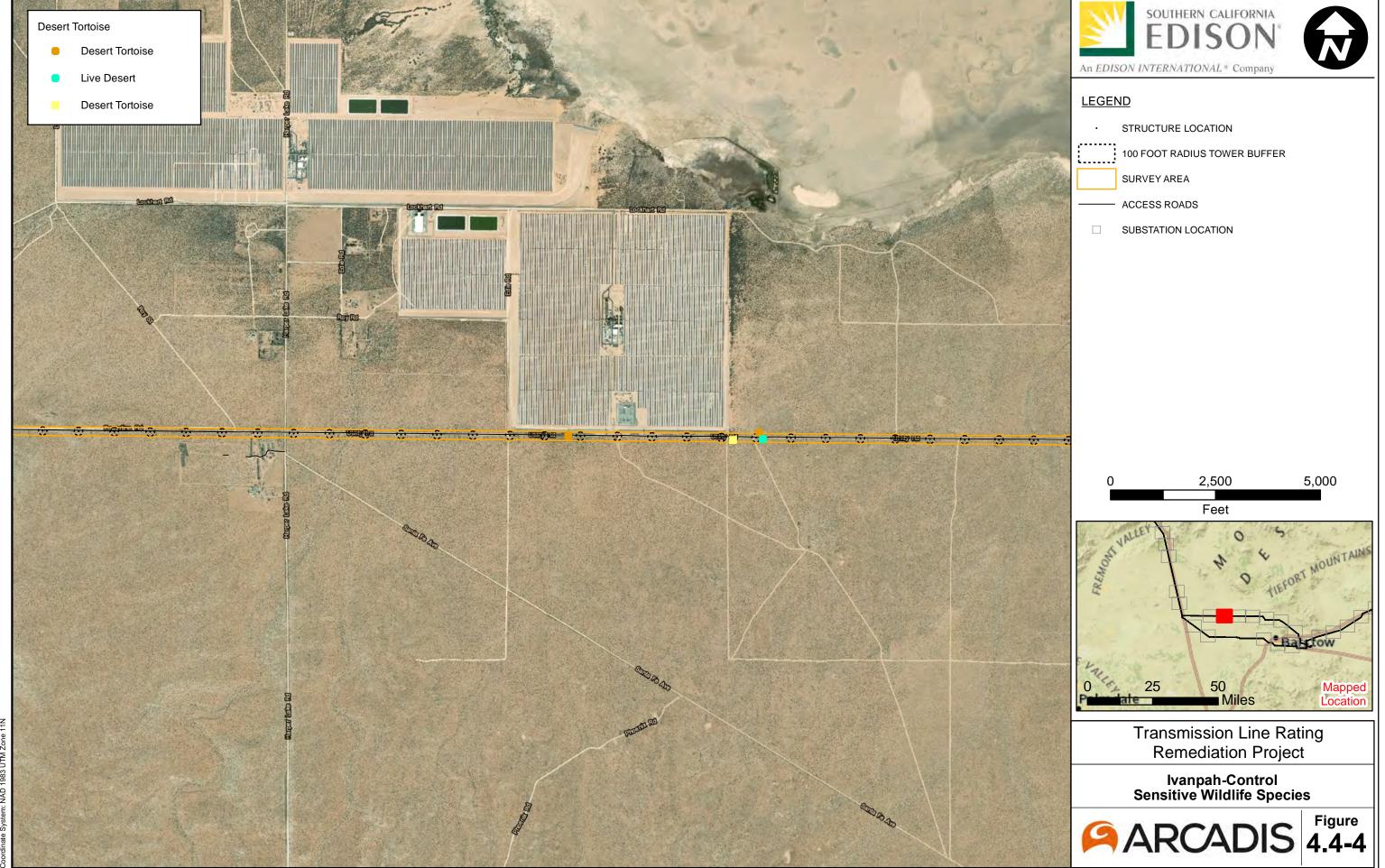


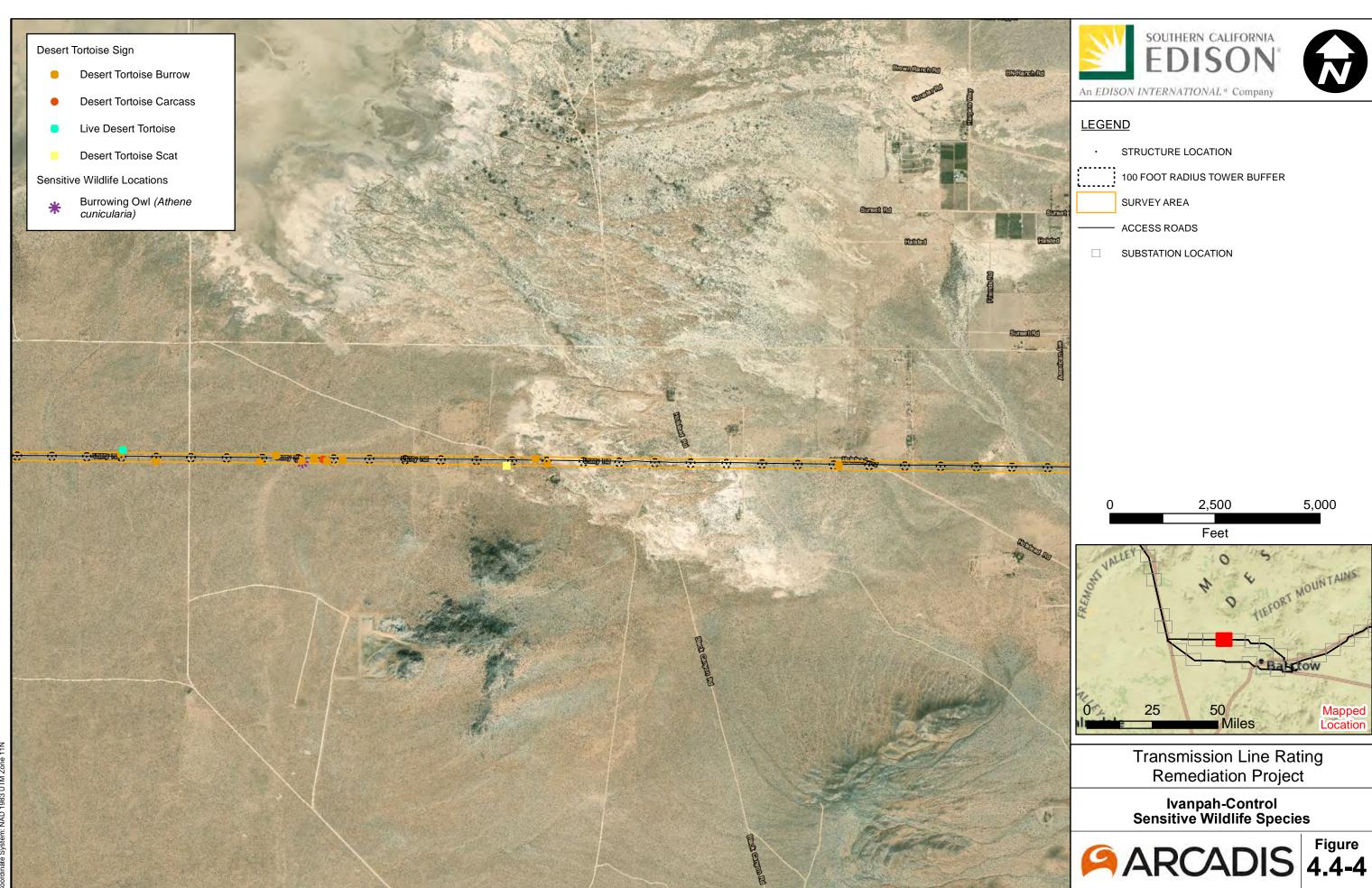




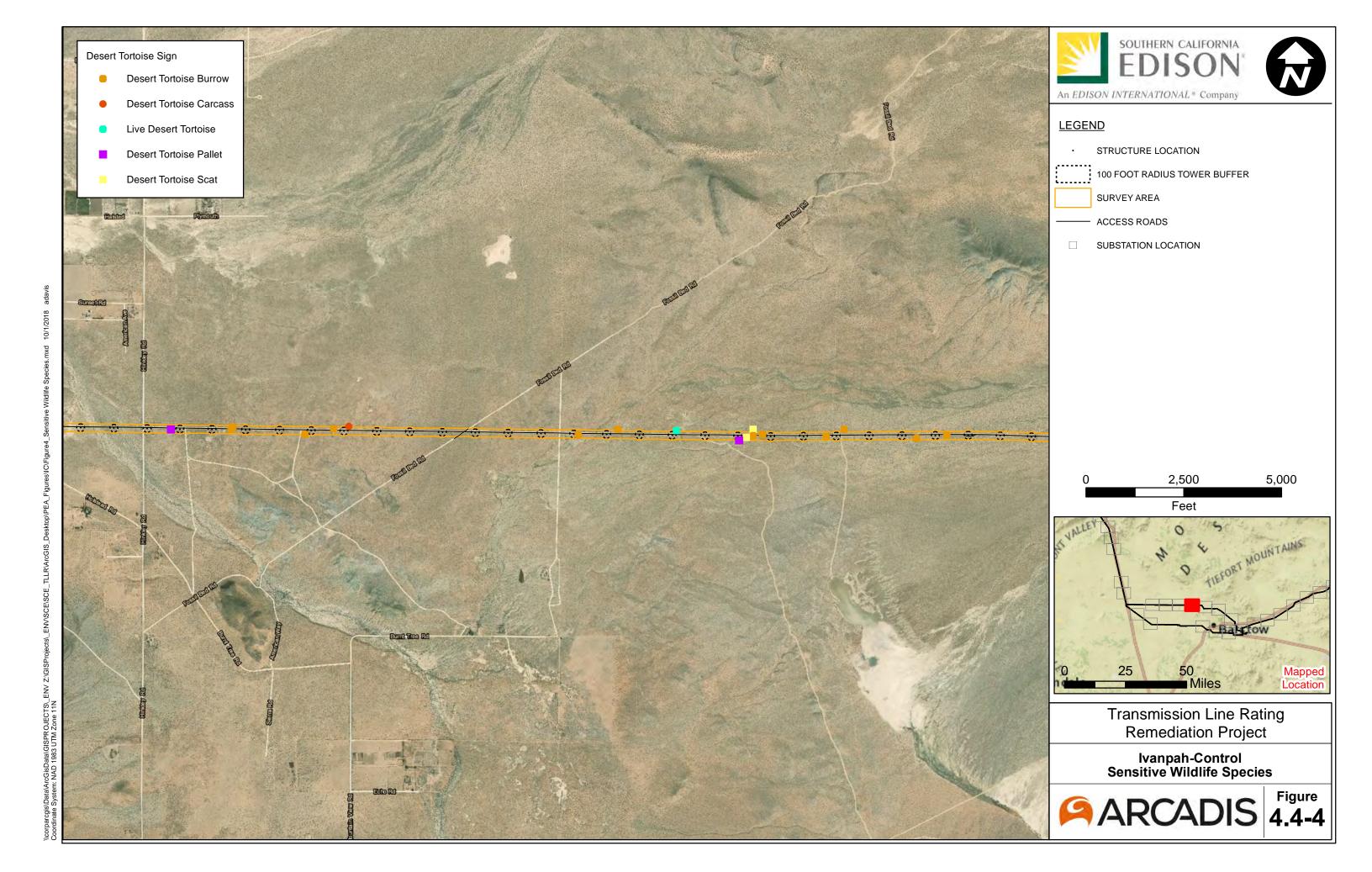


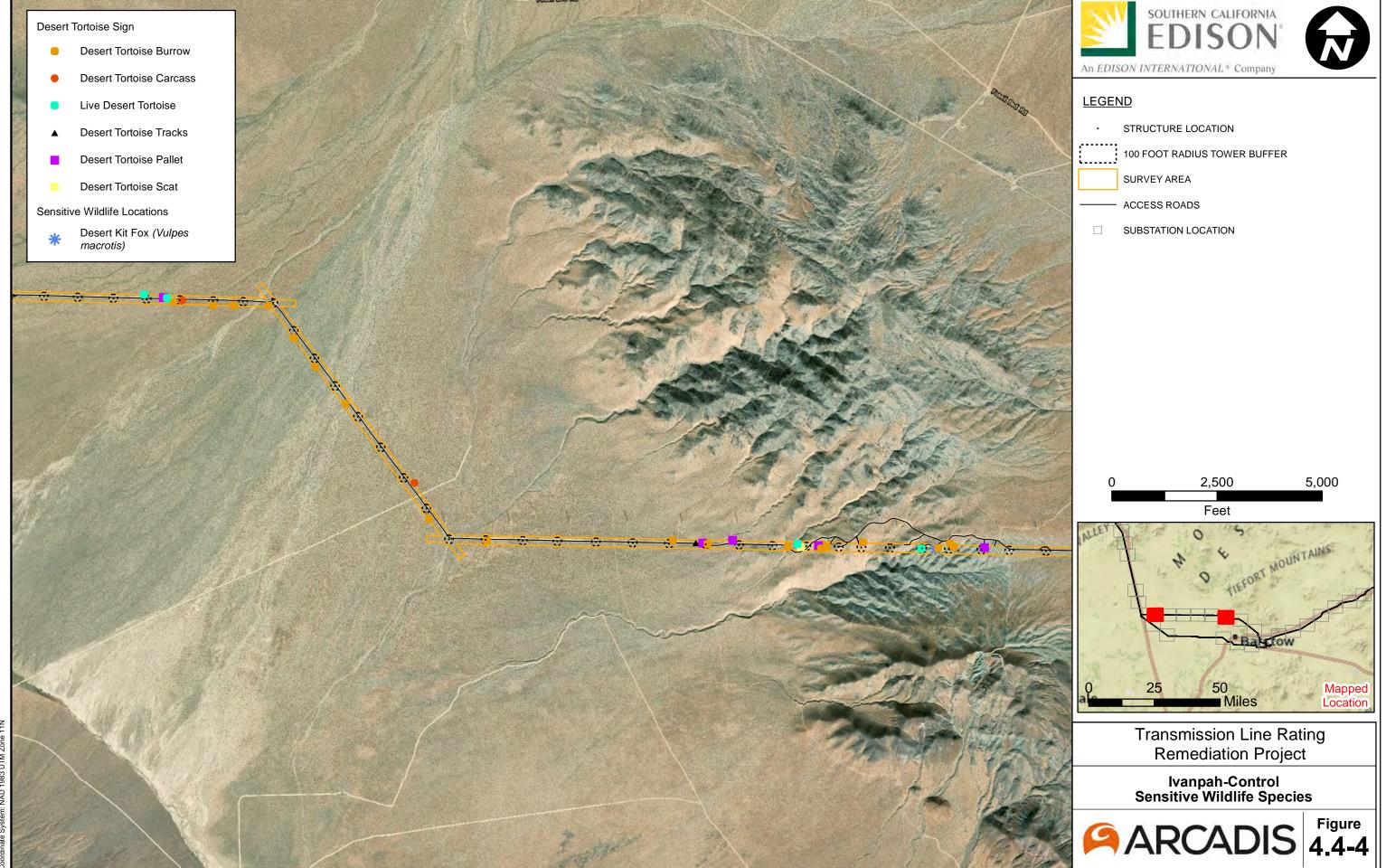


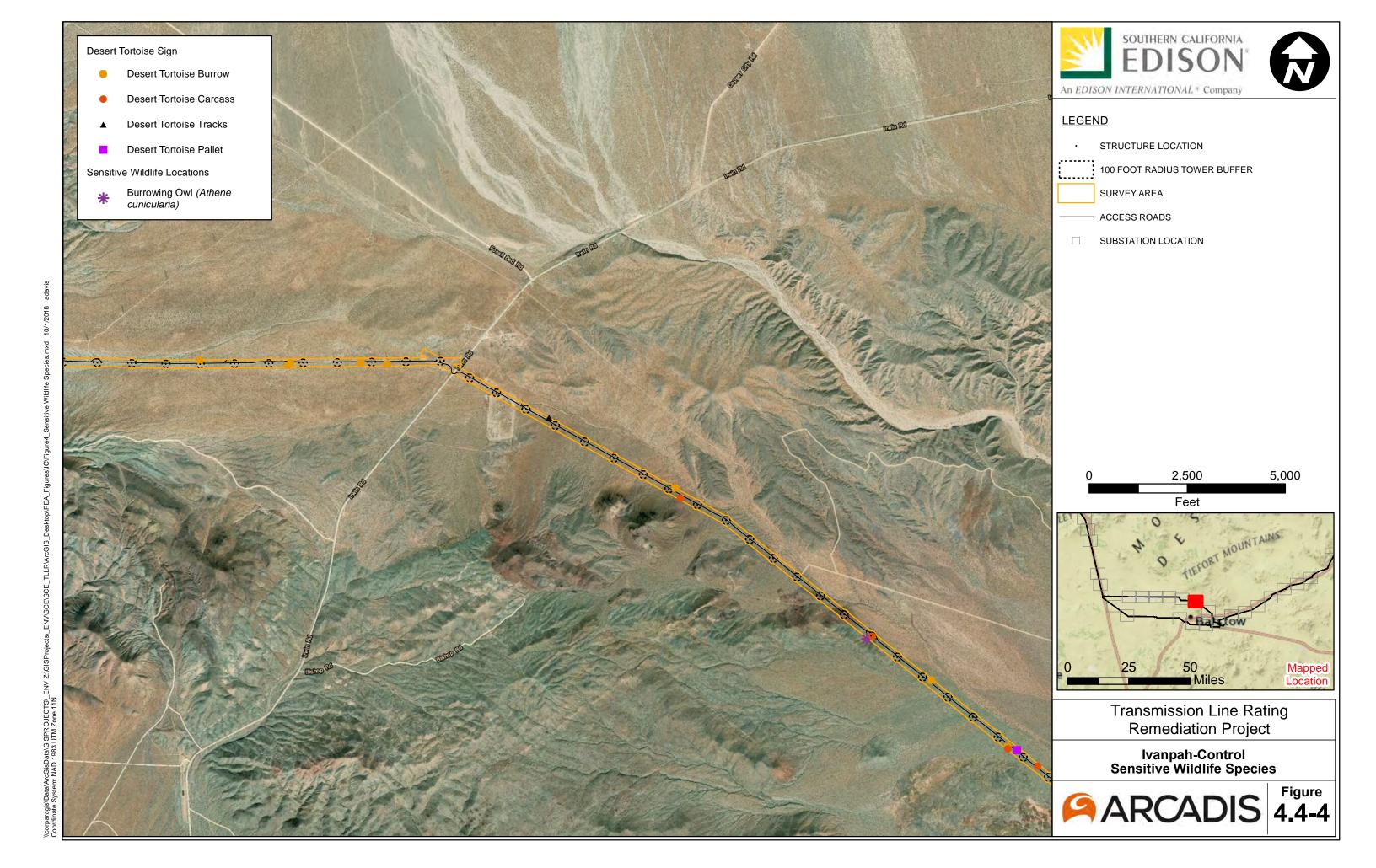


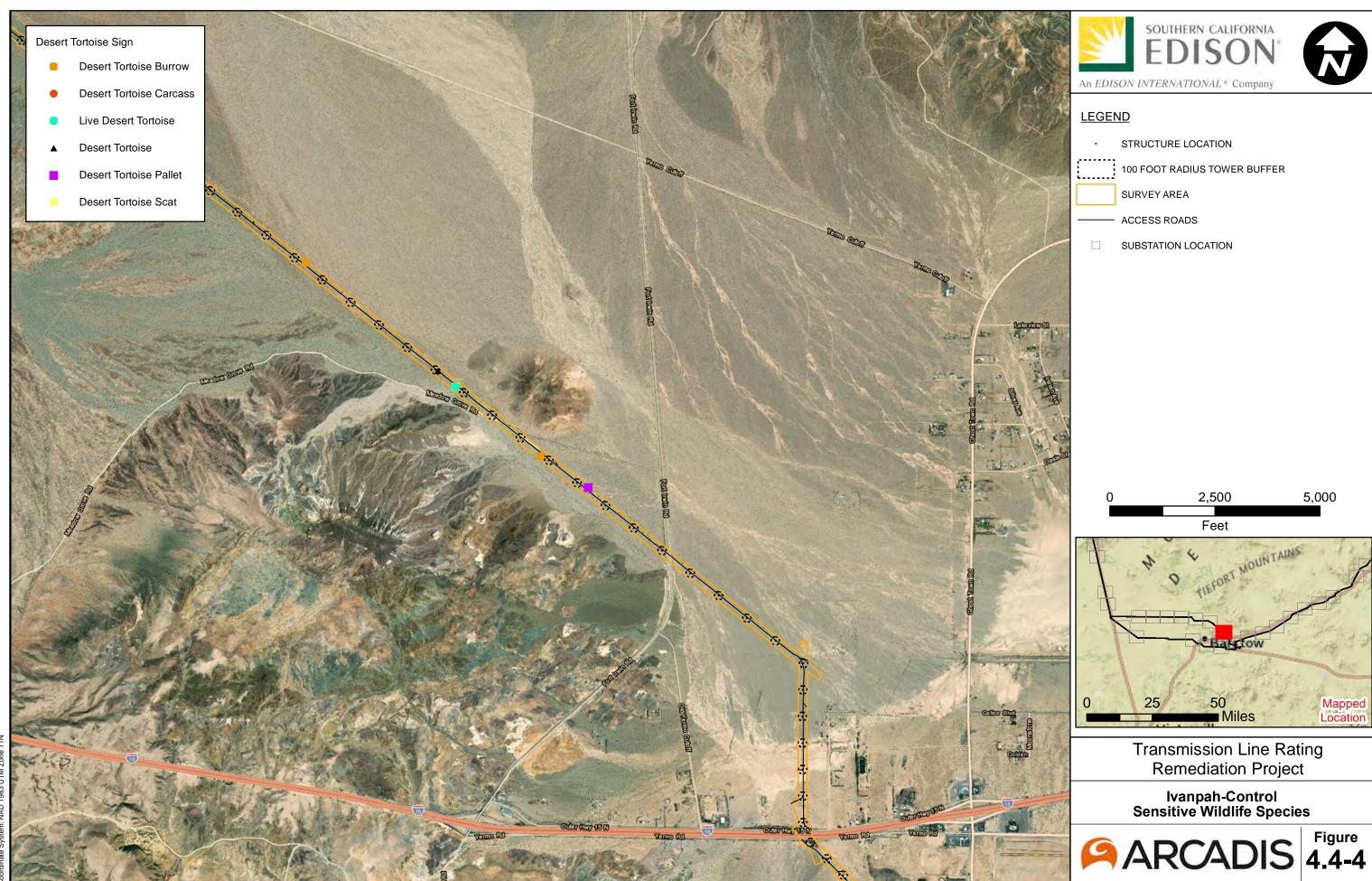


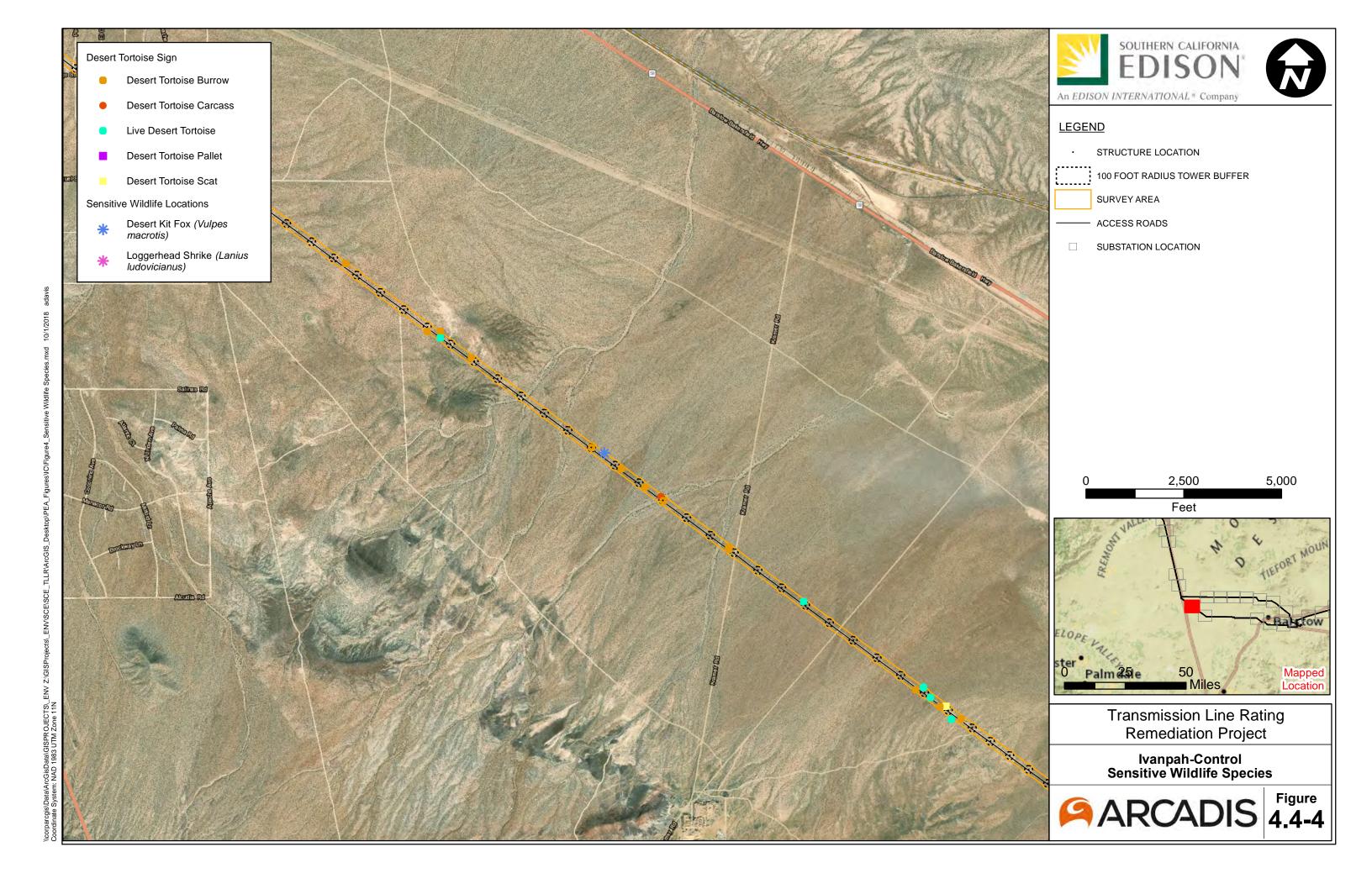
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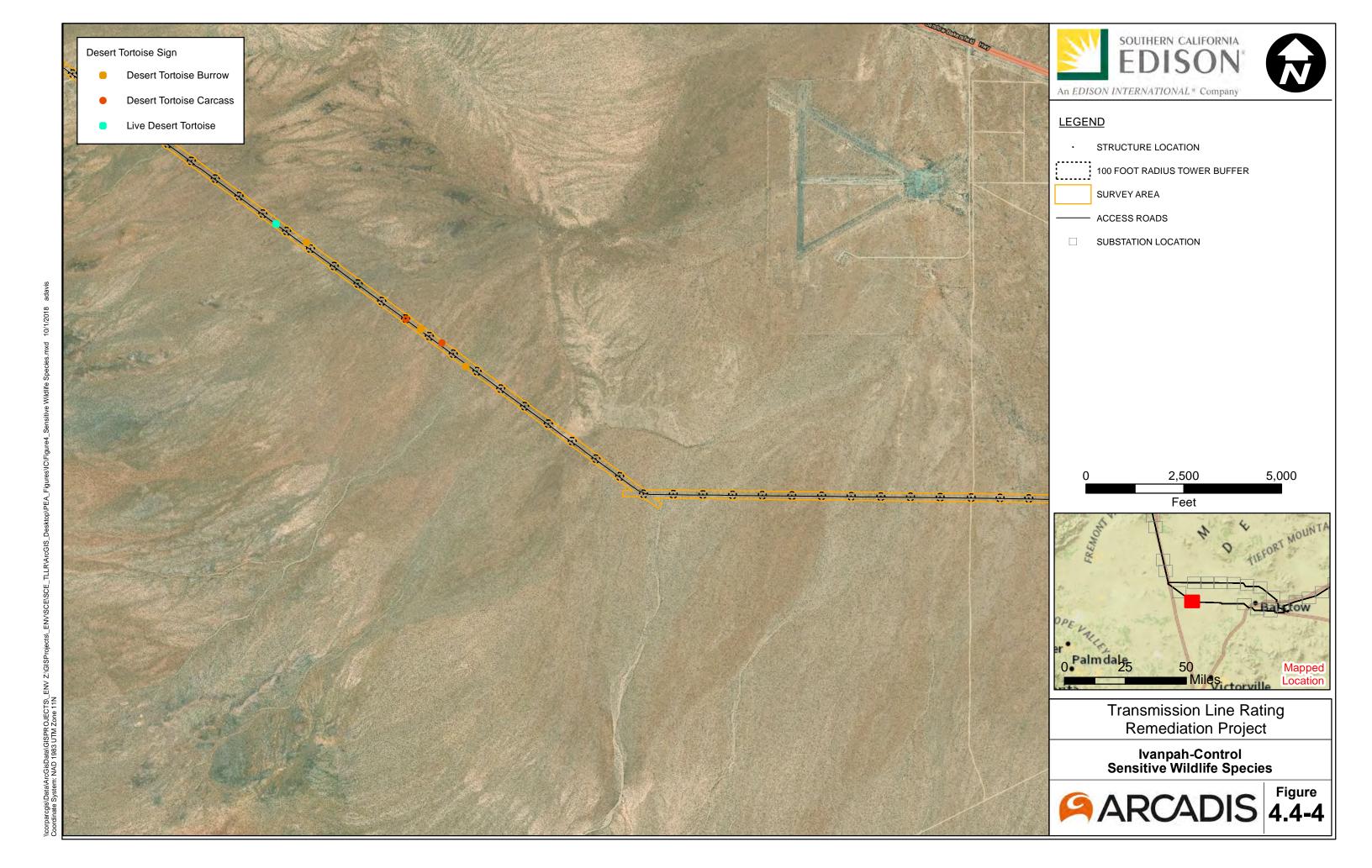
















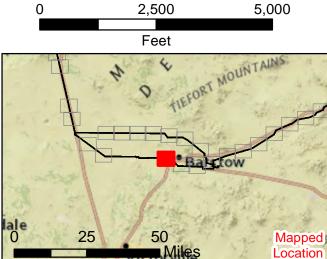
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

ACCESS ROADS

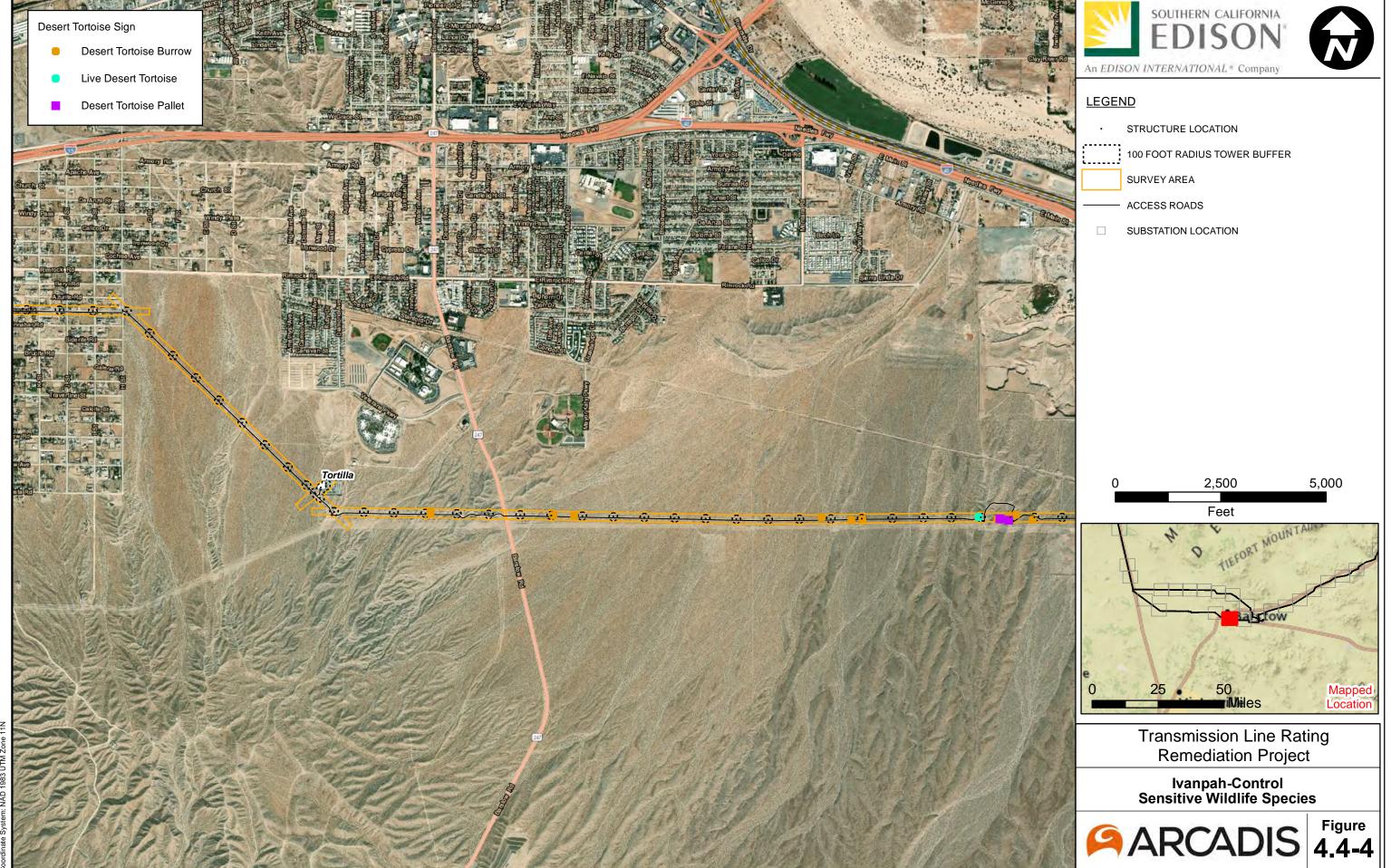
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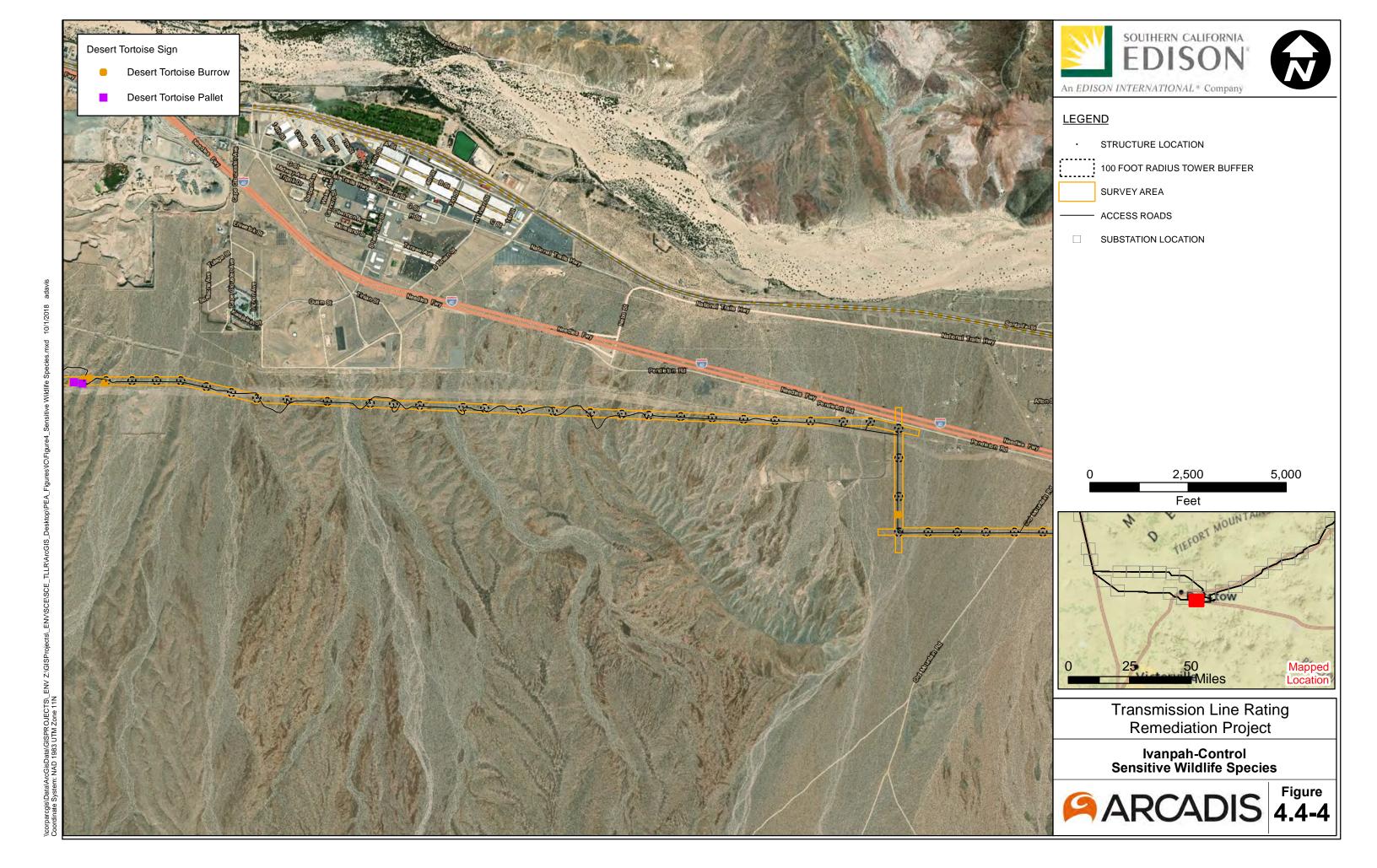


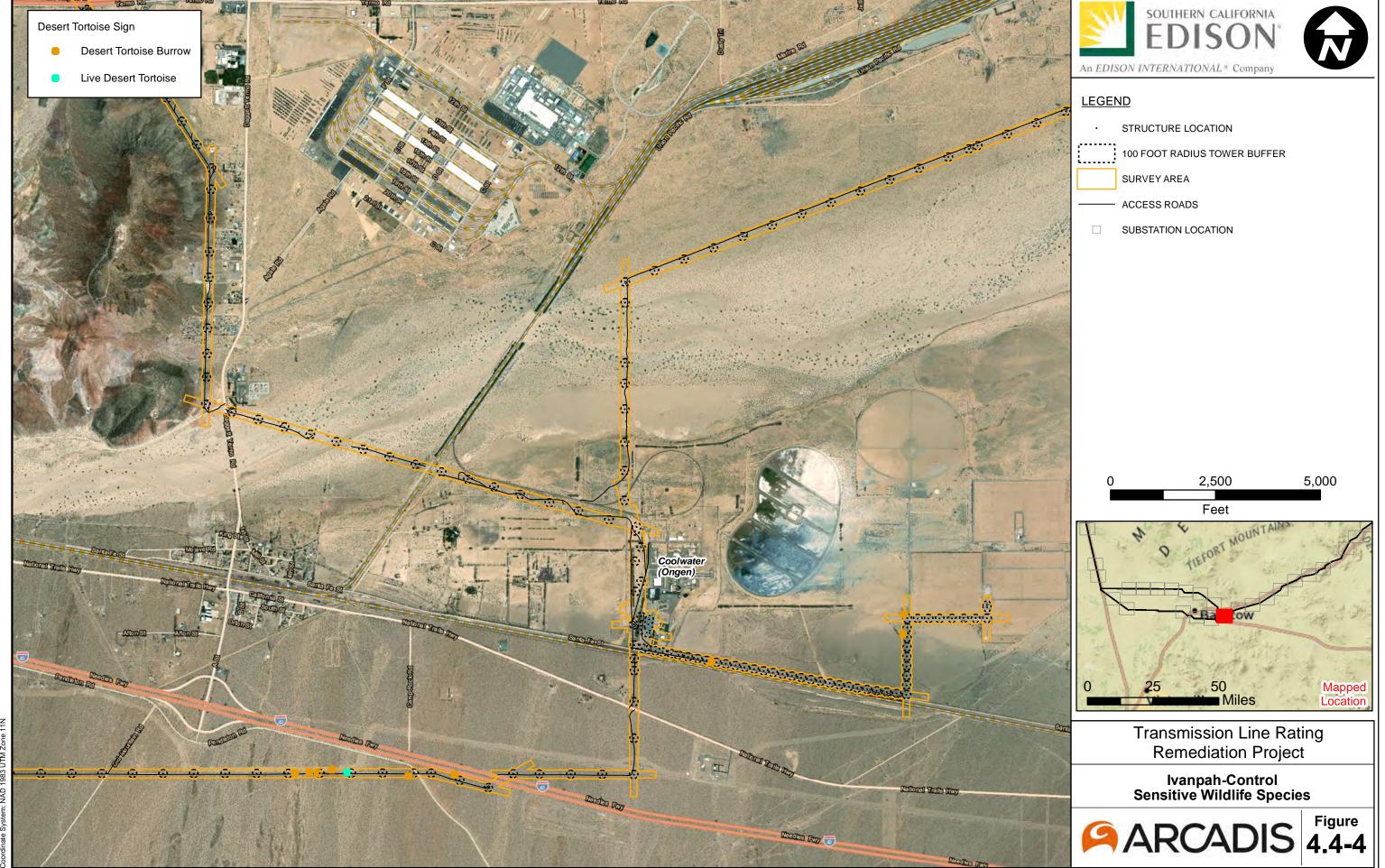
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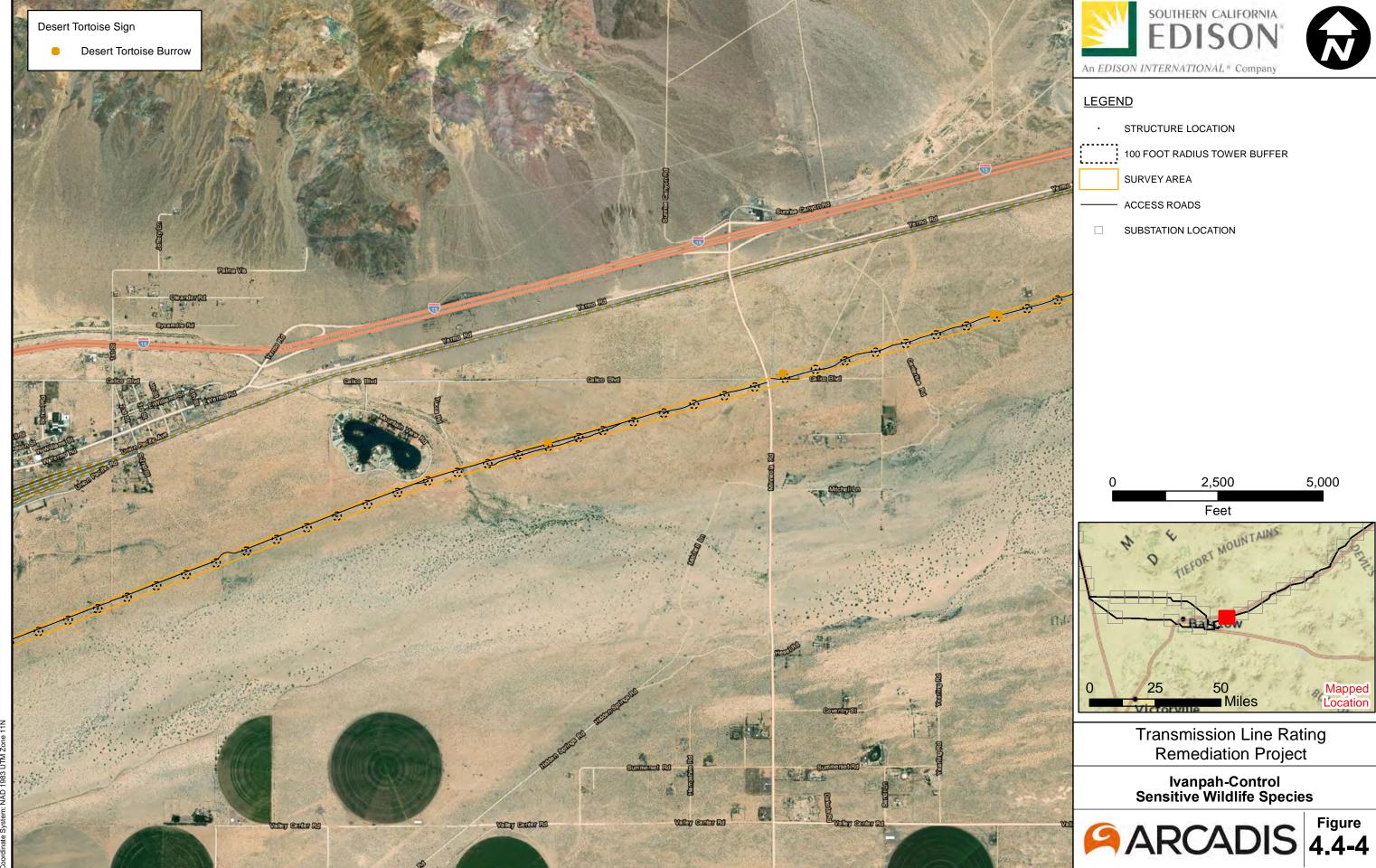
Ivanpah-Control Sensitive Wildlife Species





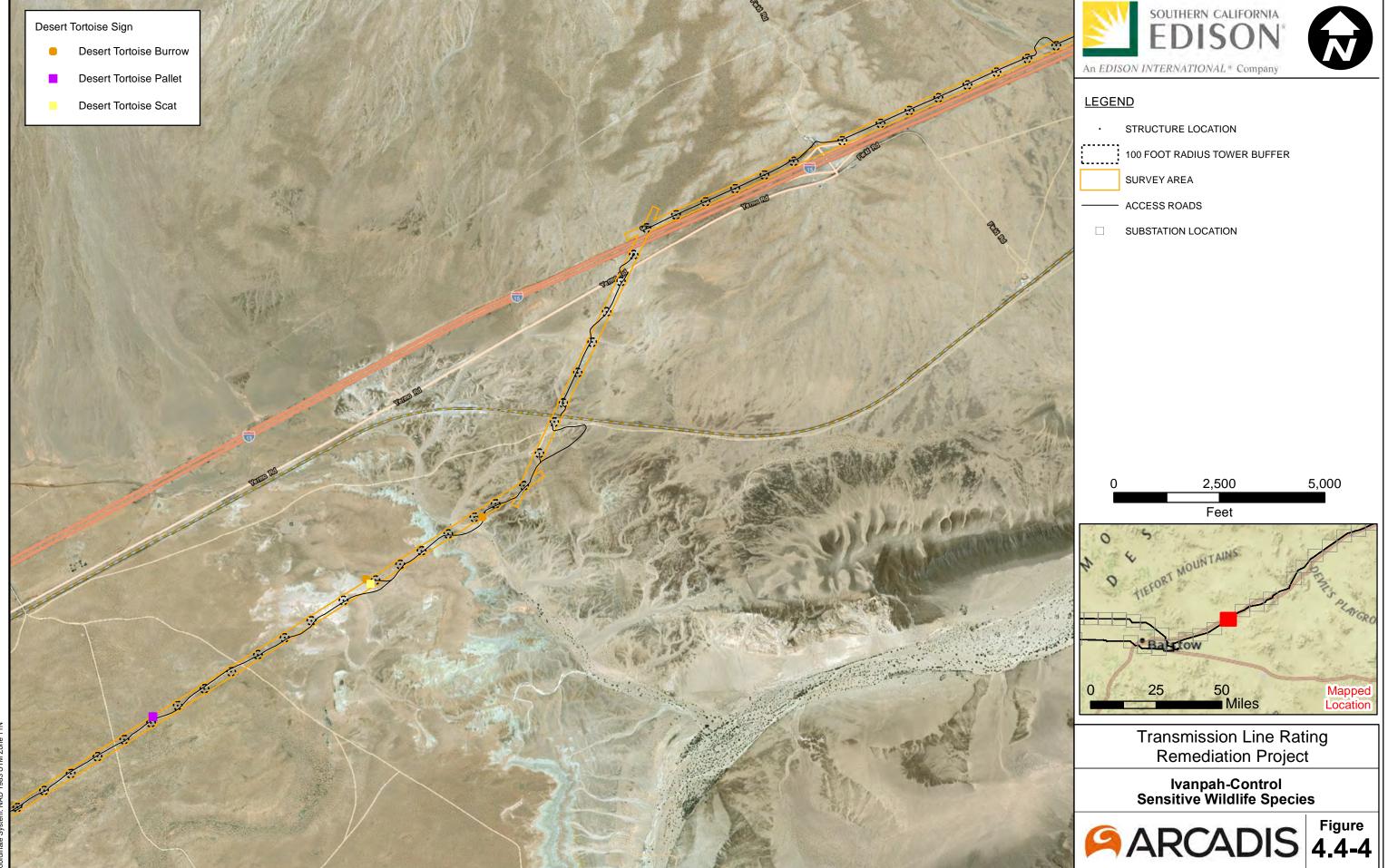


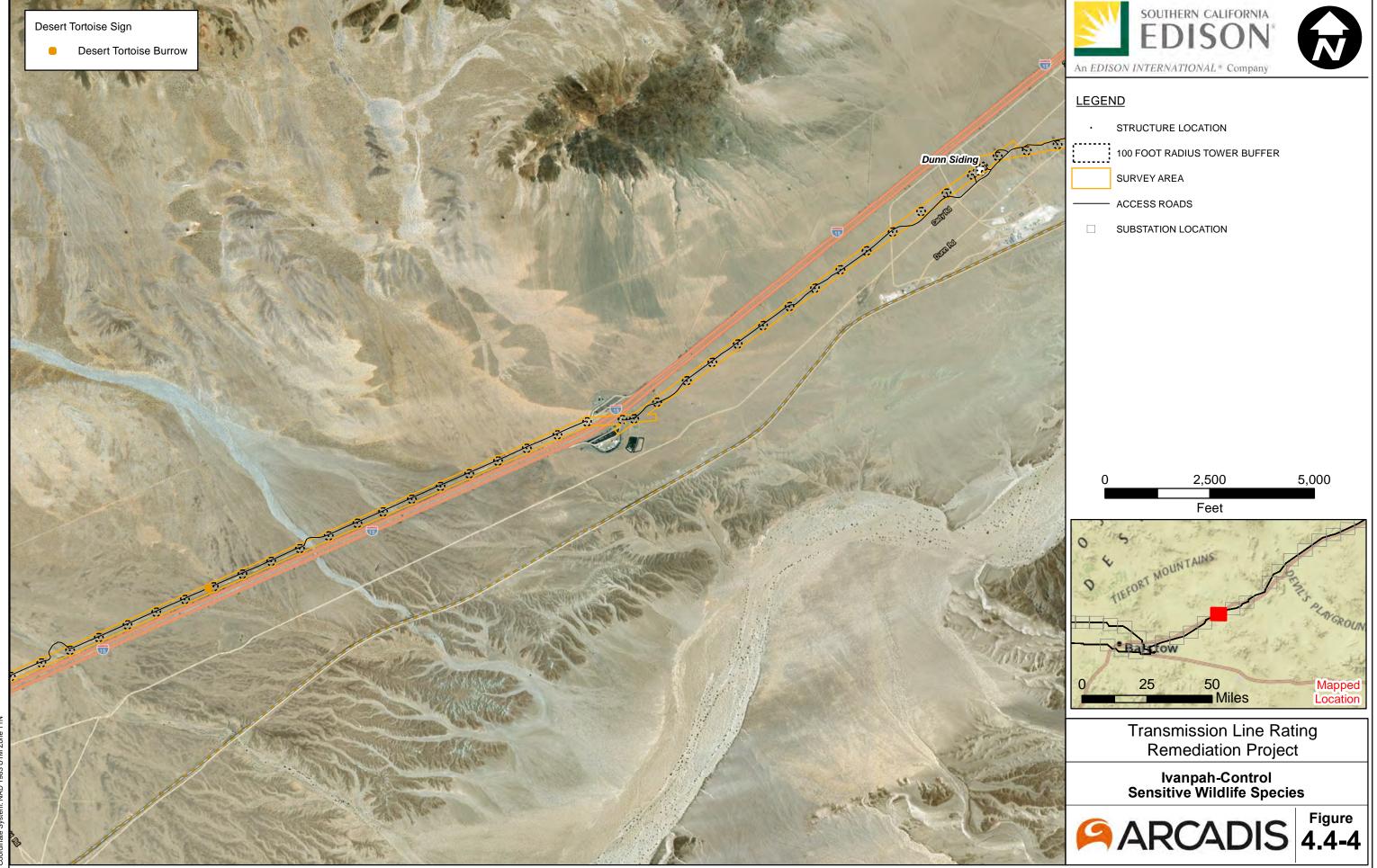


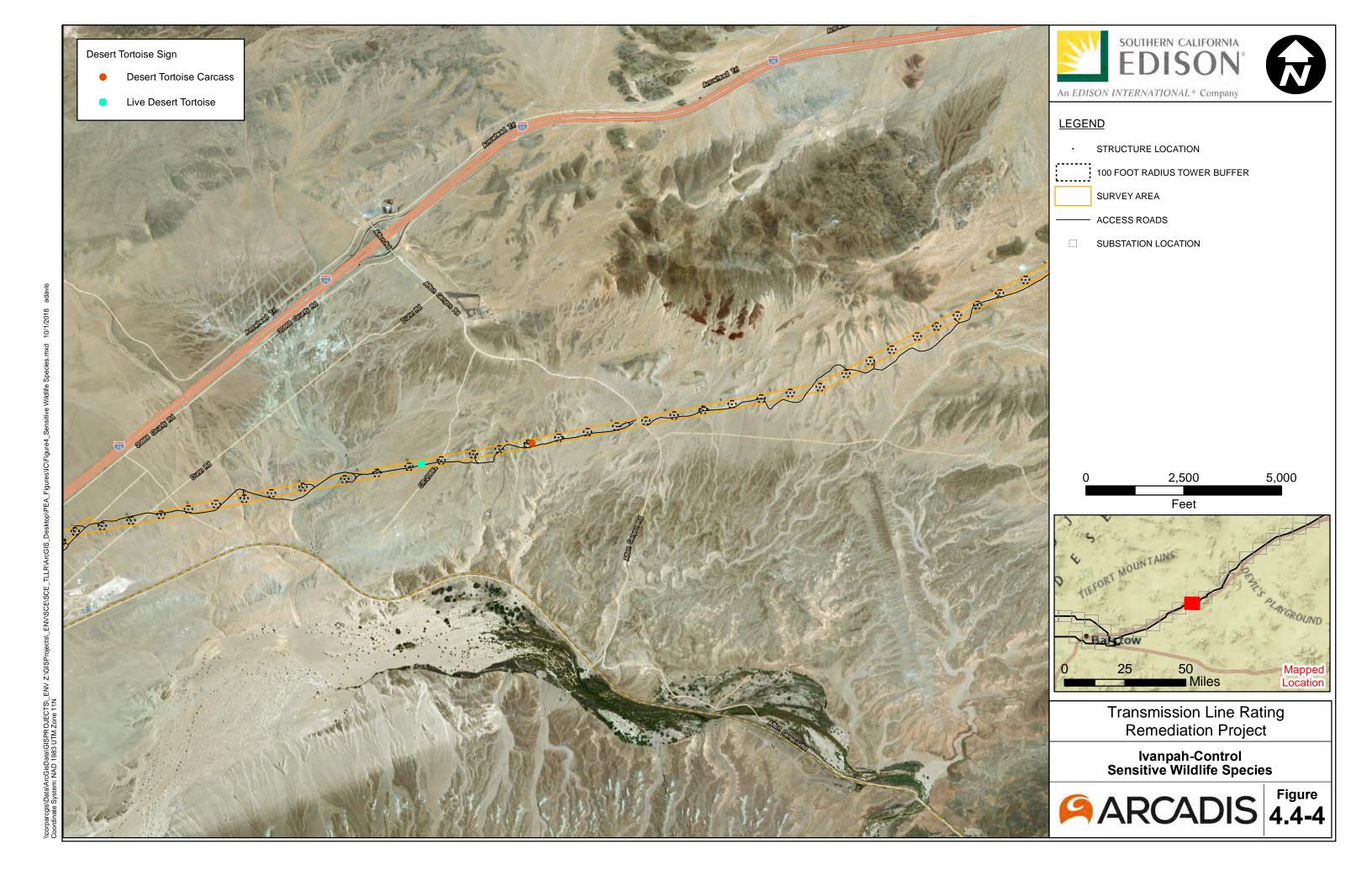


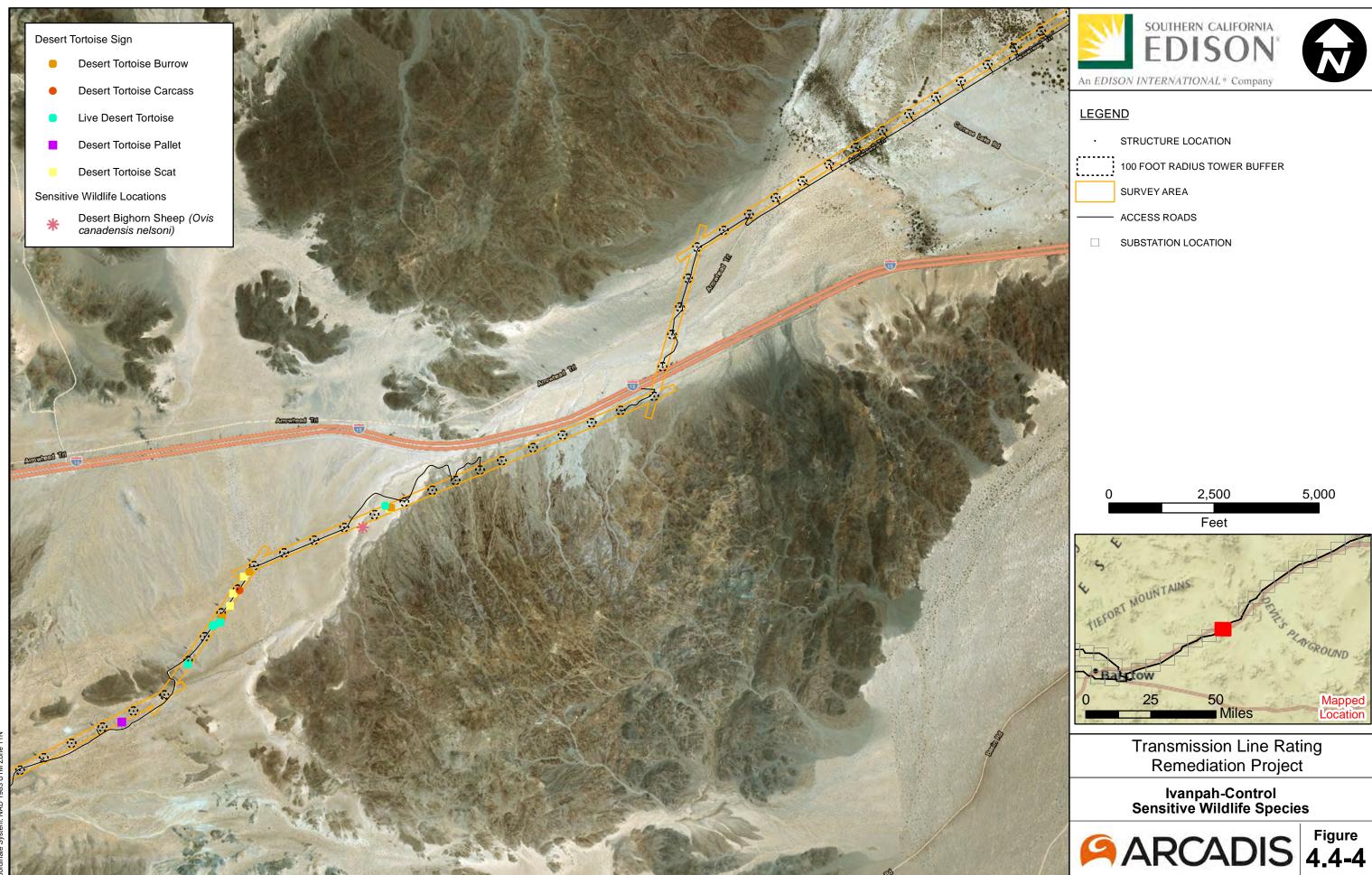


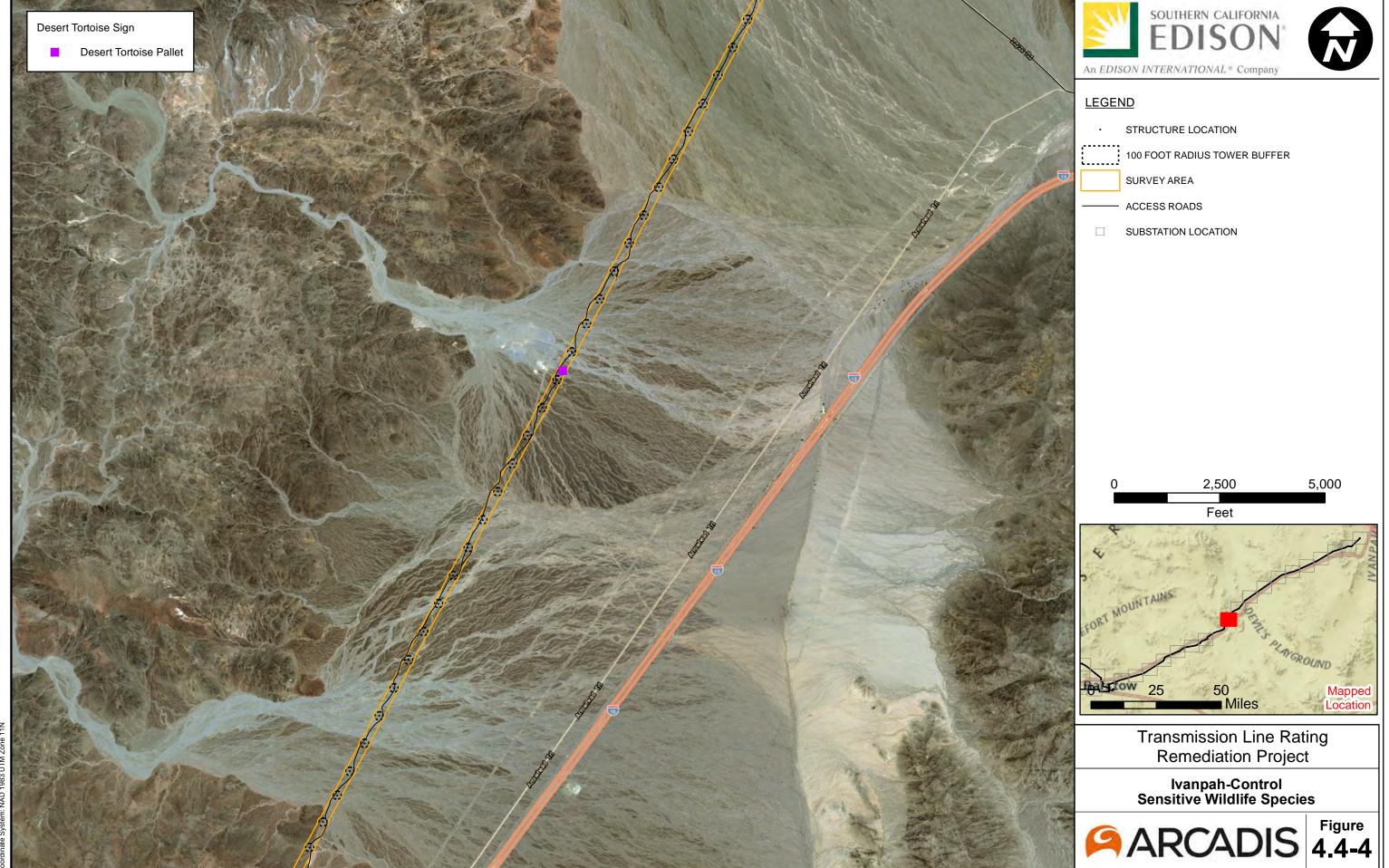


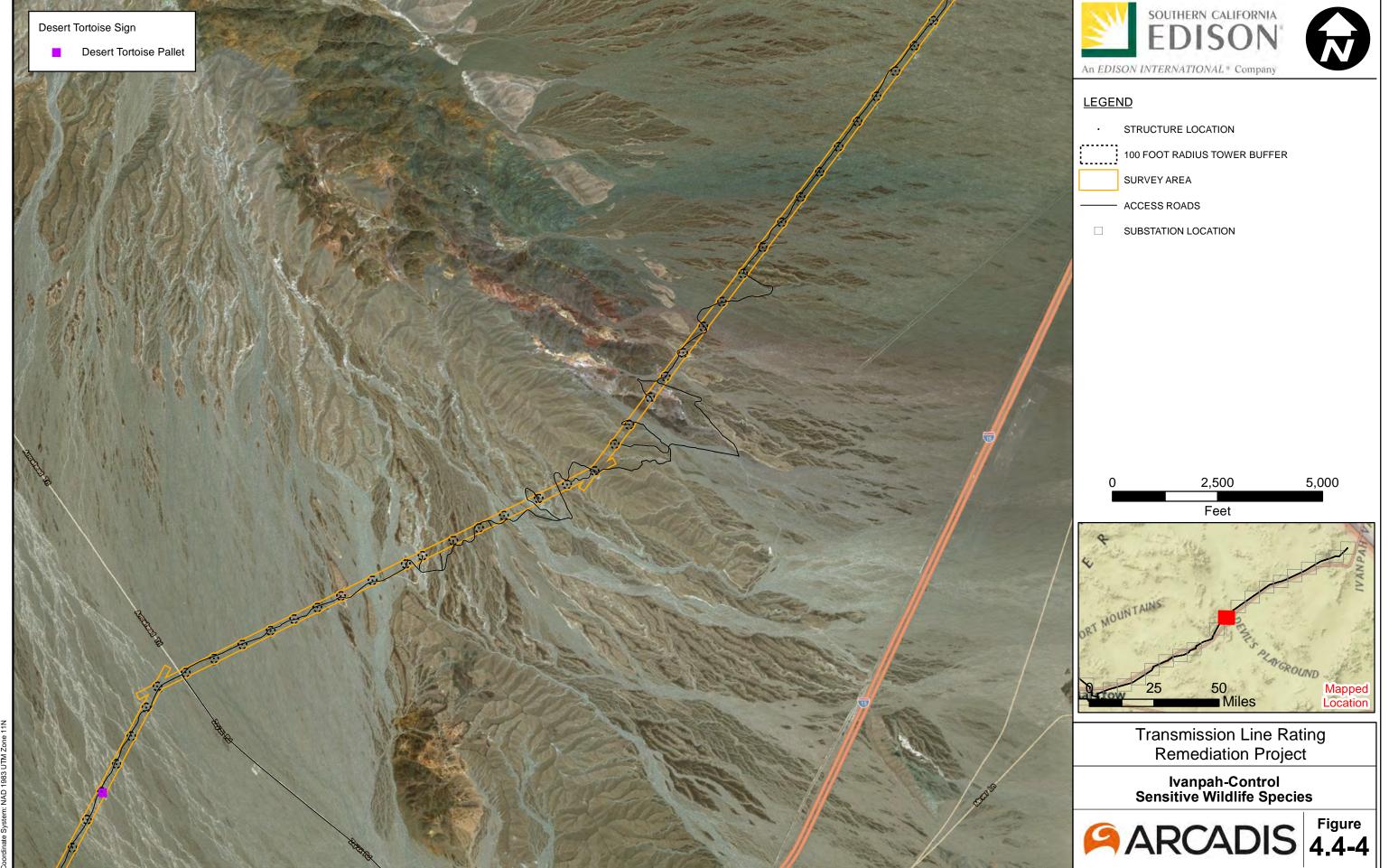




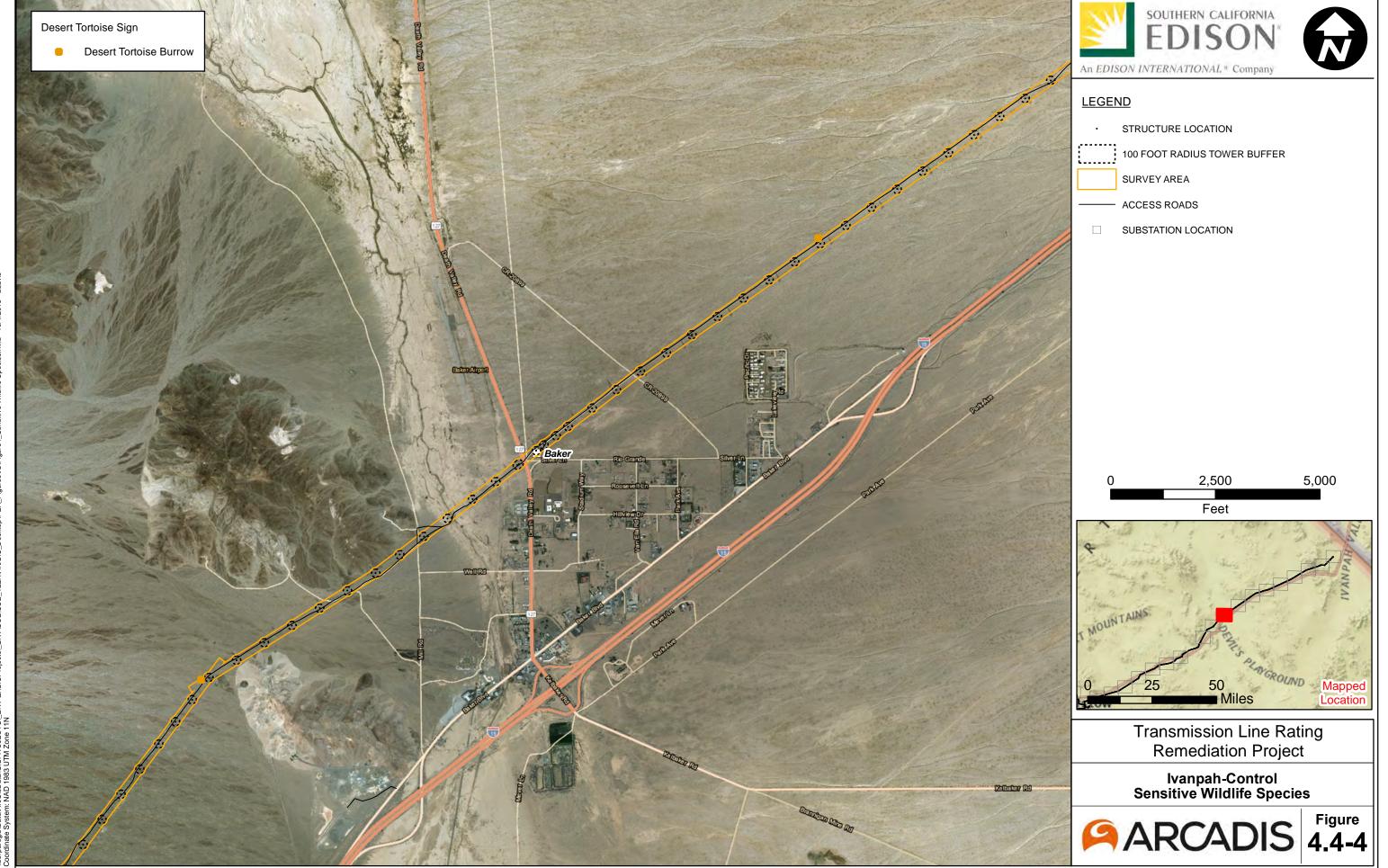


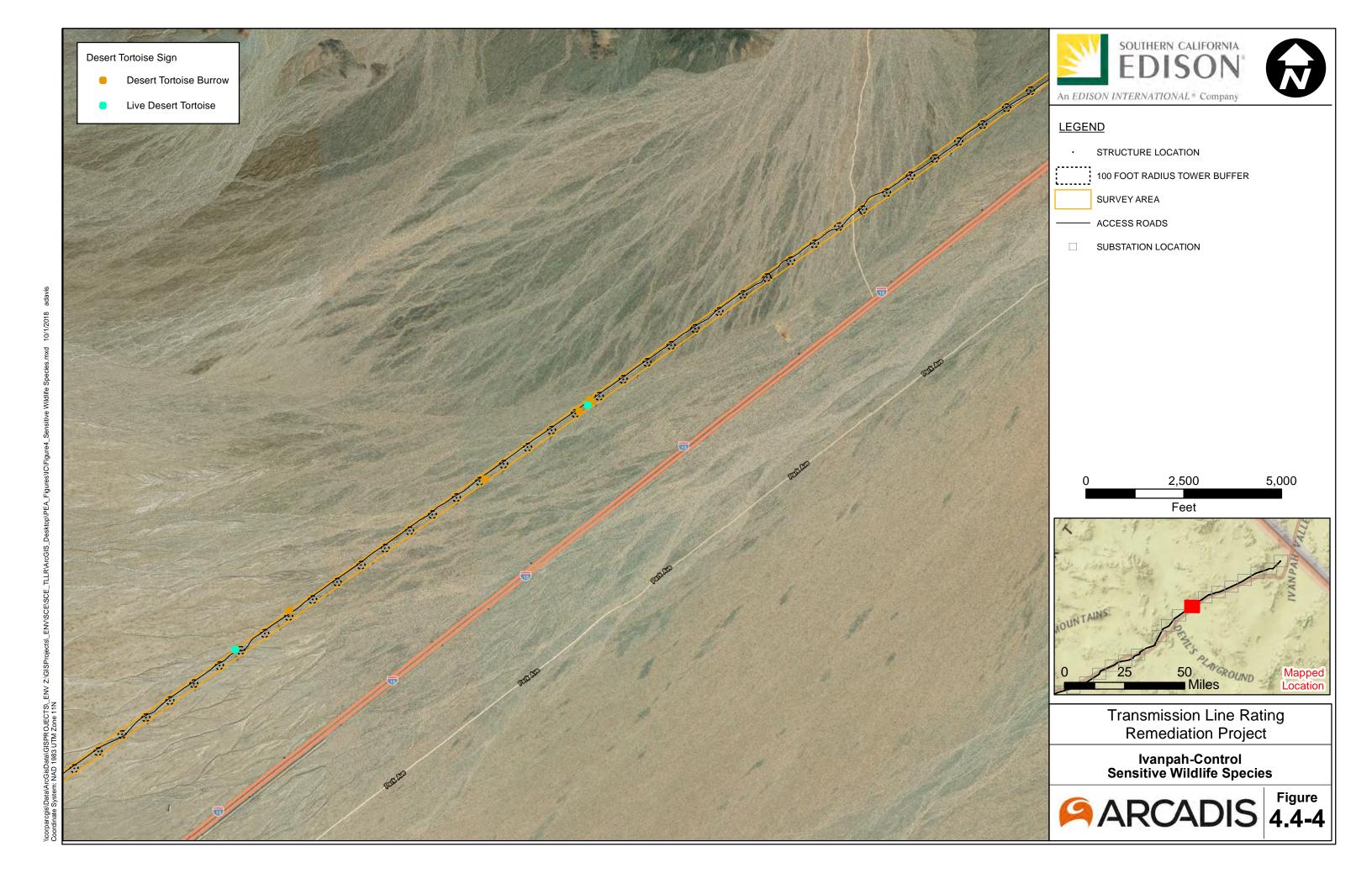


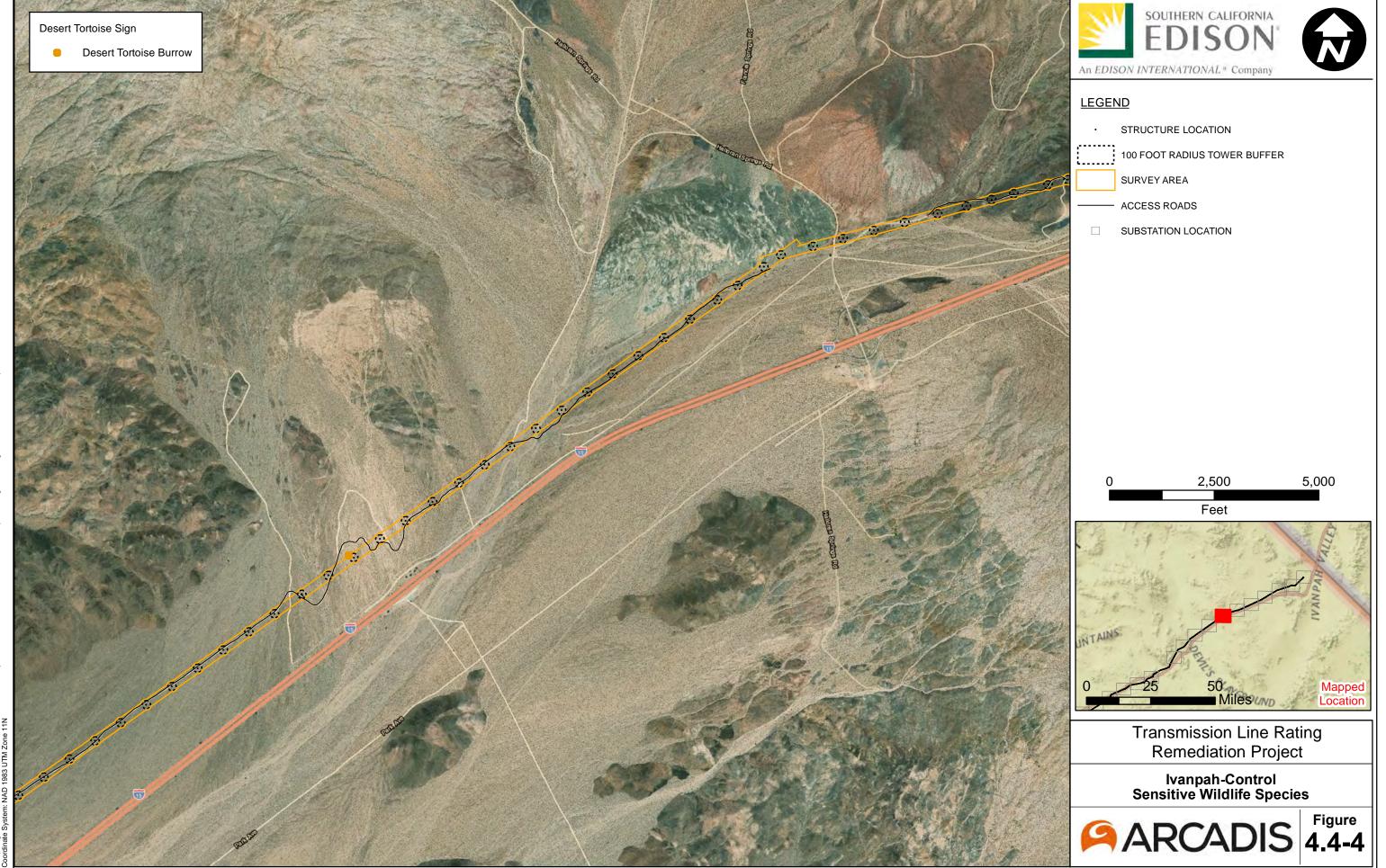


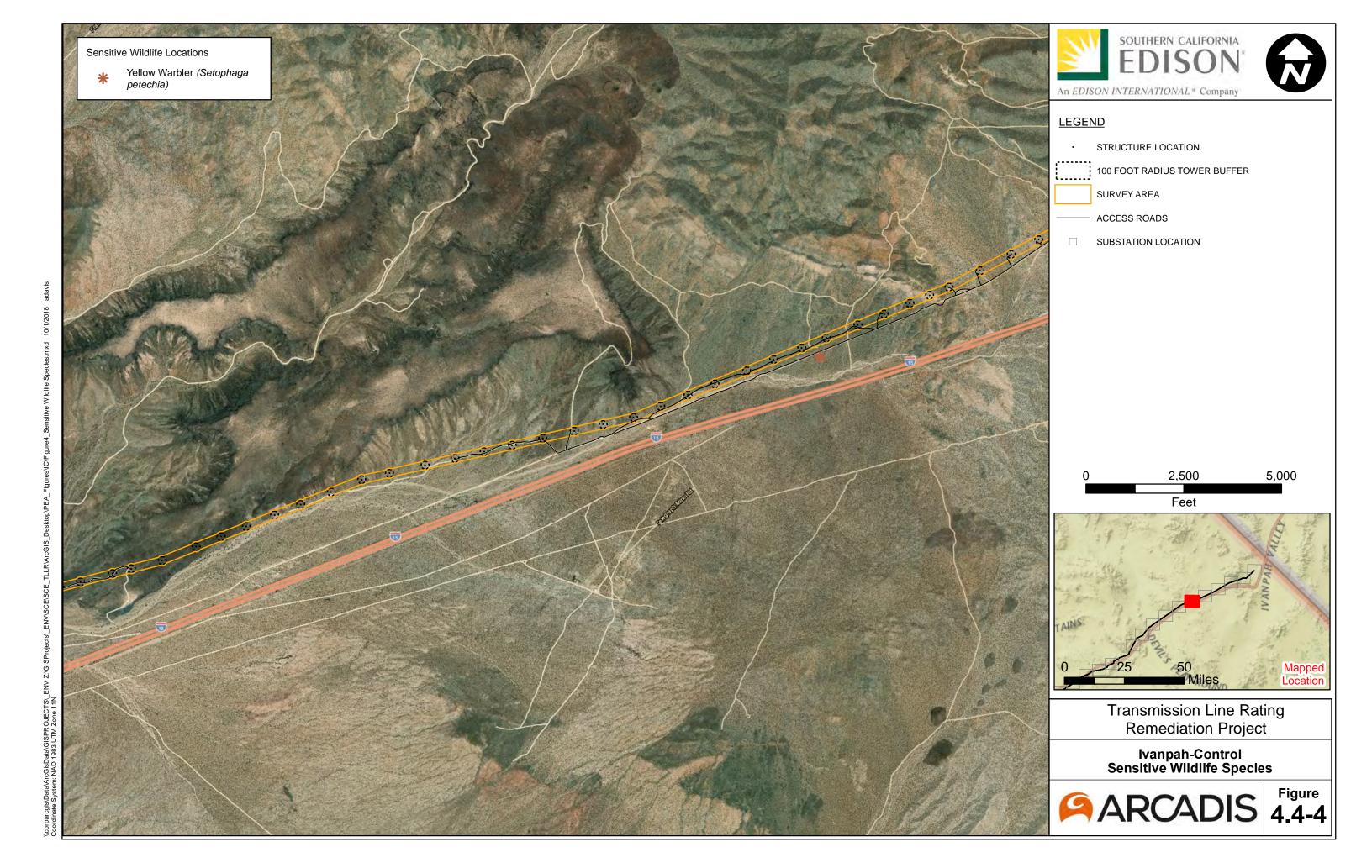


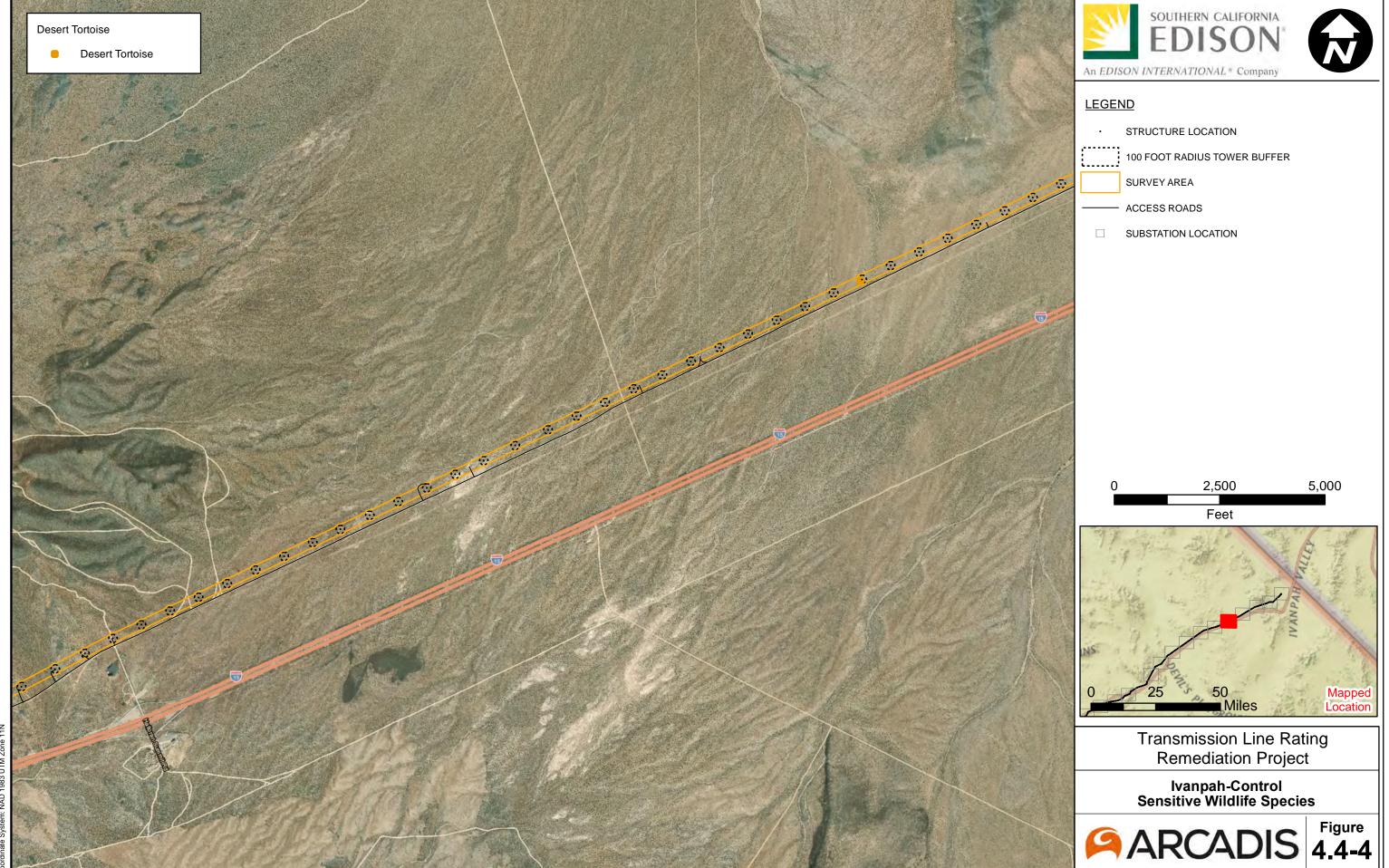
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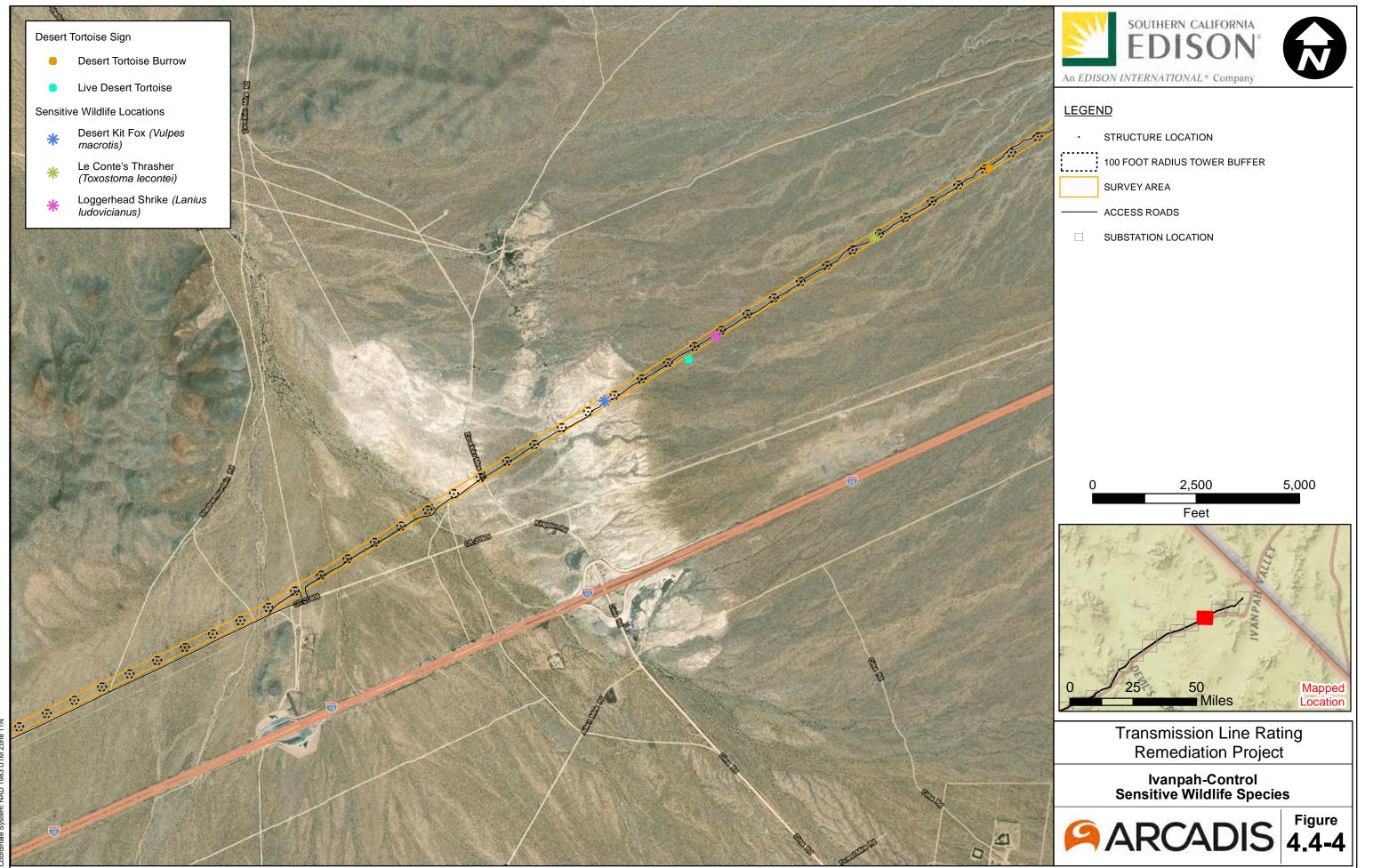




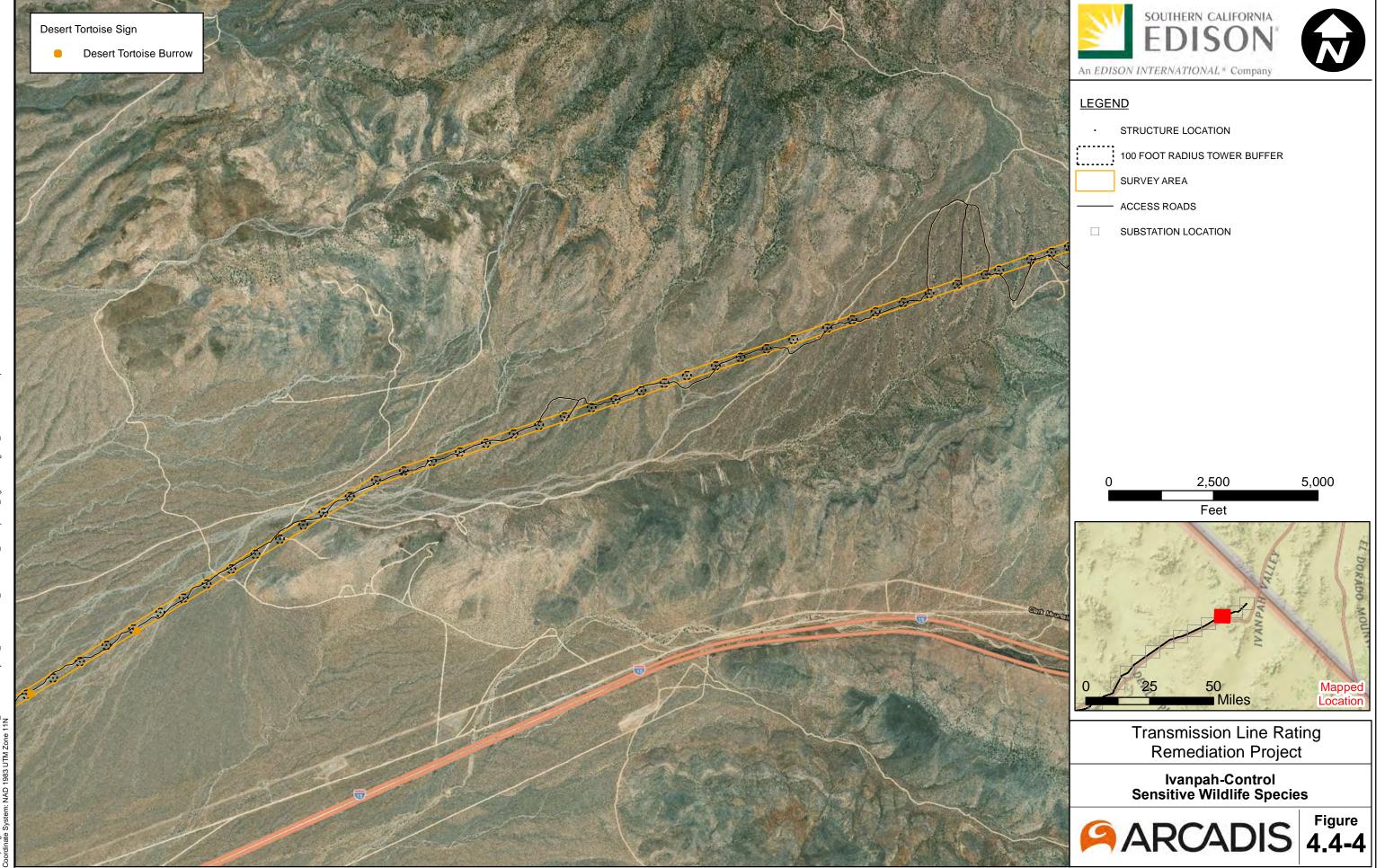


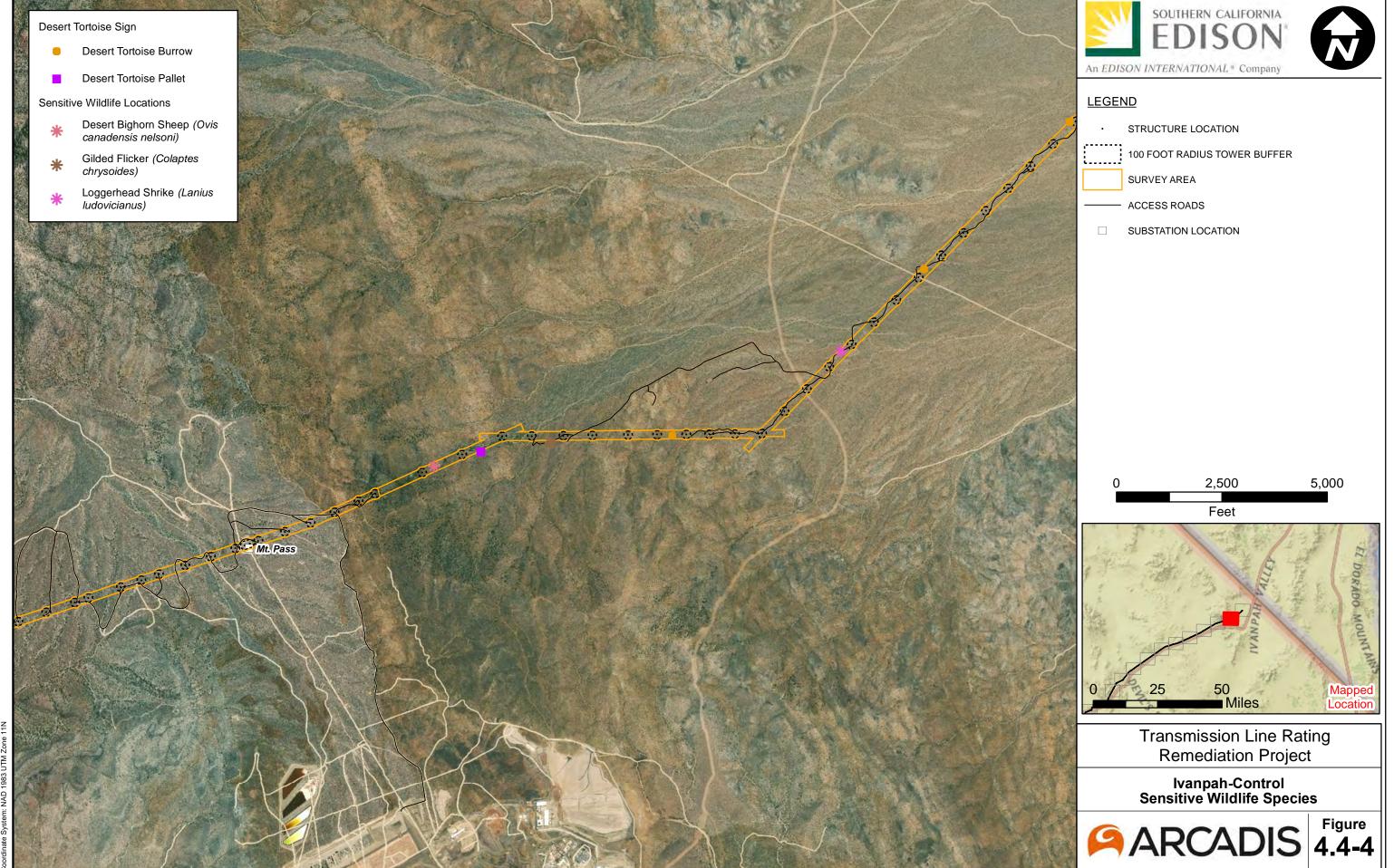


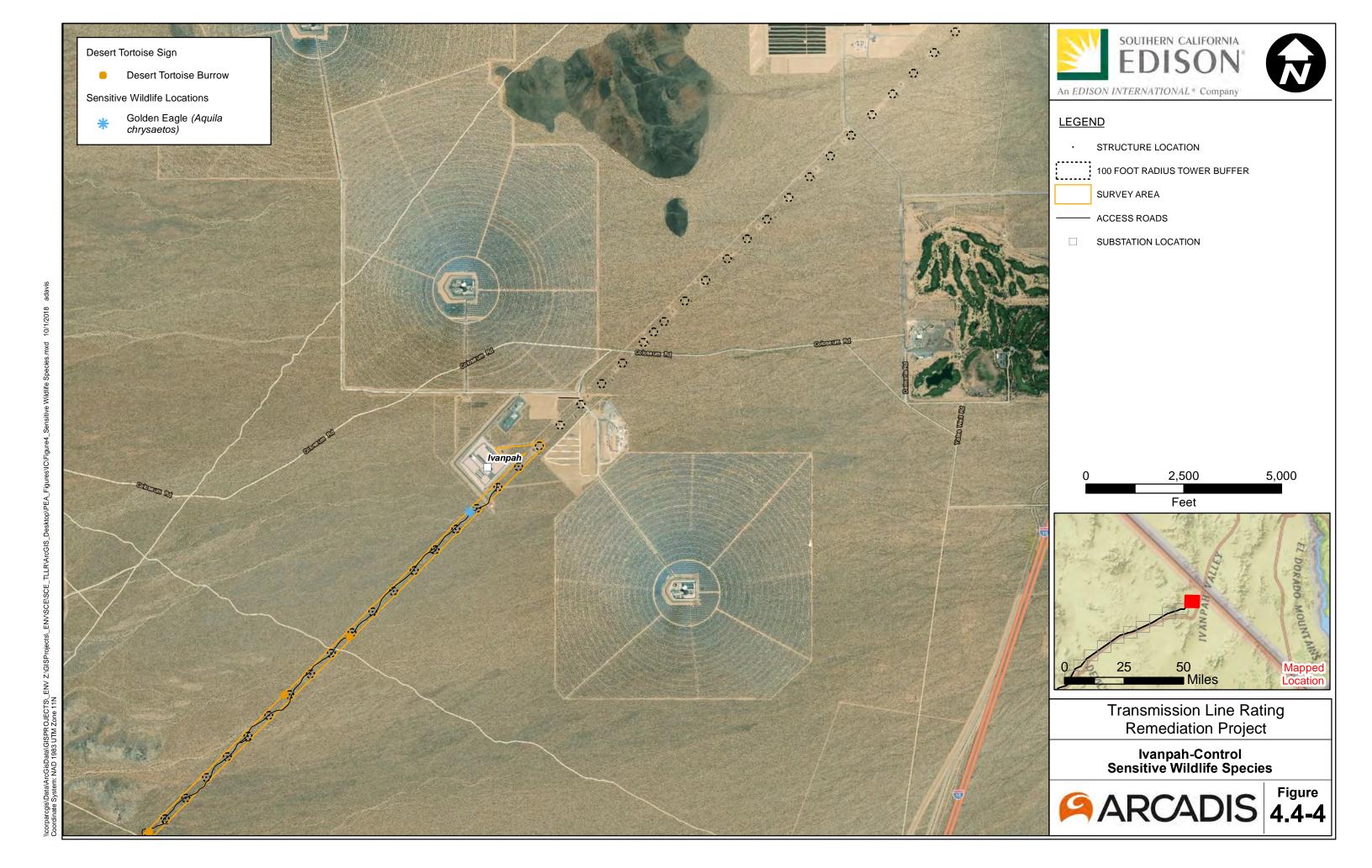
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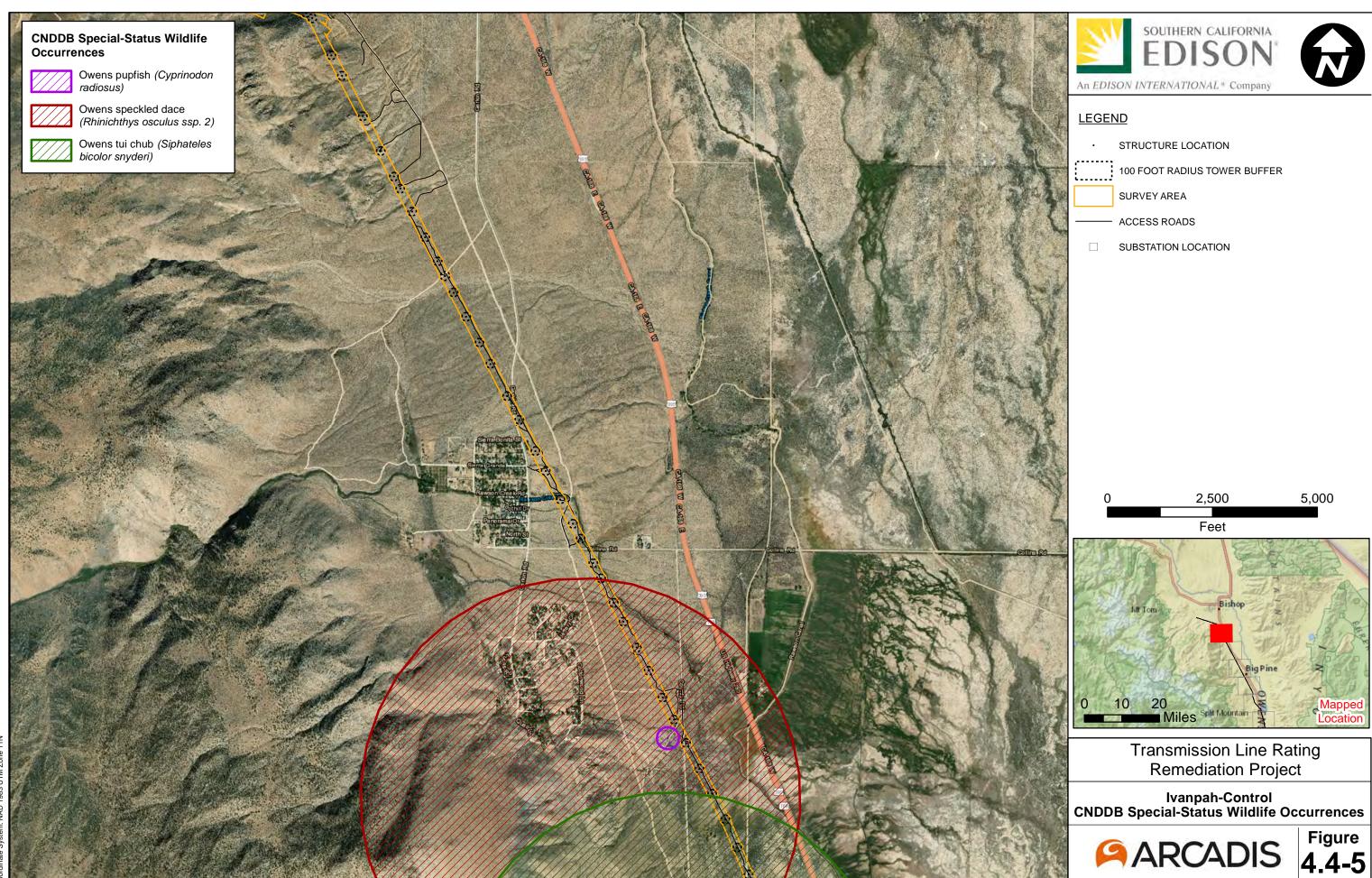


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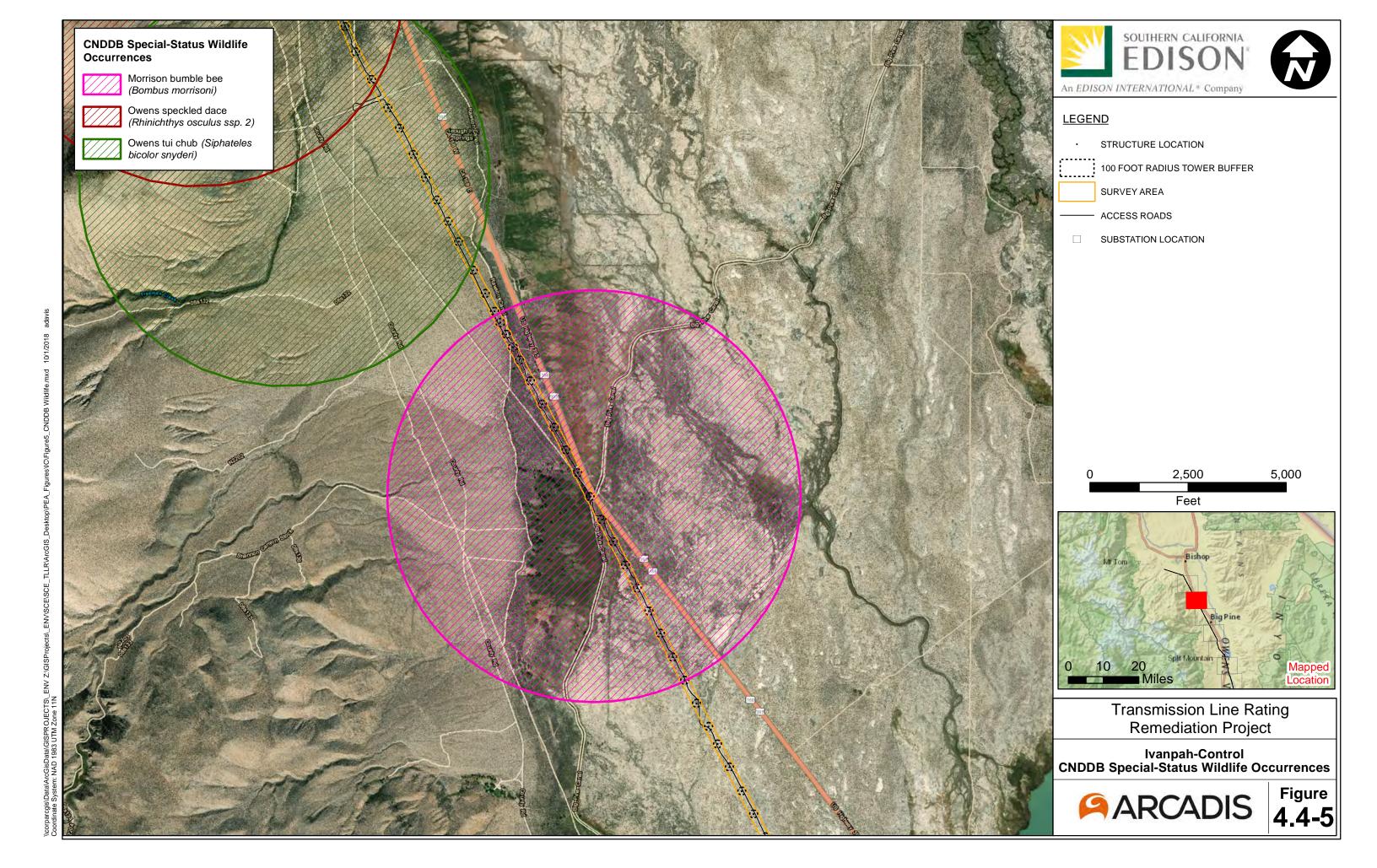


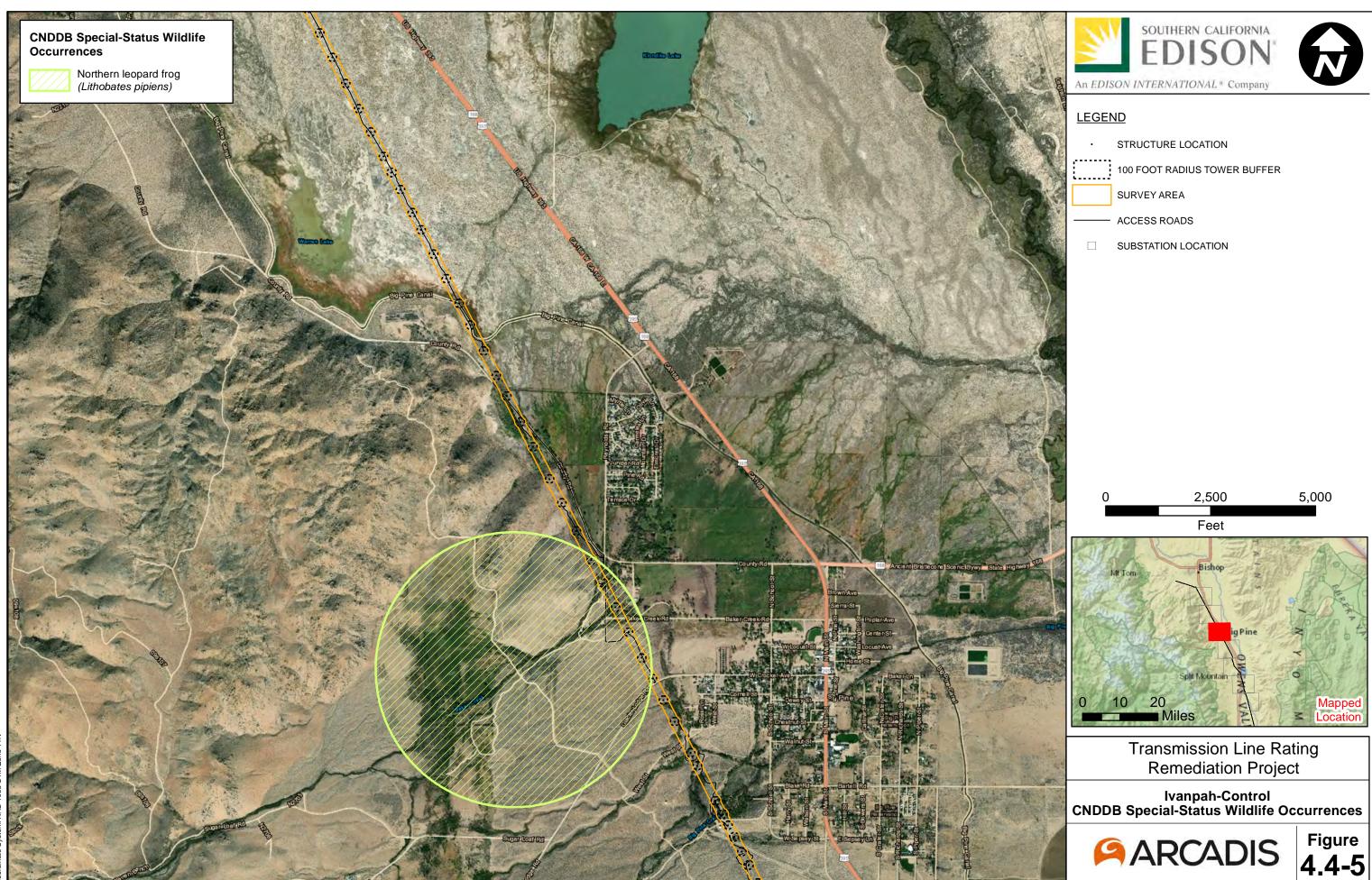


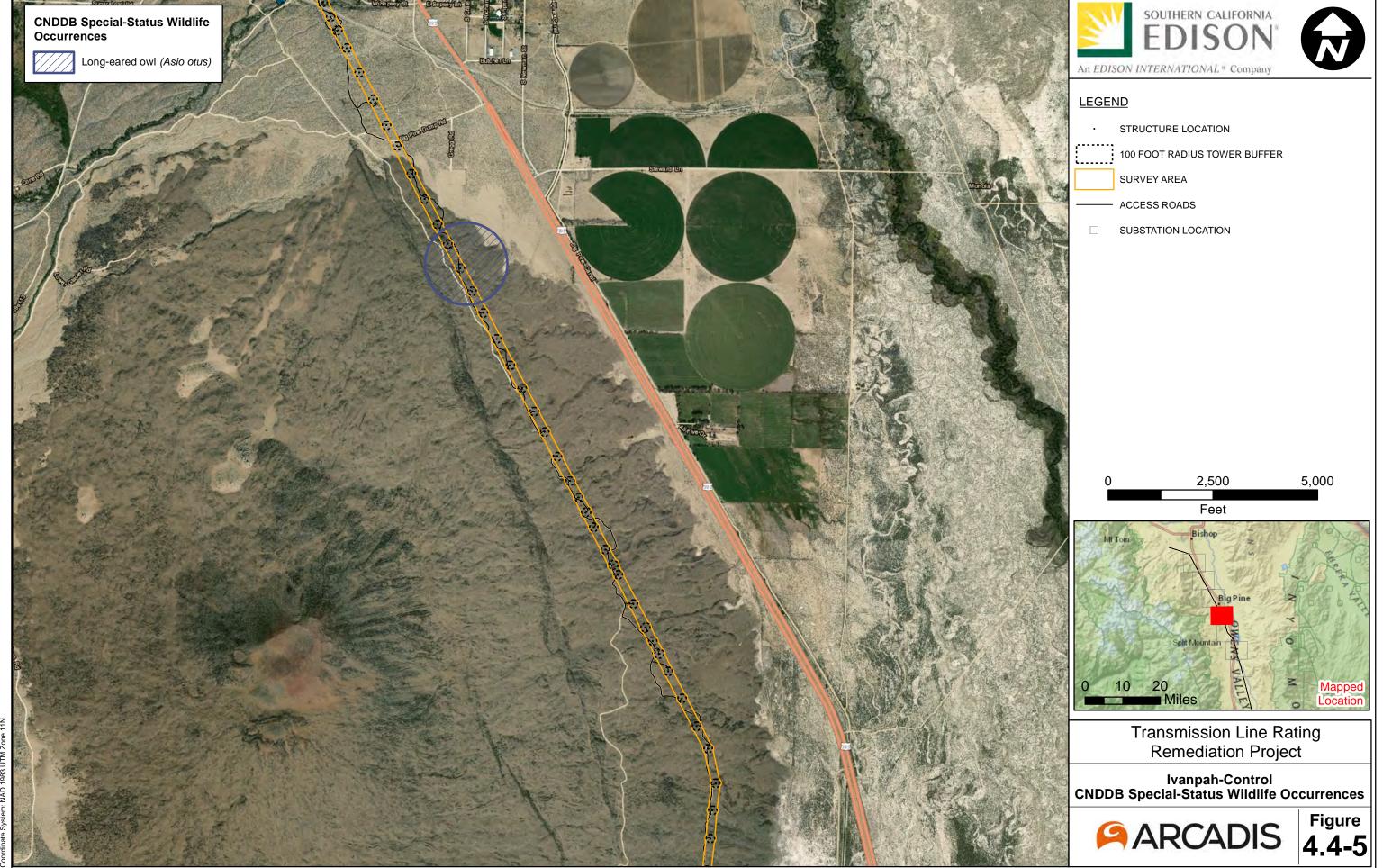




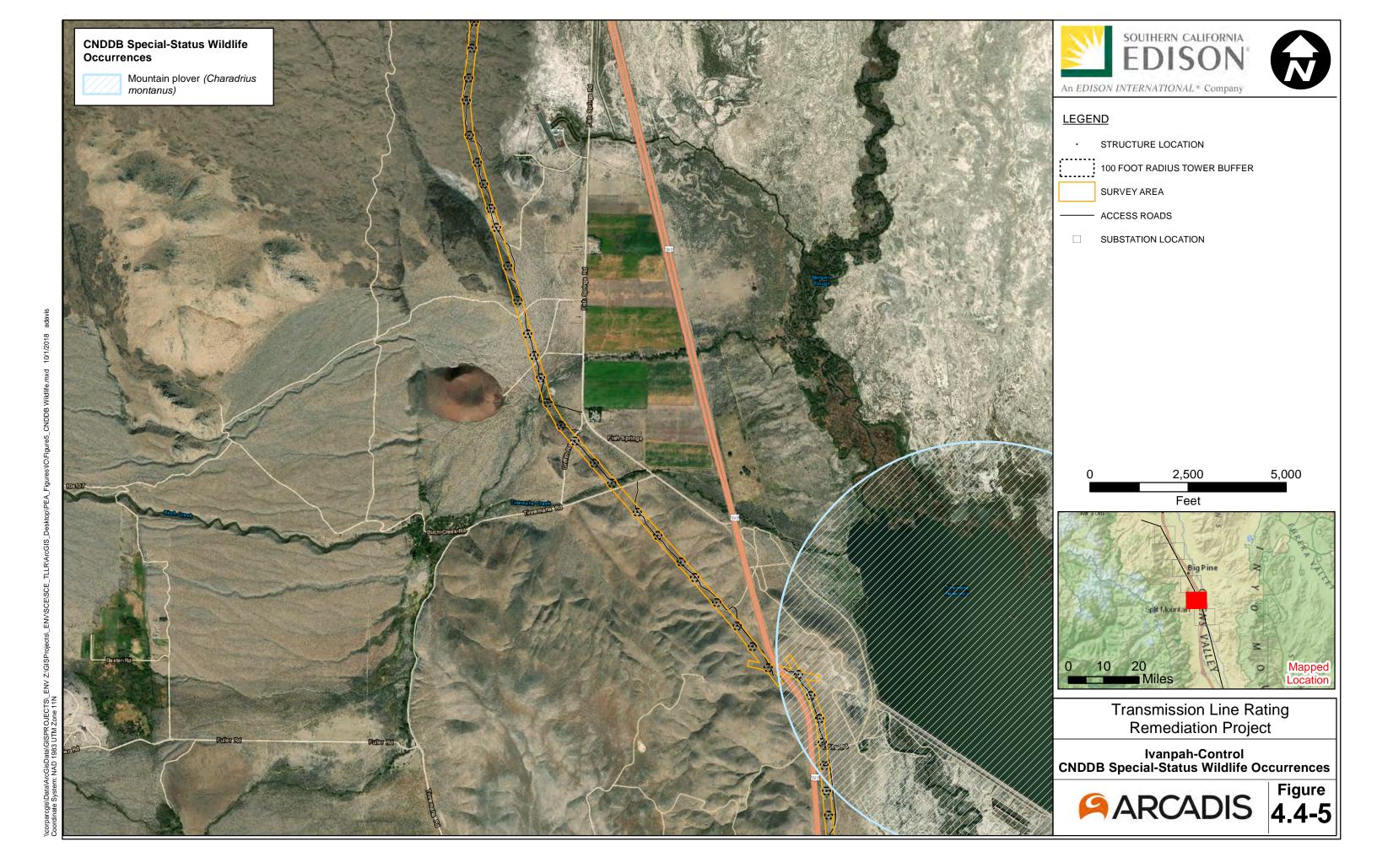
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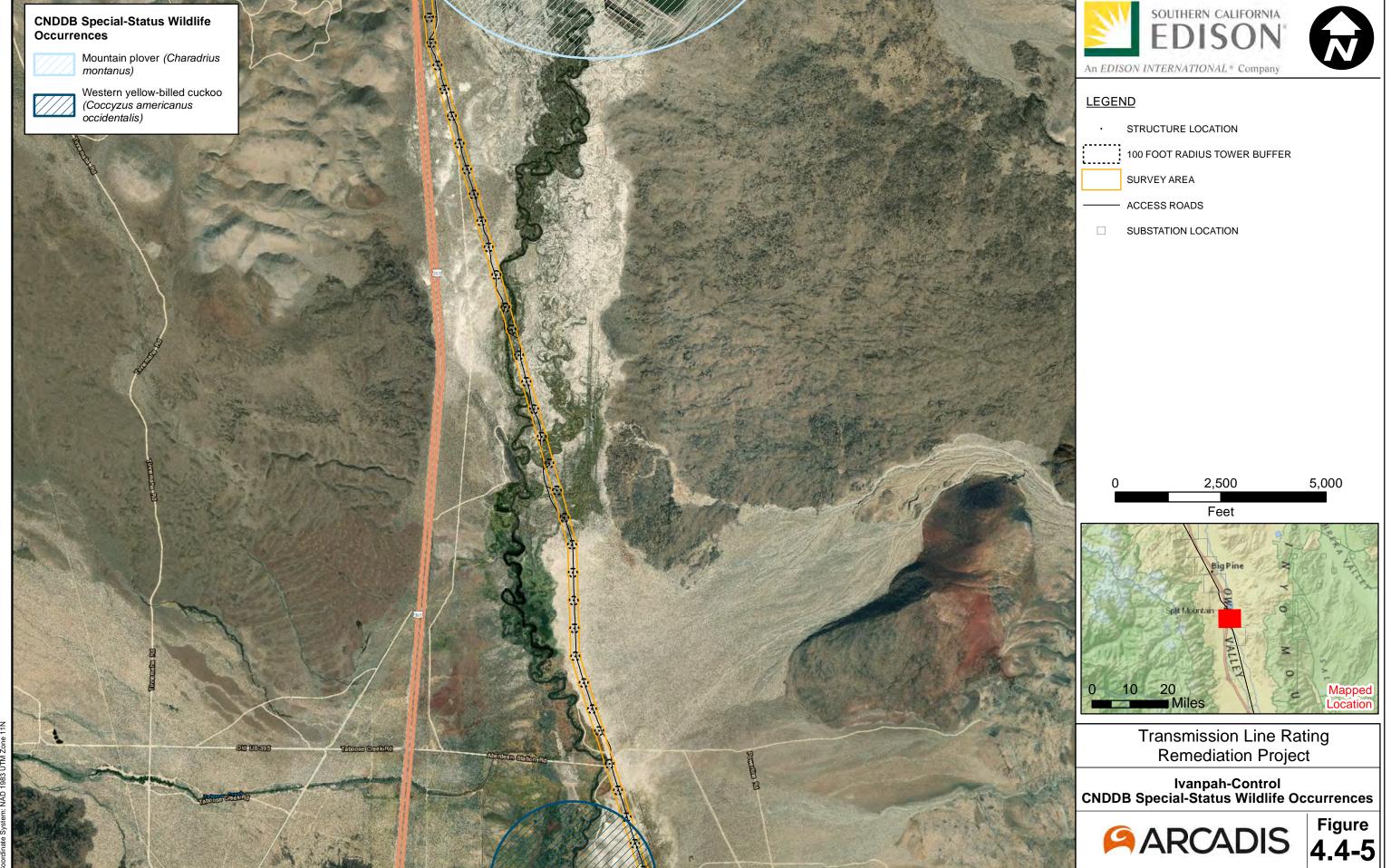




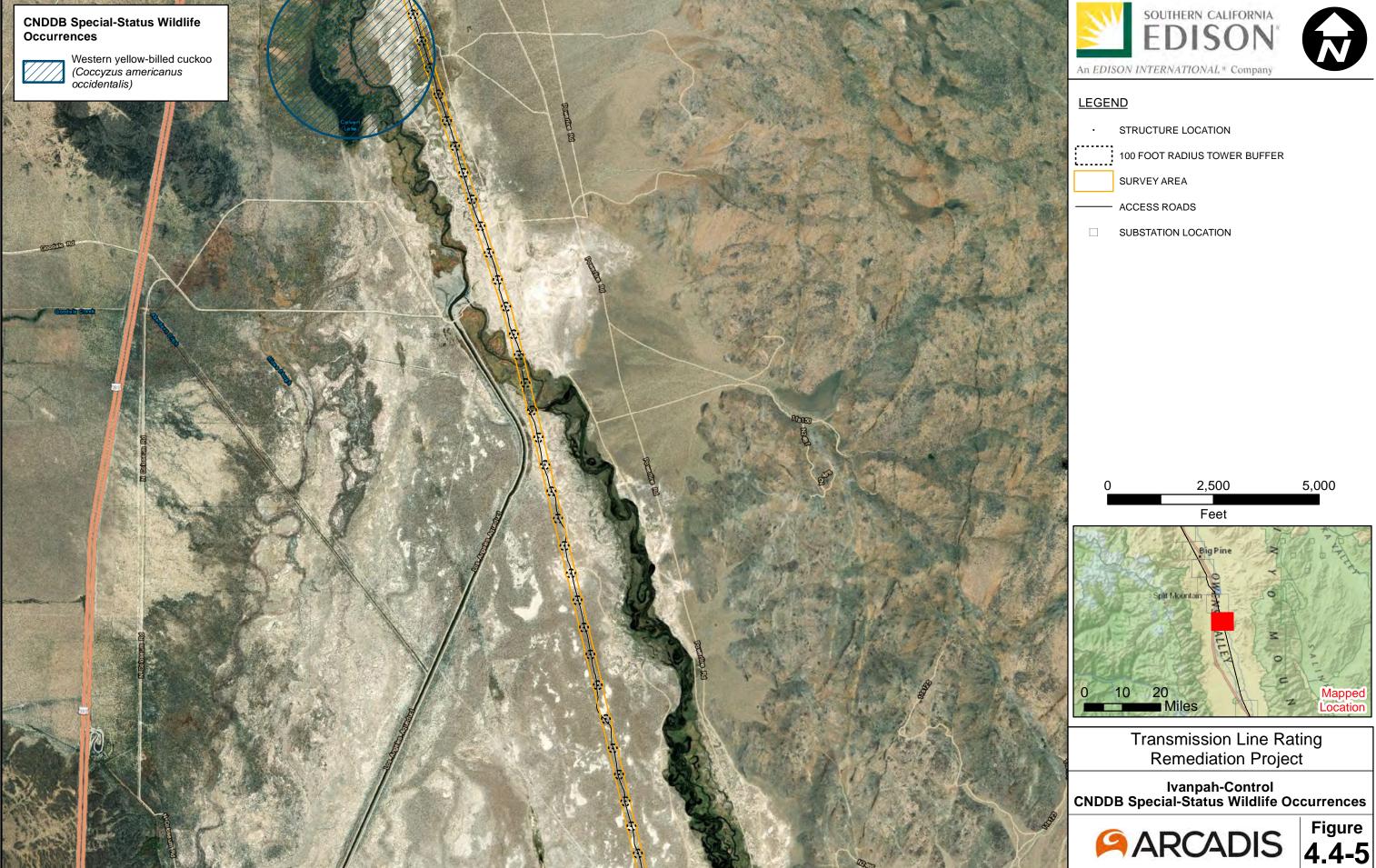


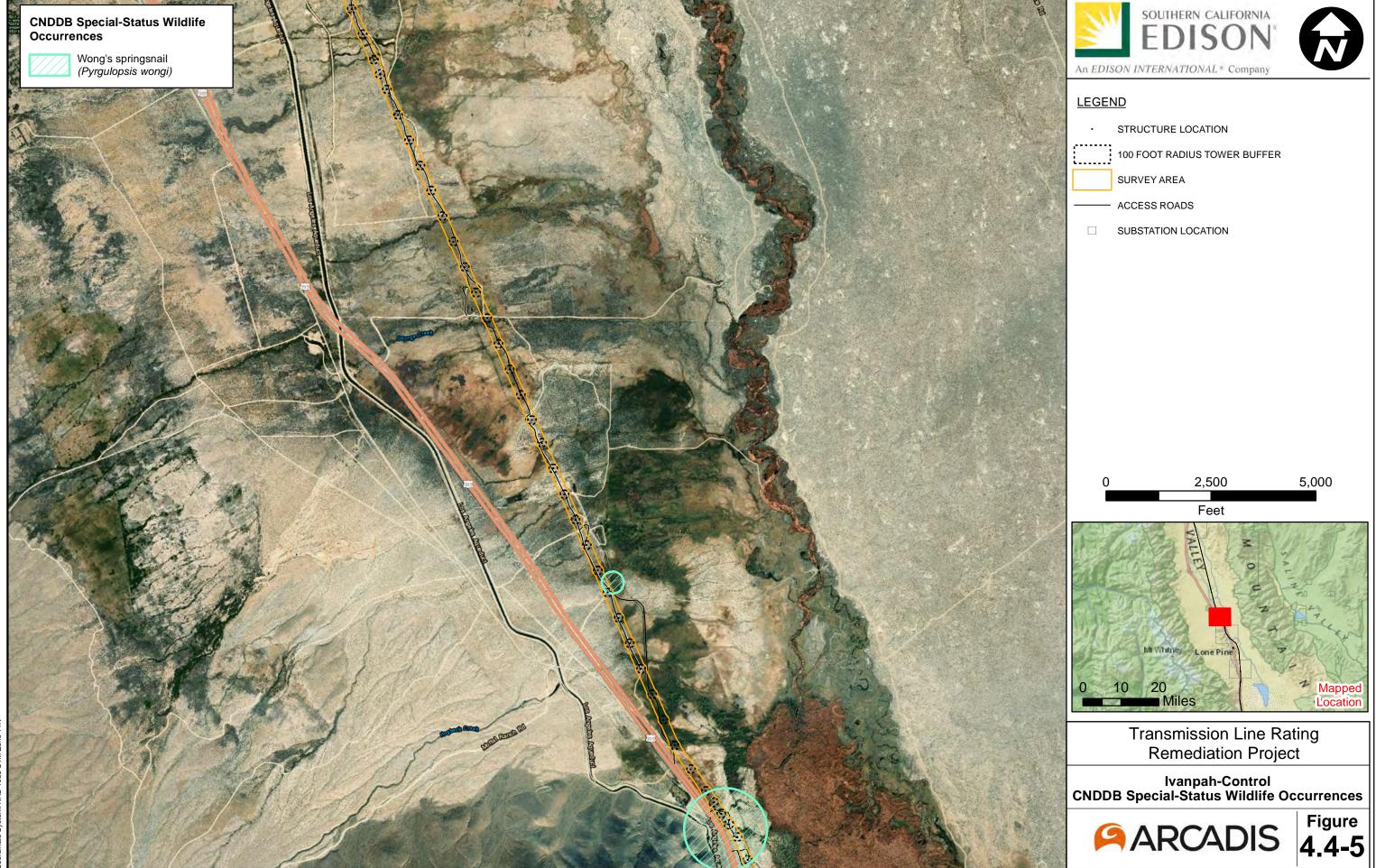
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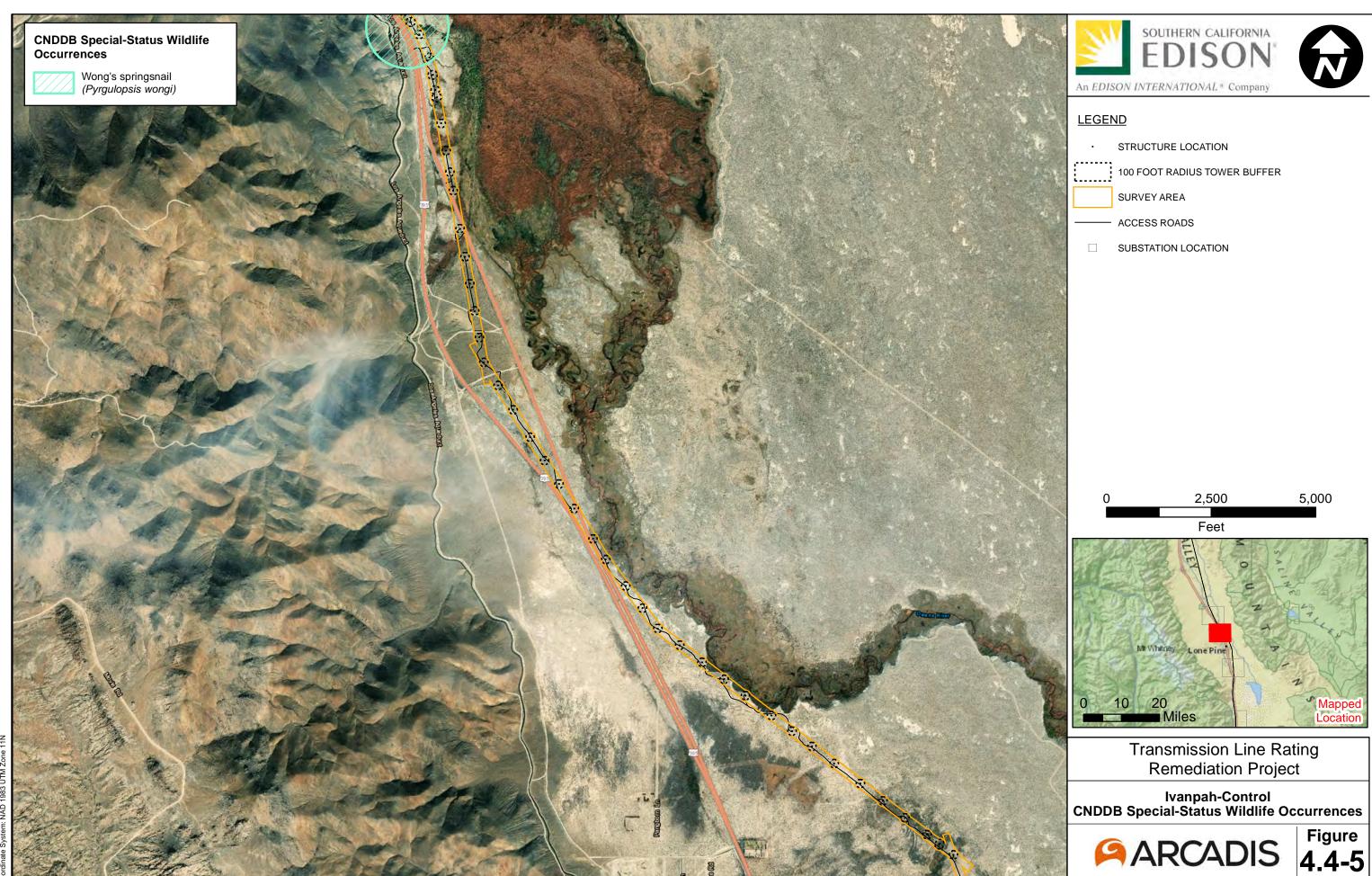


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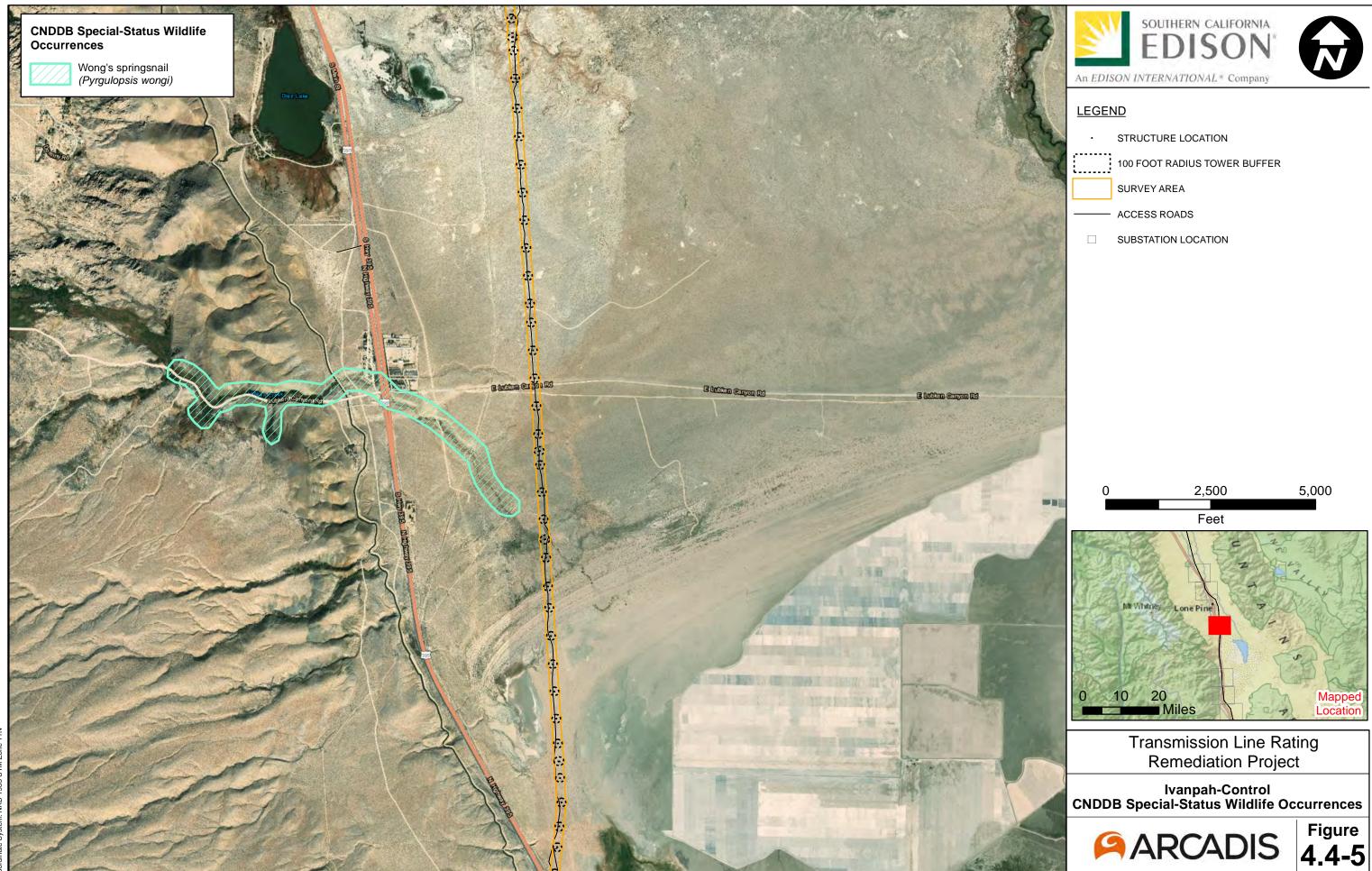




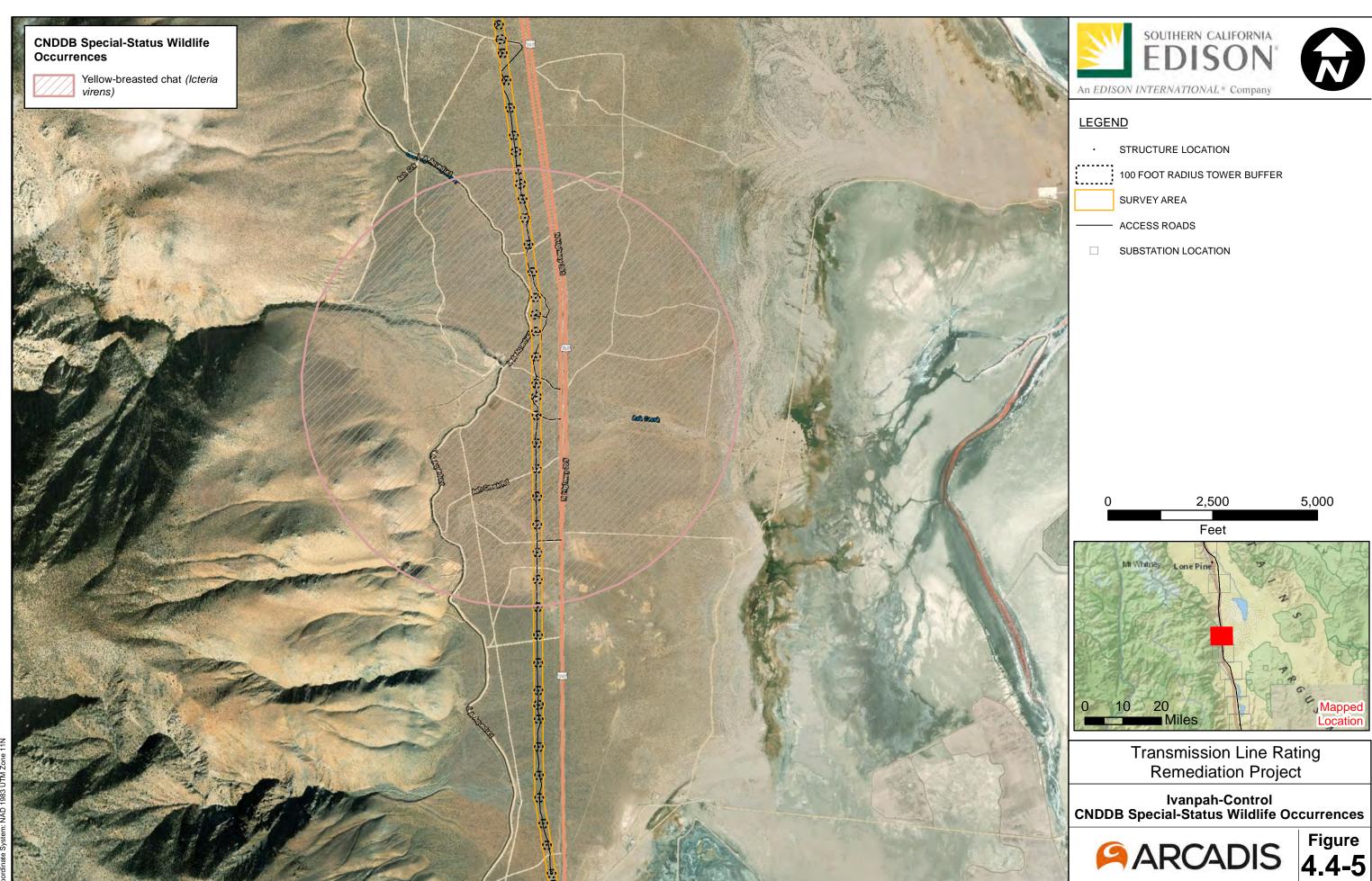
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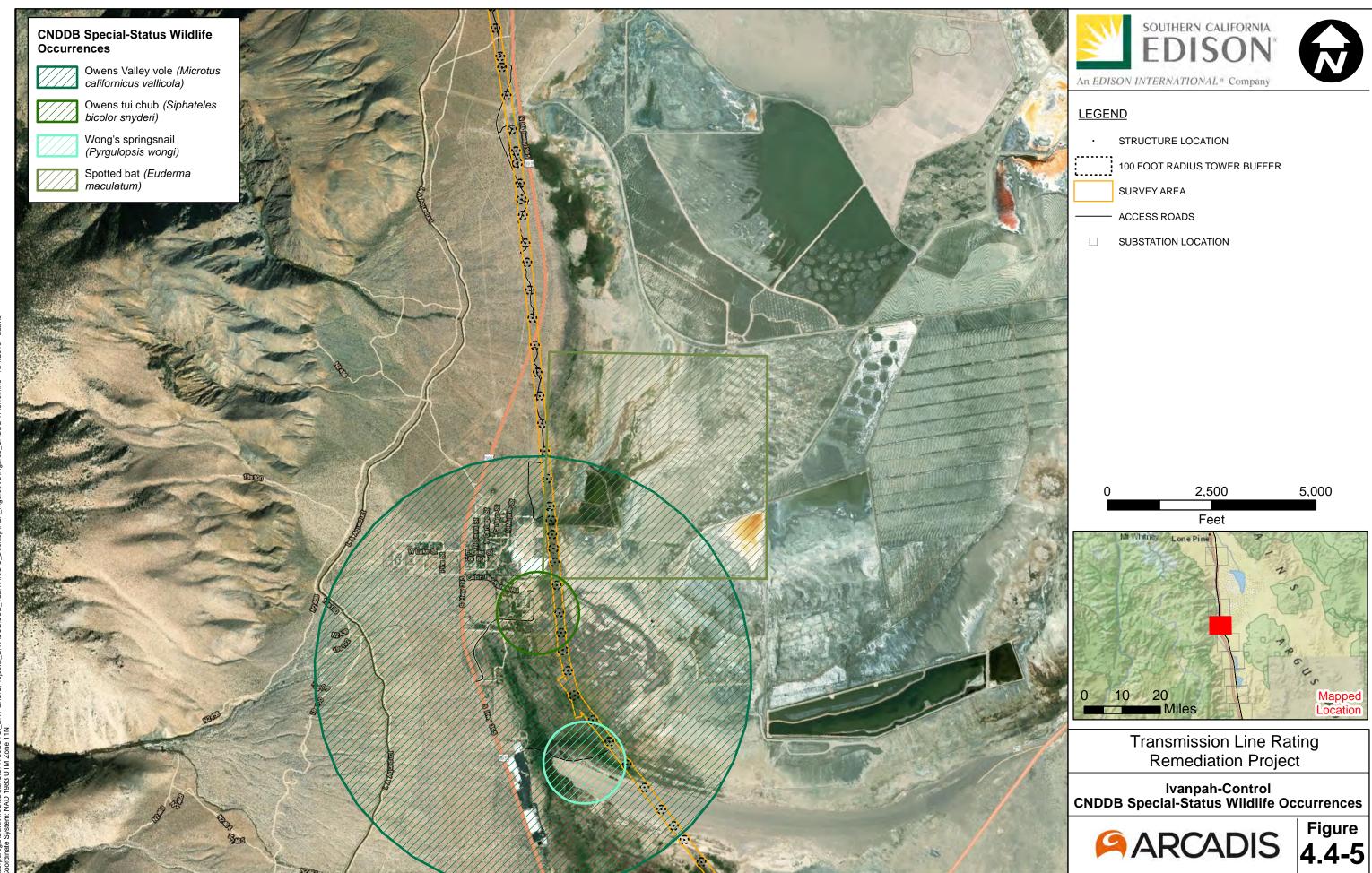
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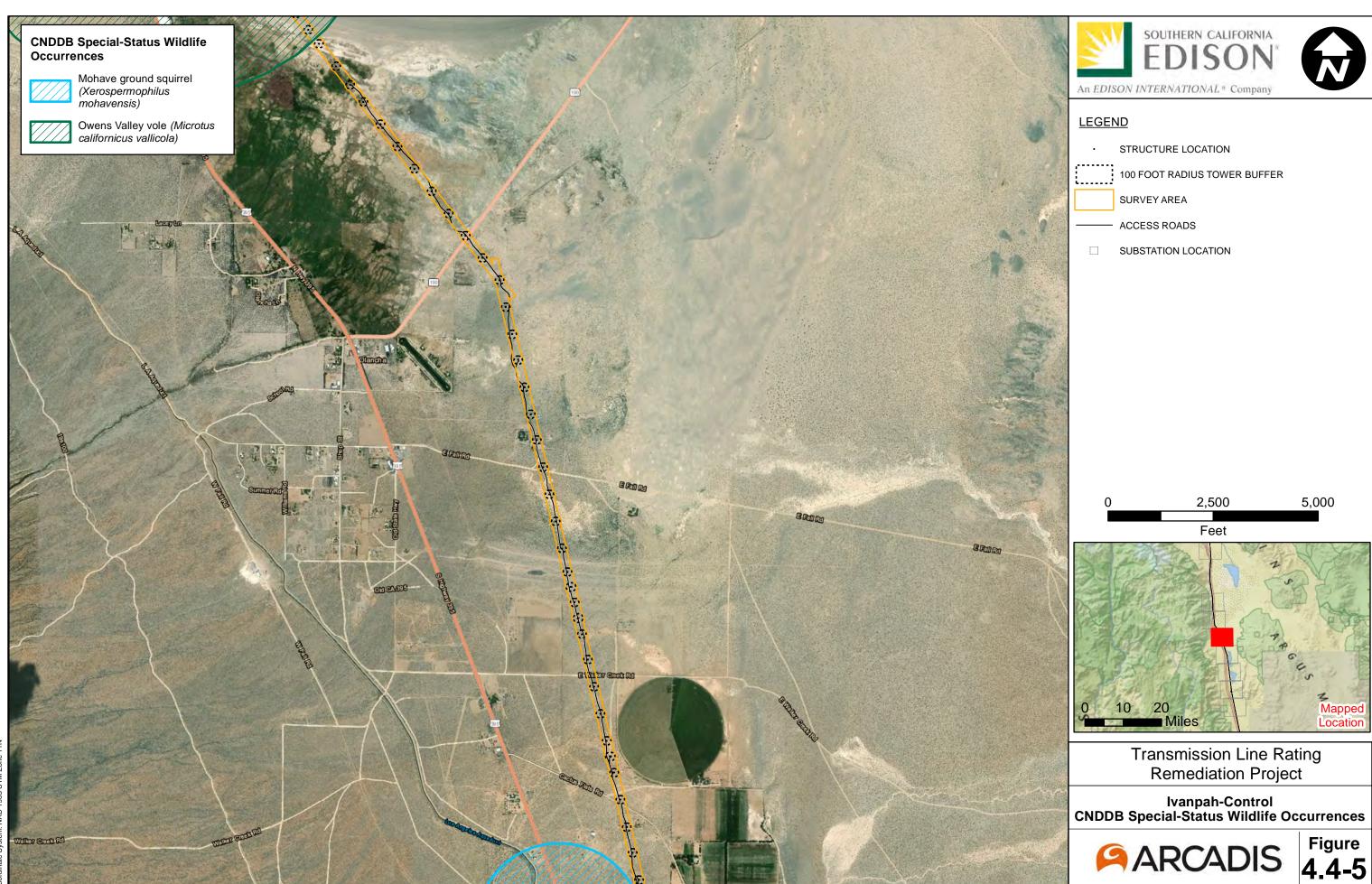
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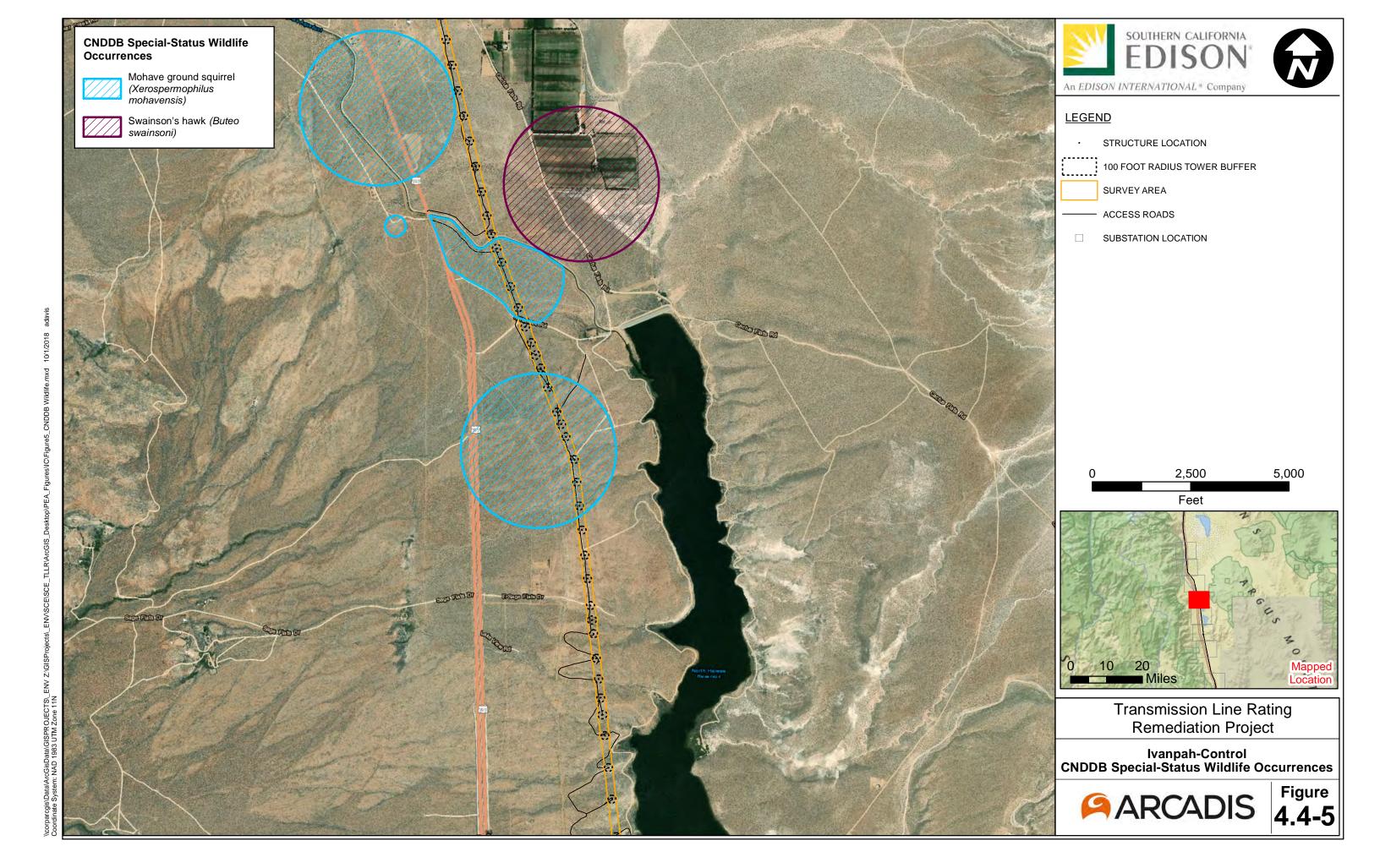
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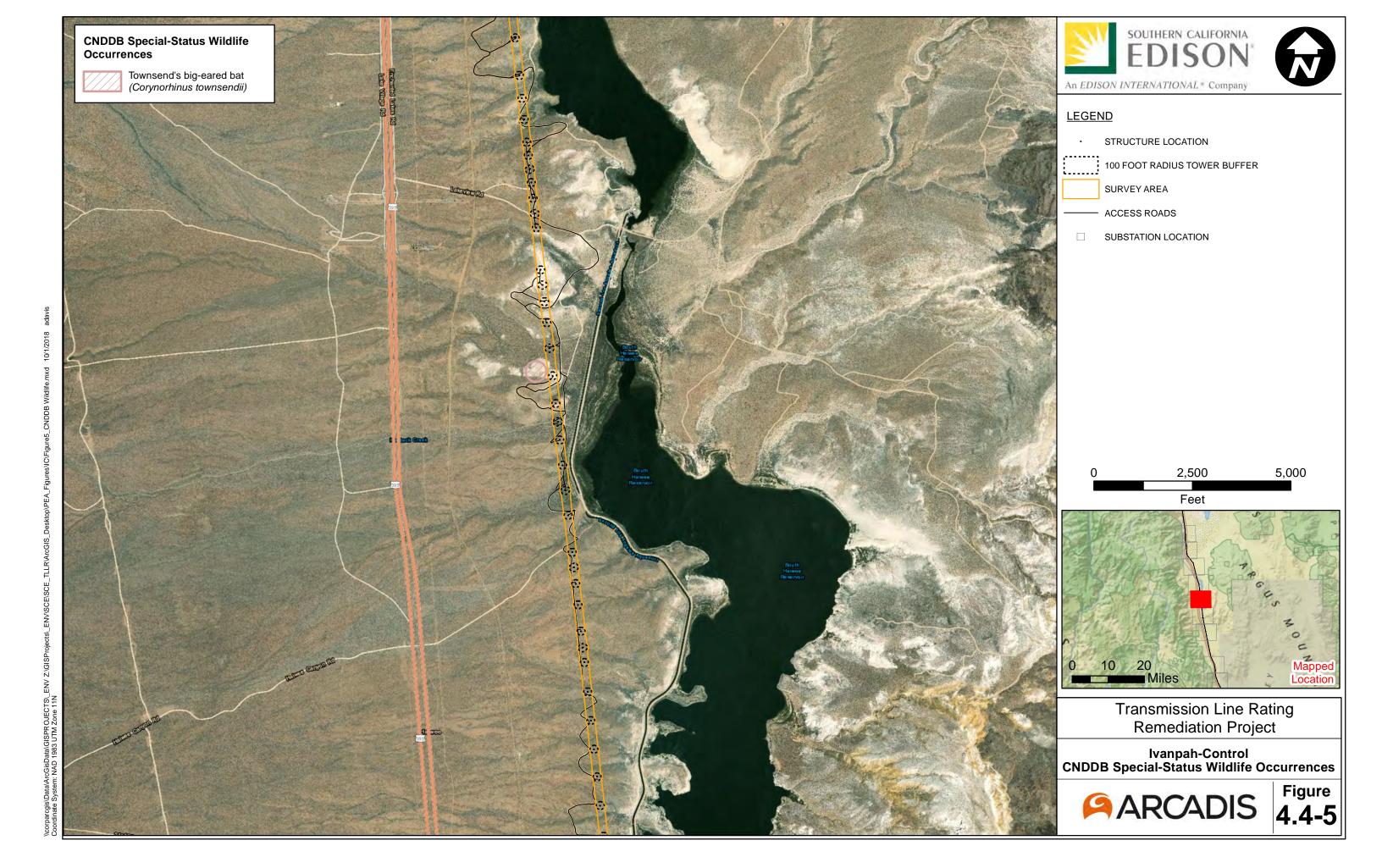


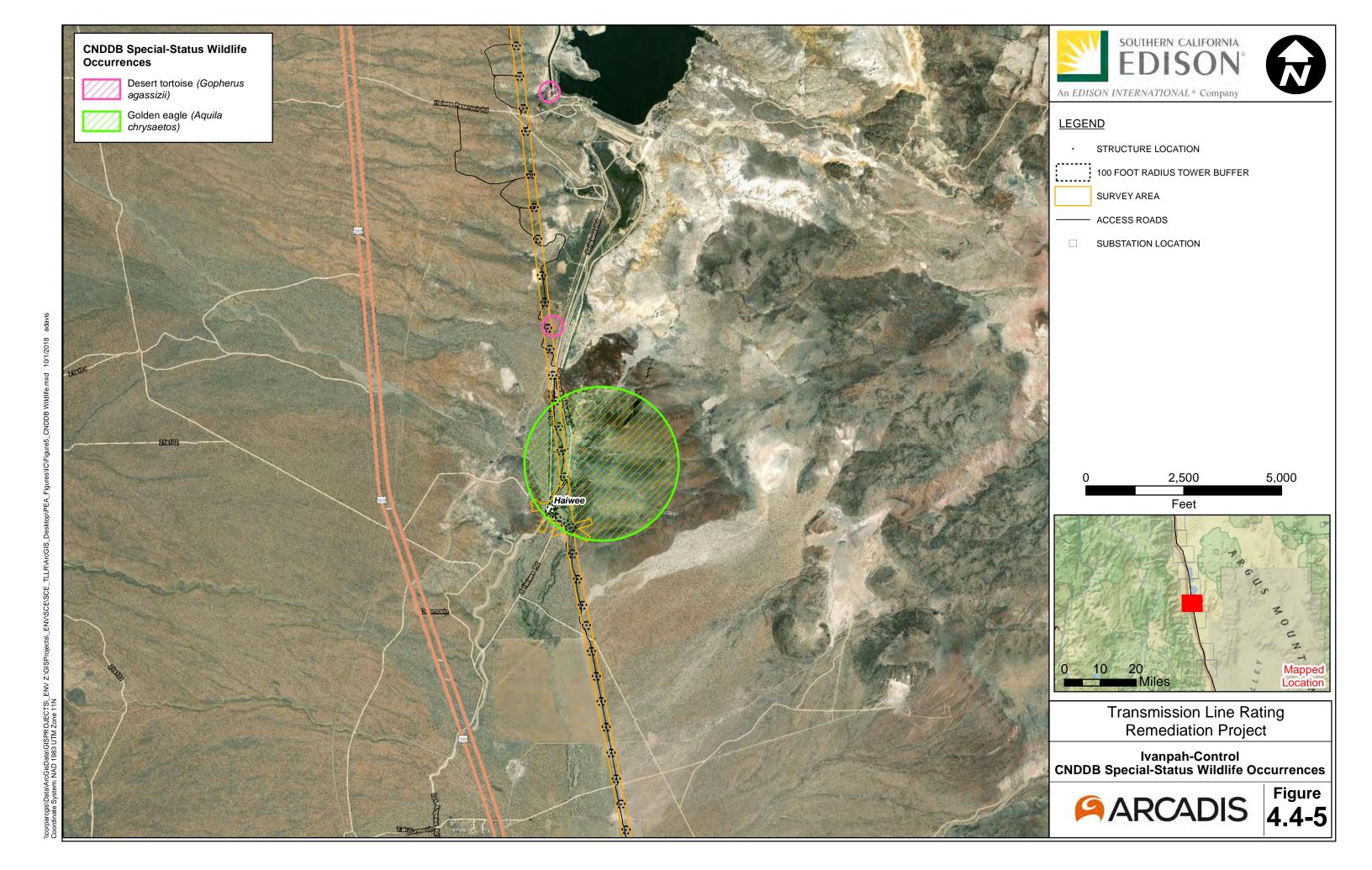
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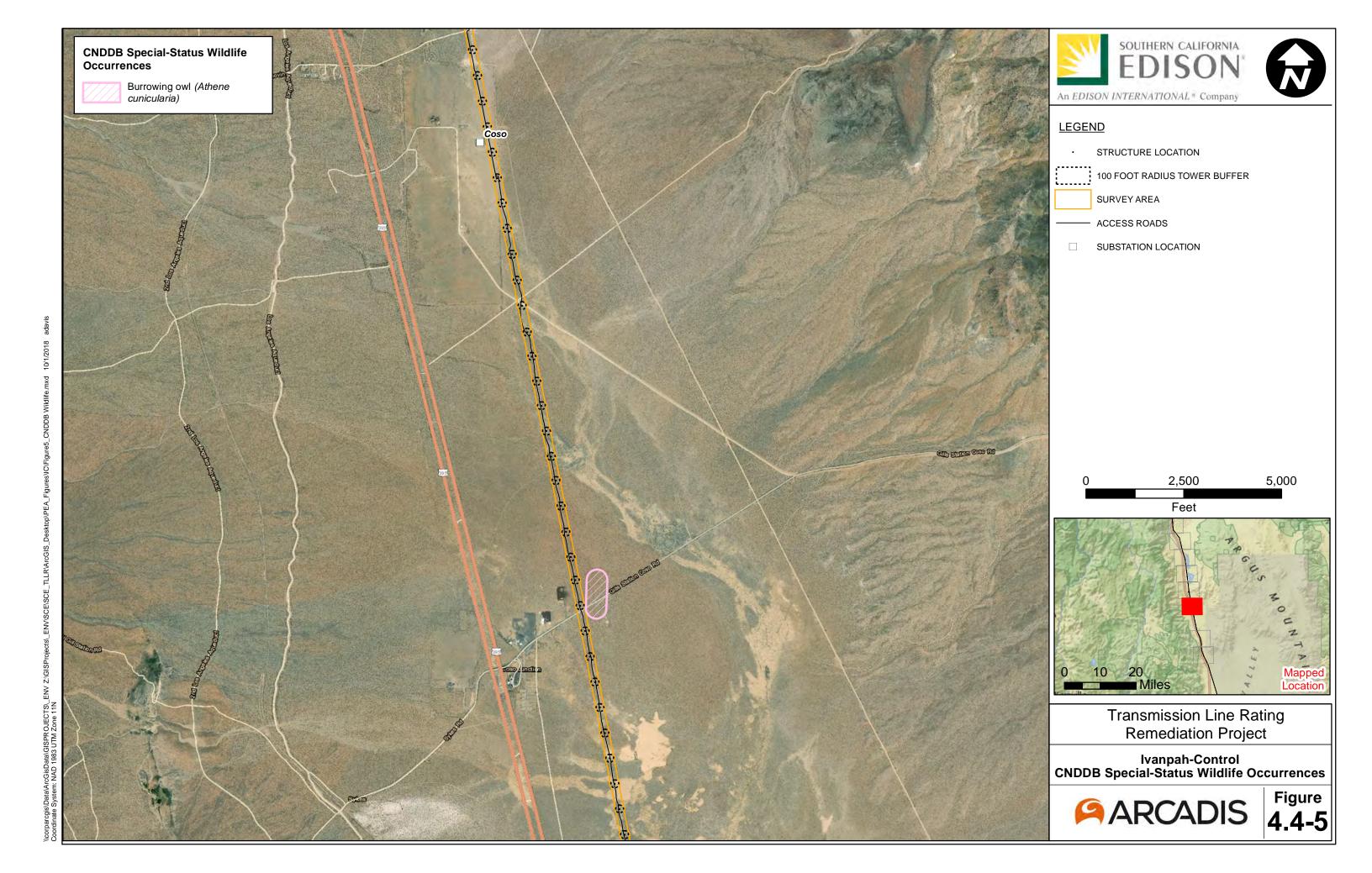


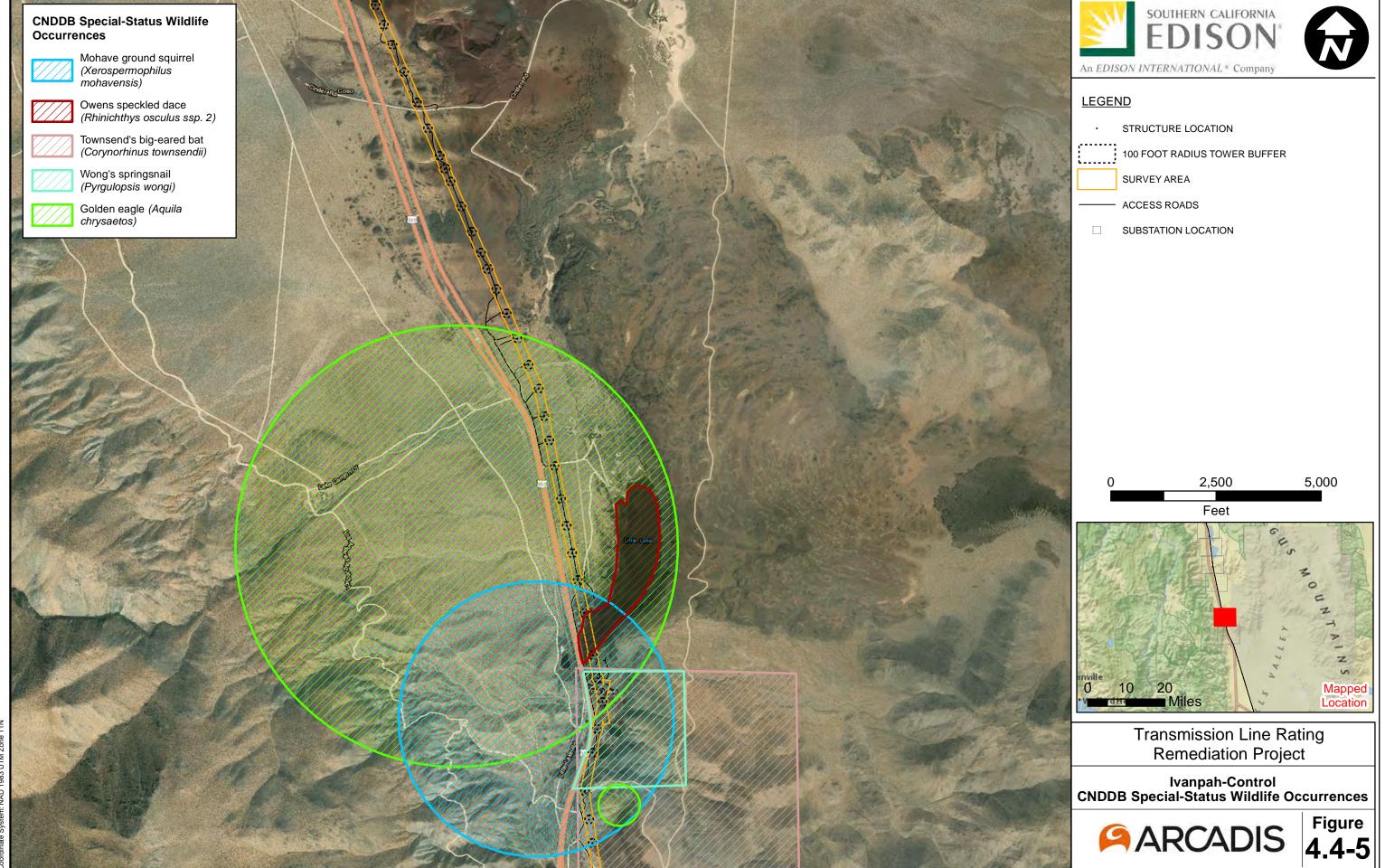
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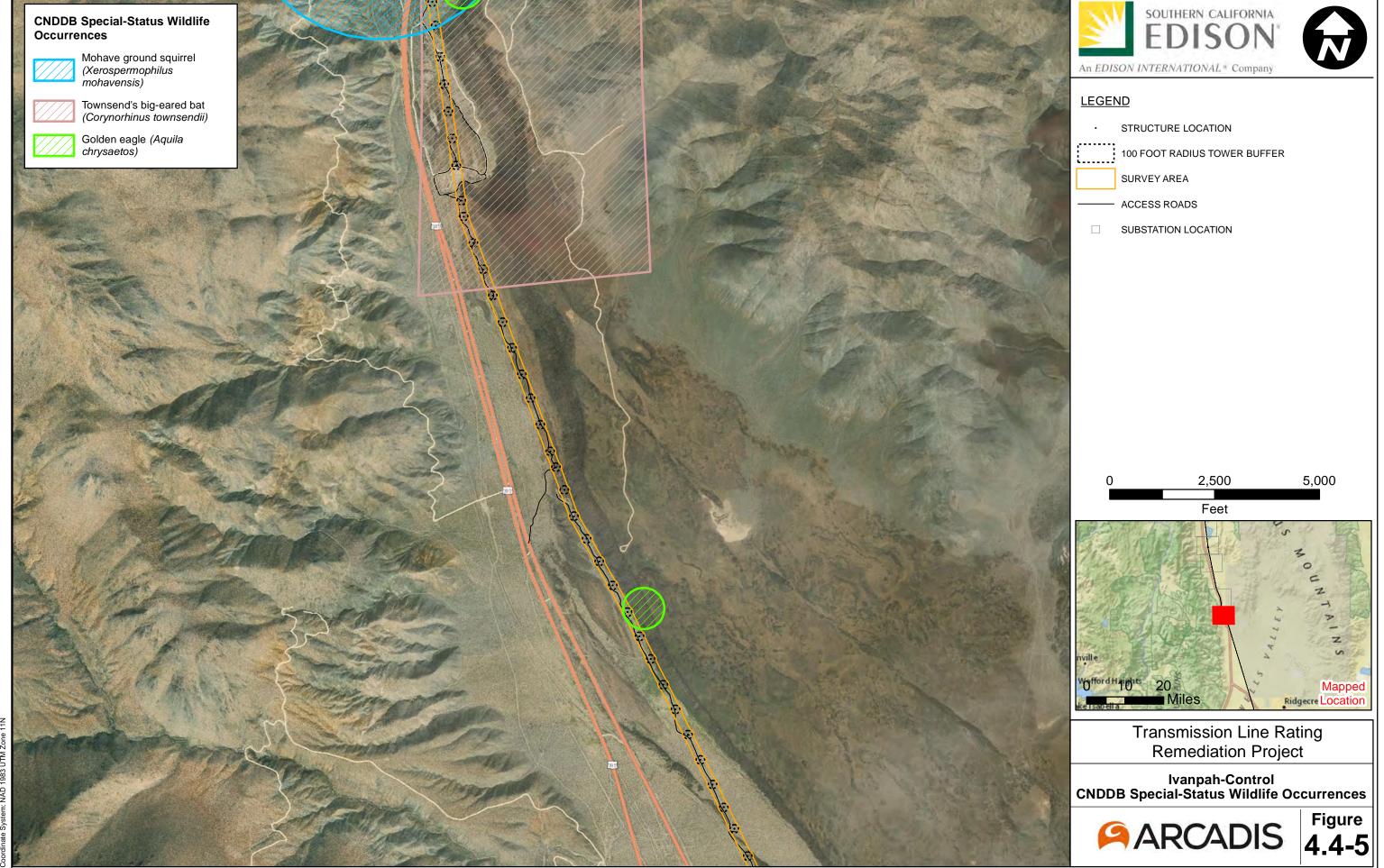




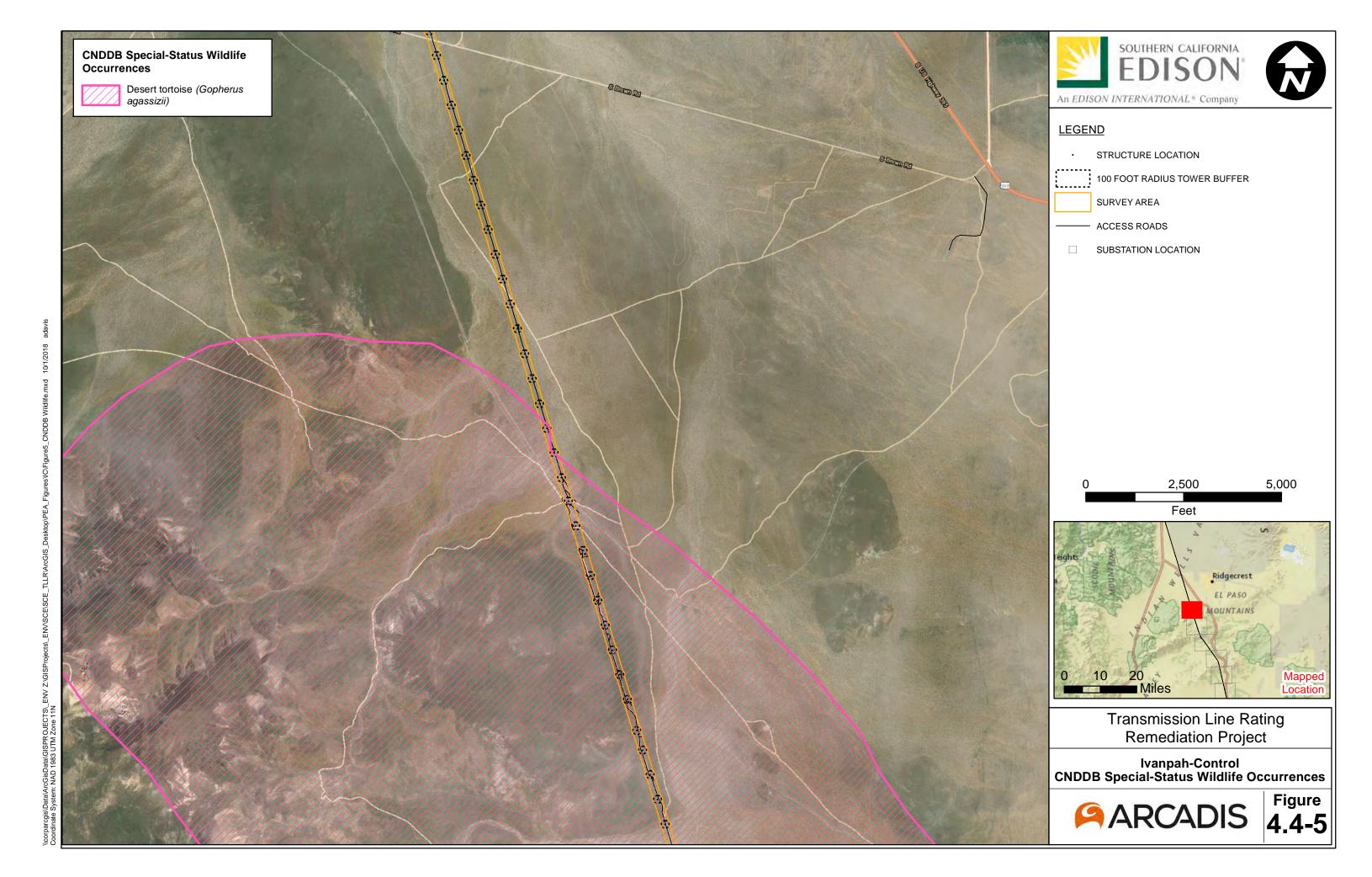


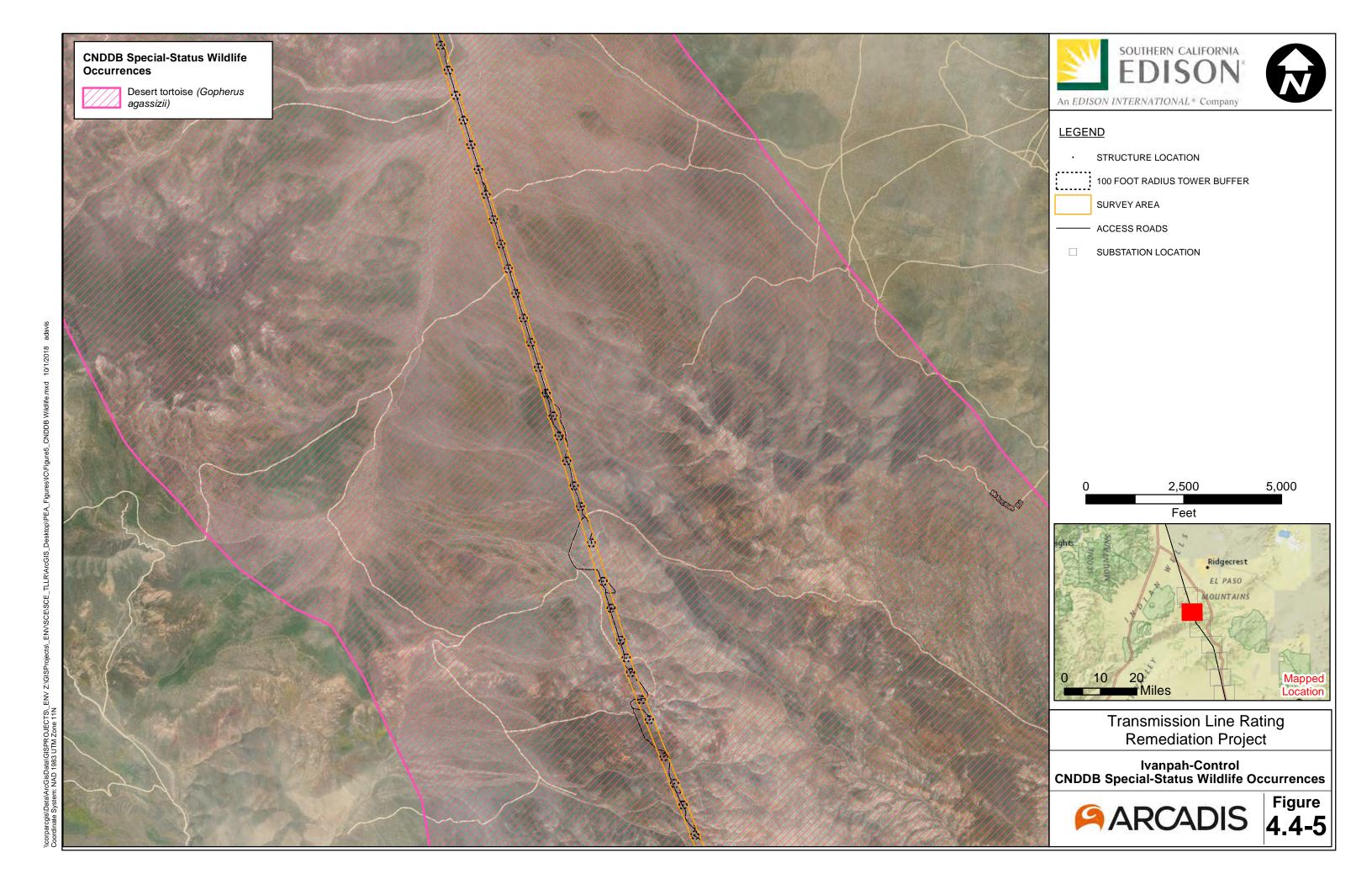


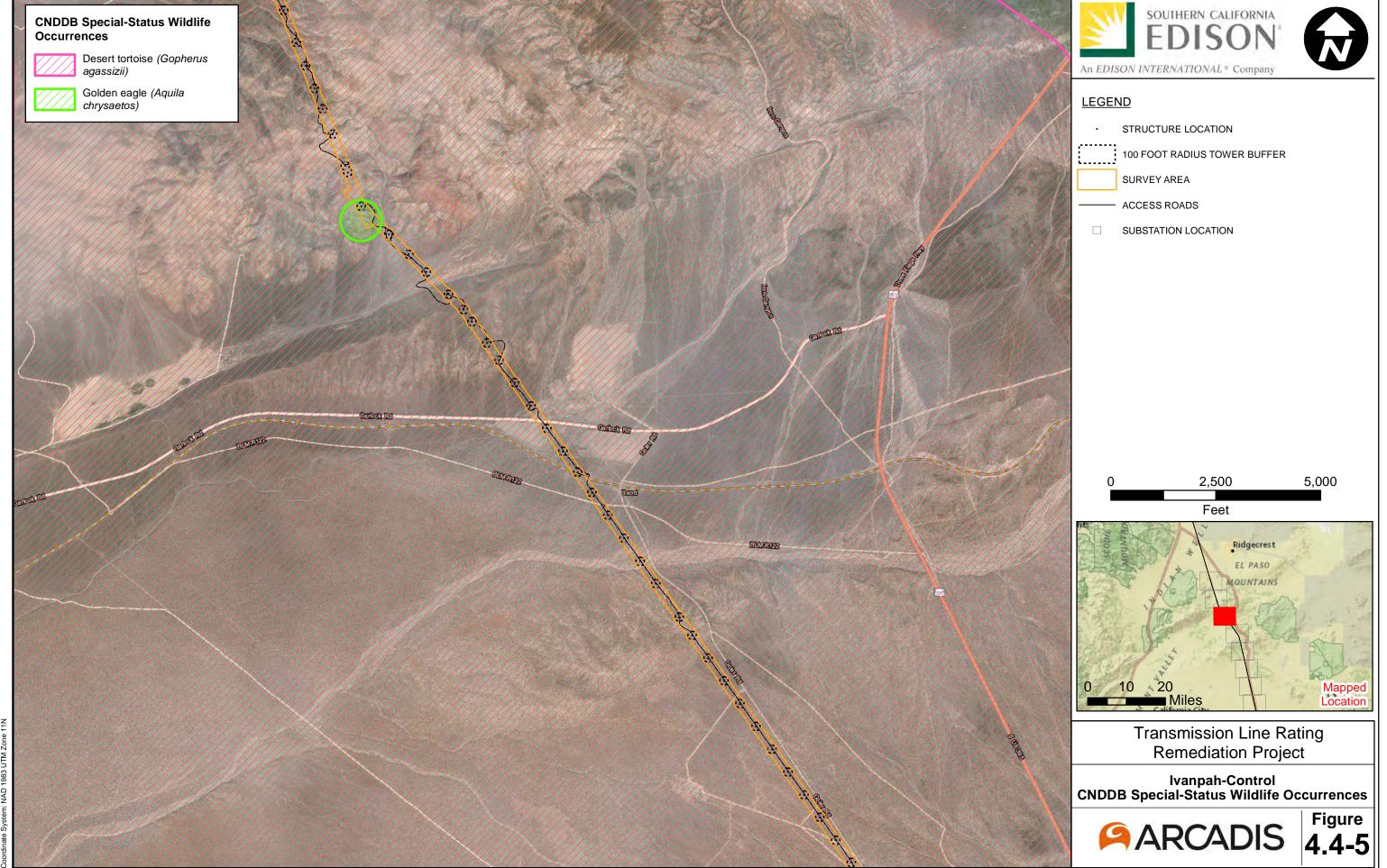
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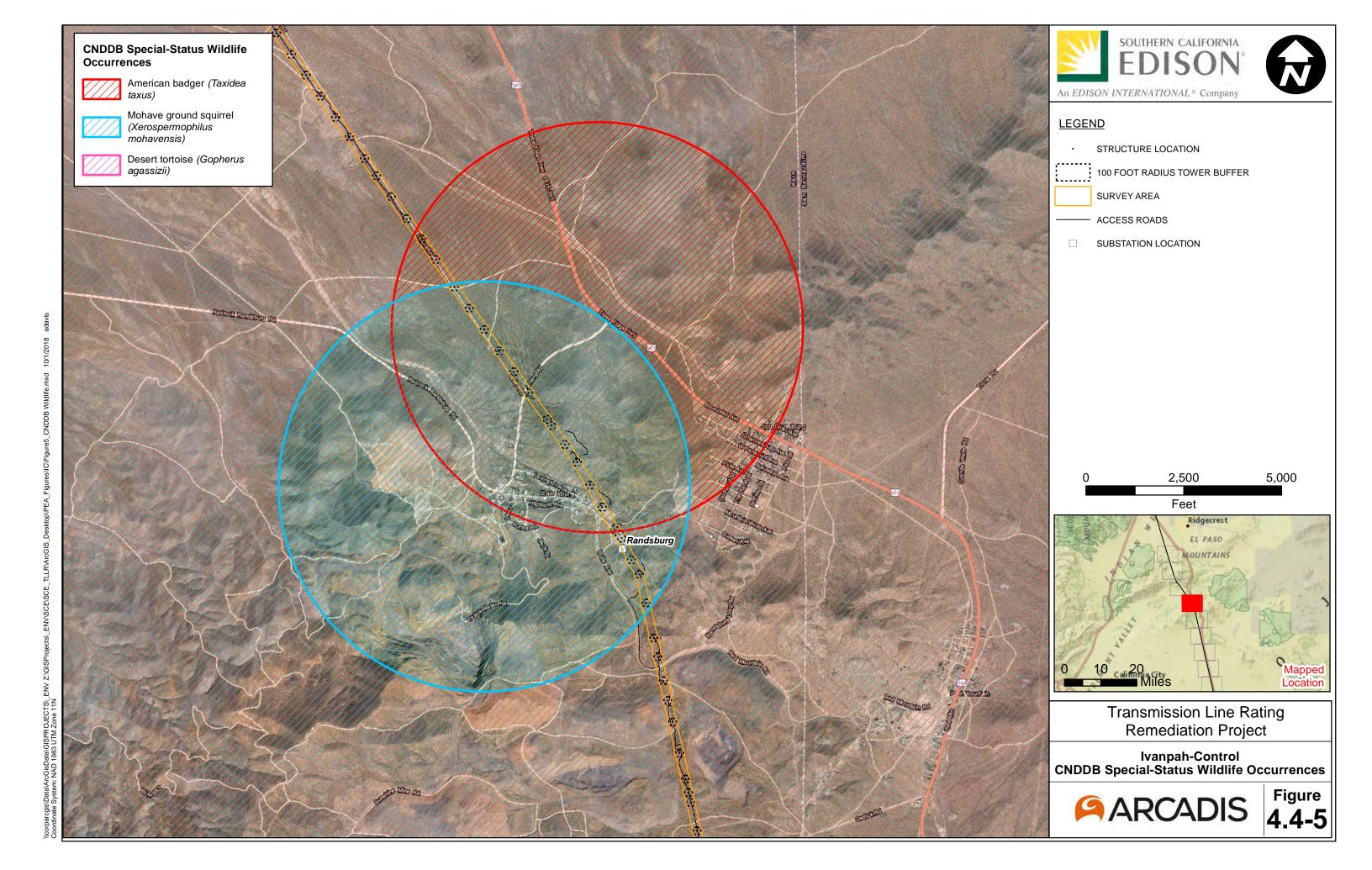
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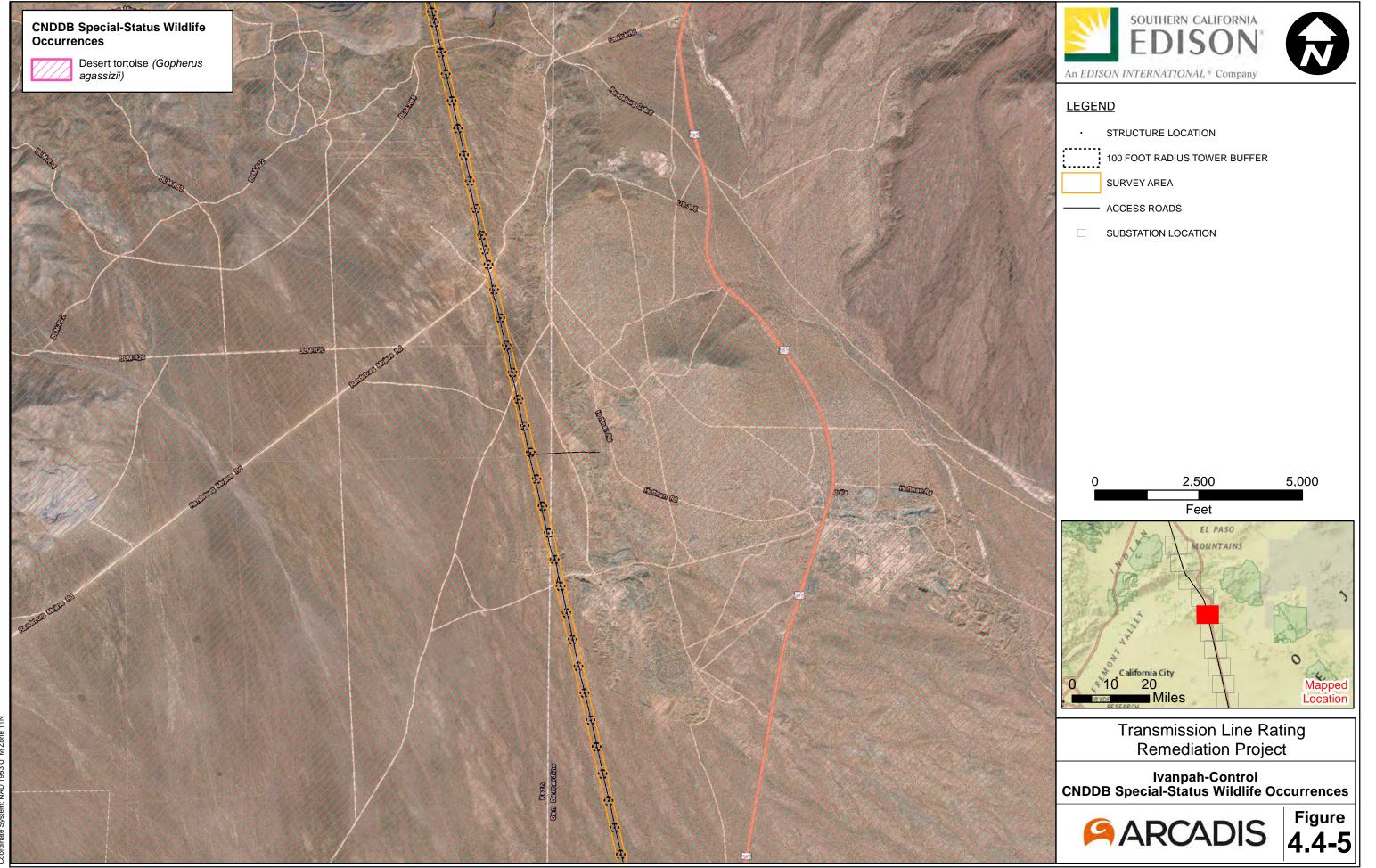




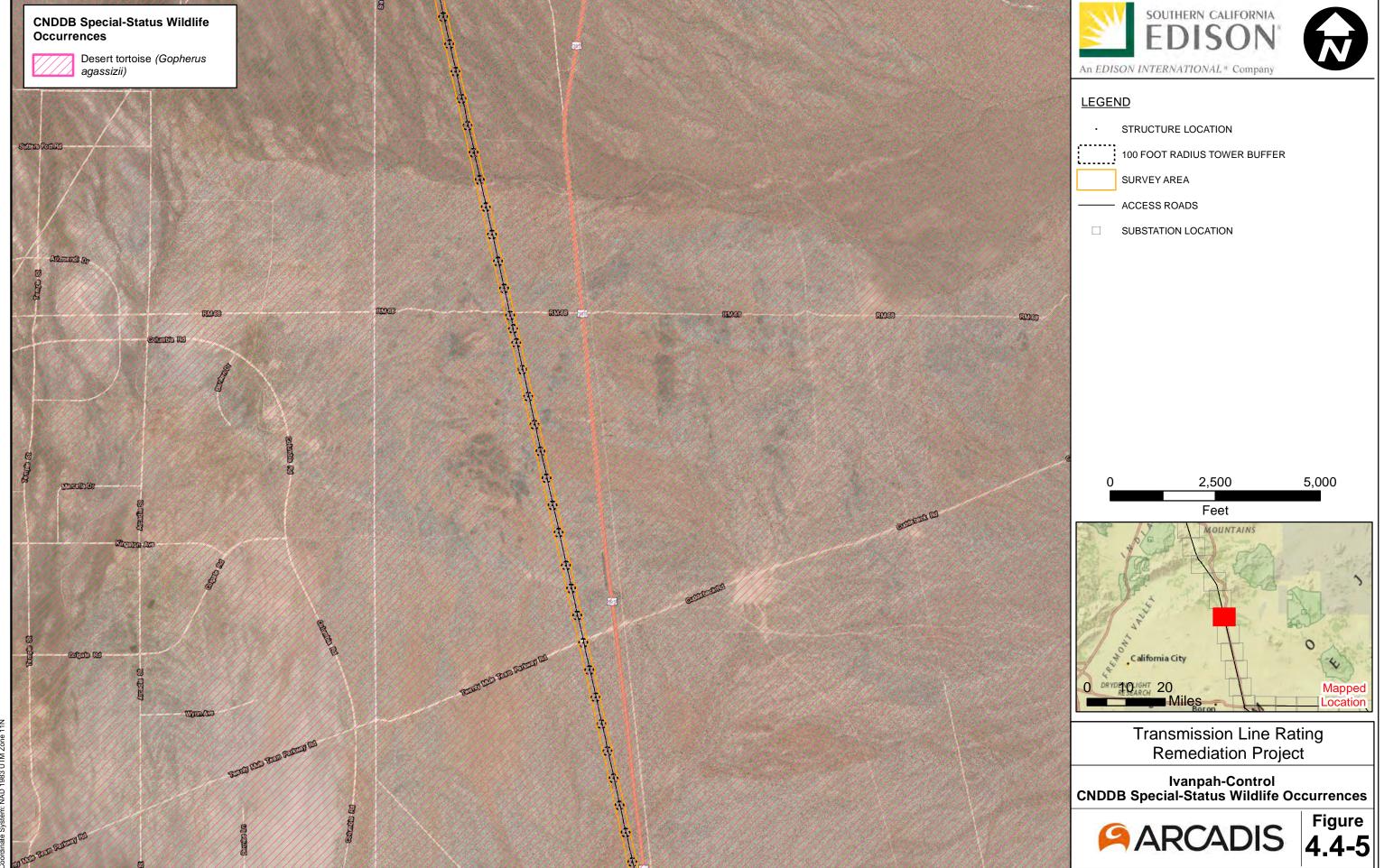


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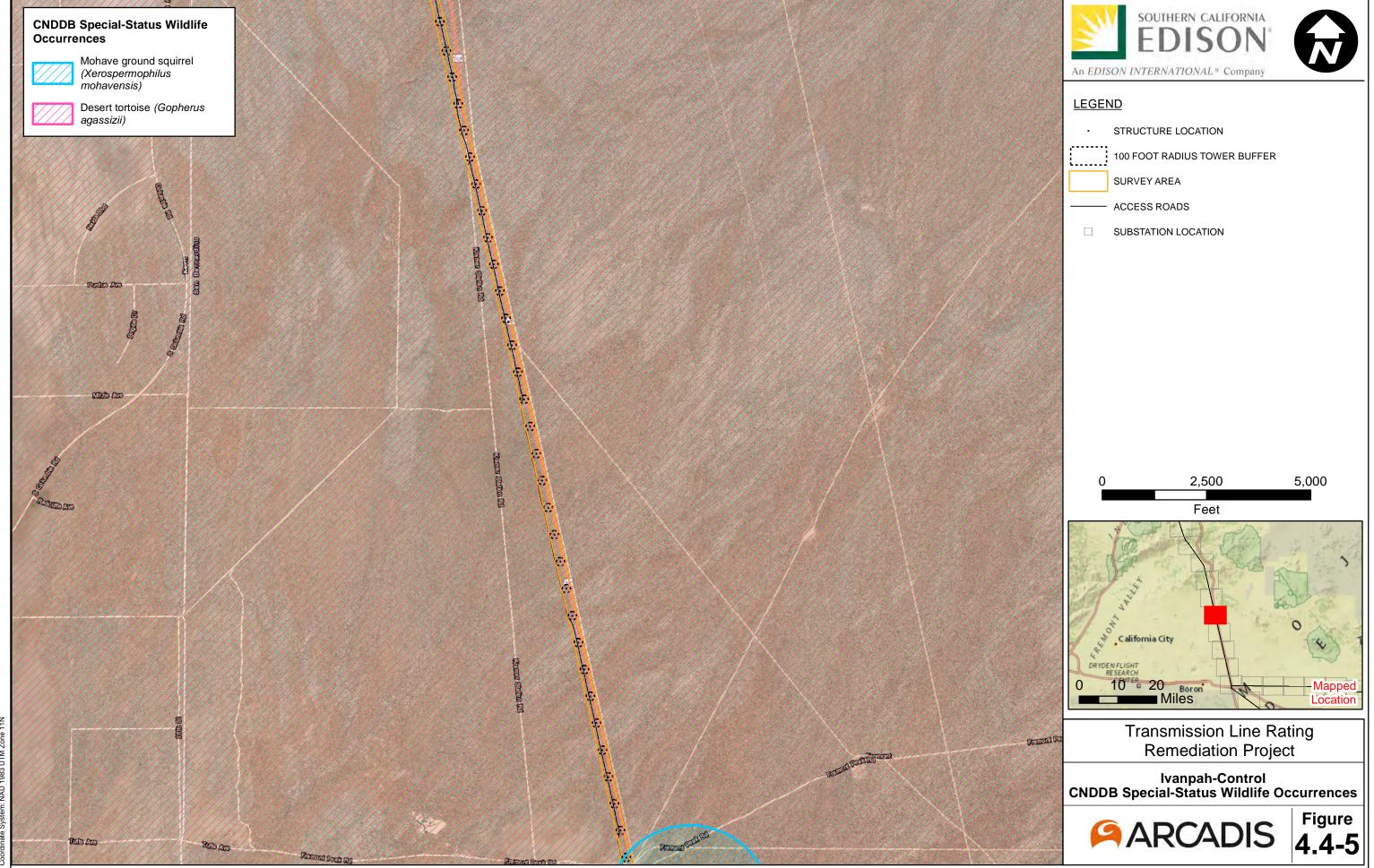




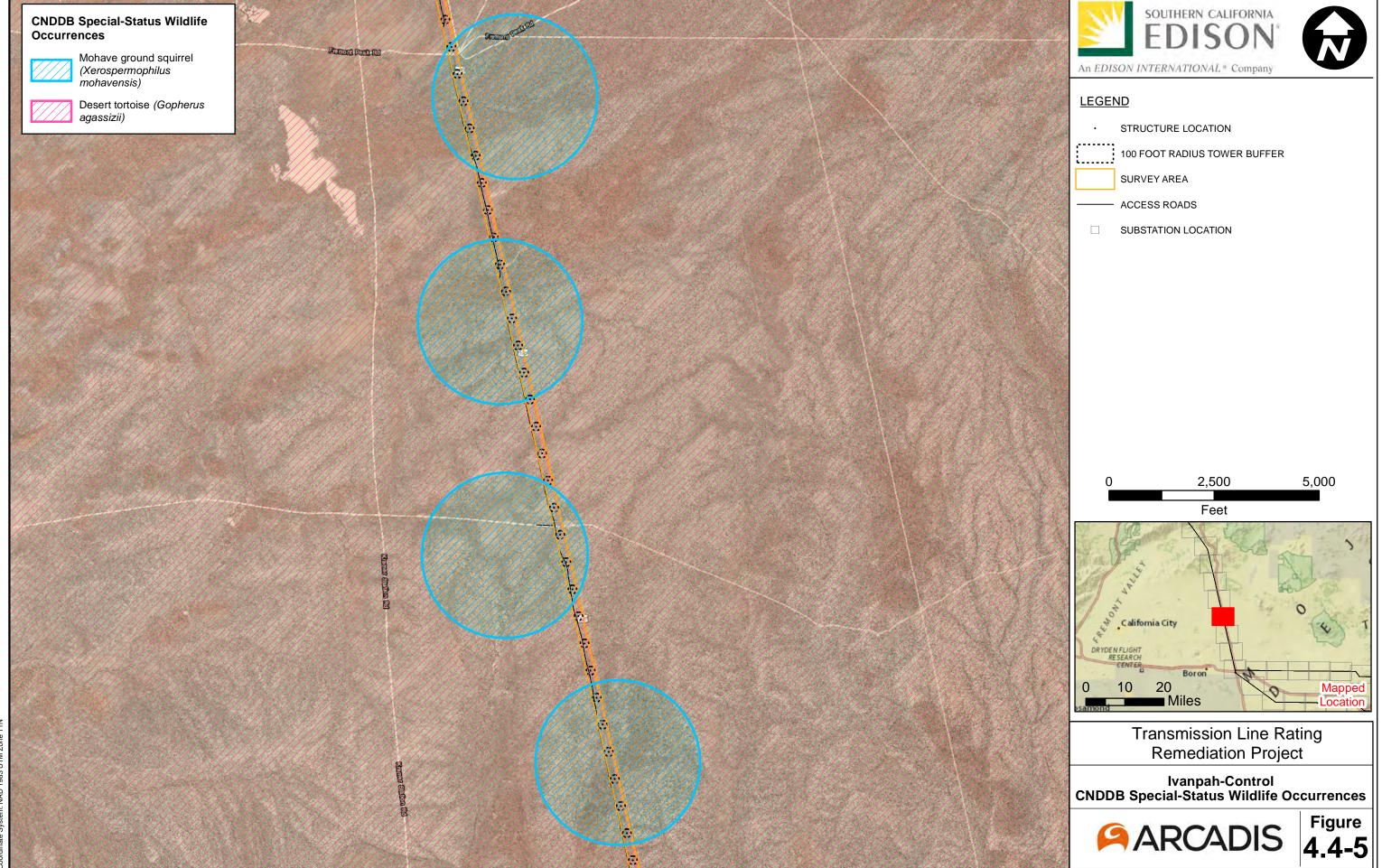
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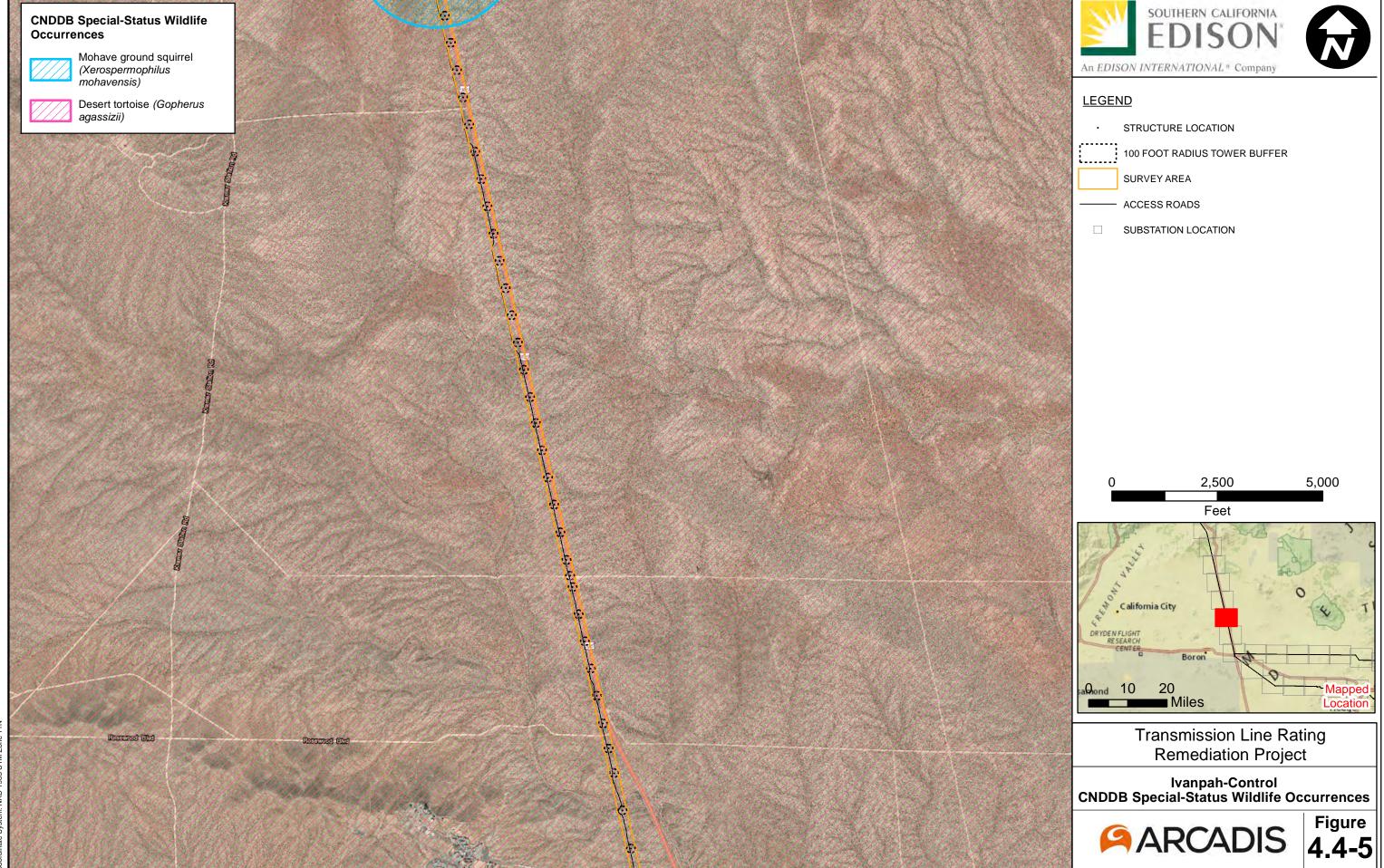
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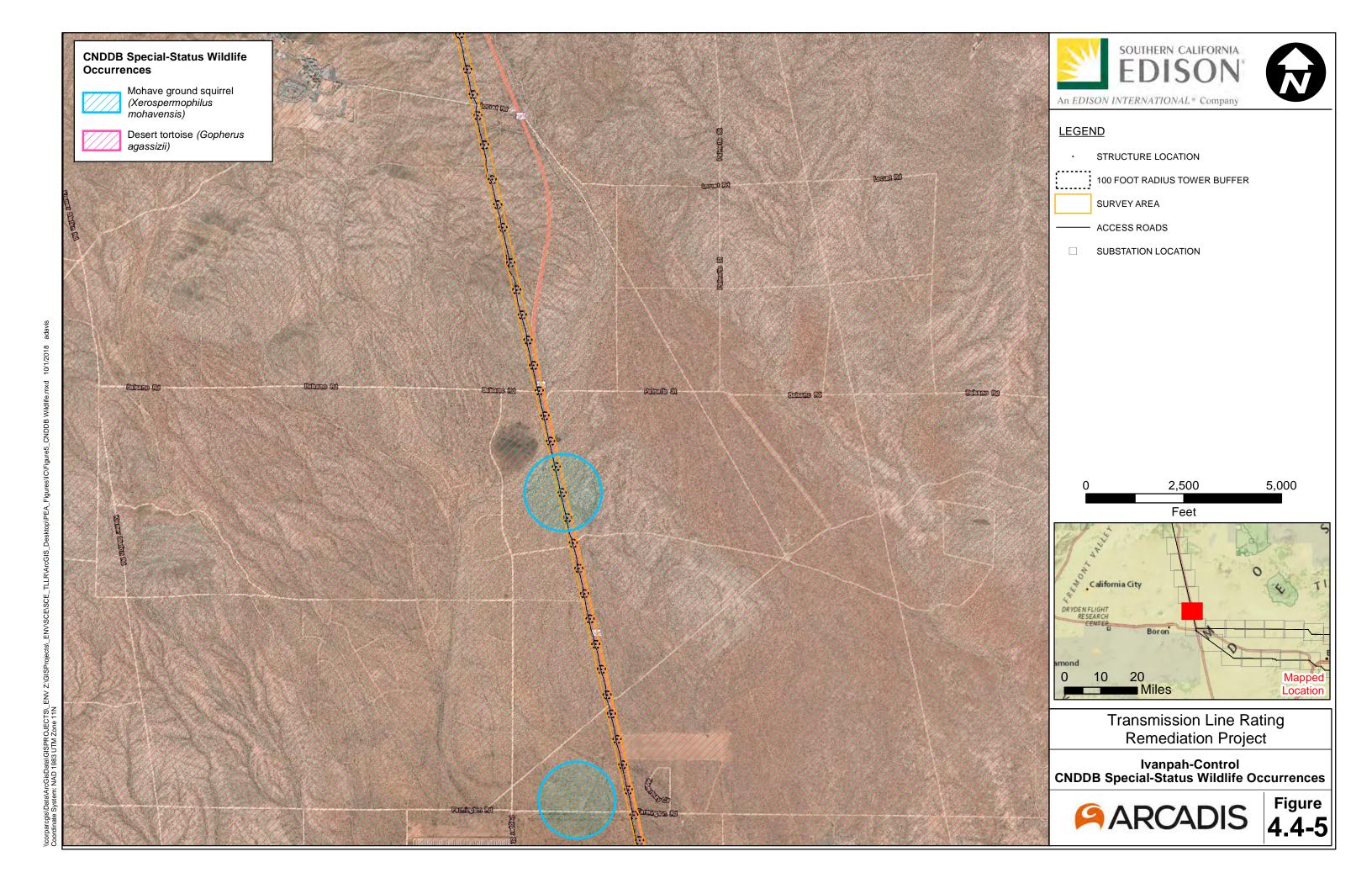
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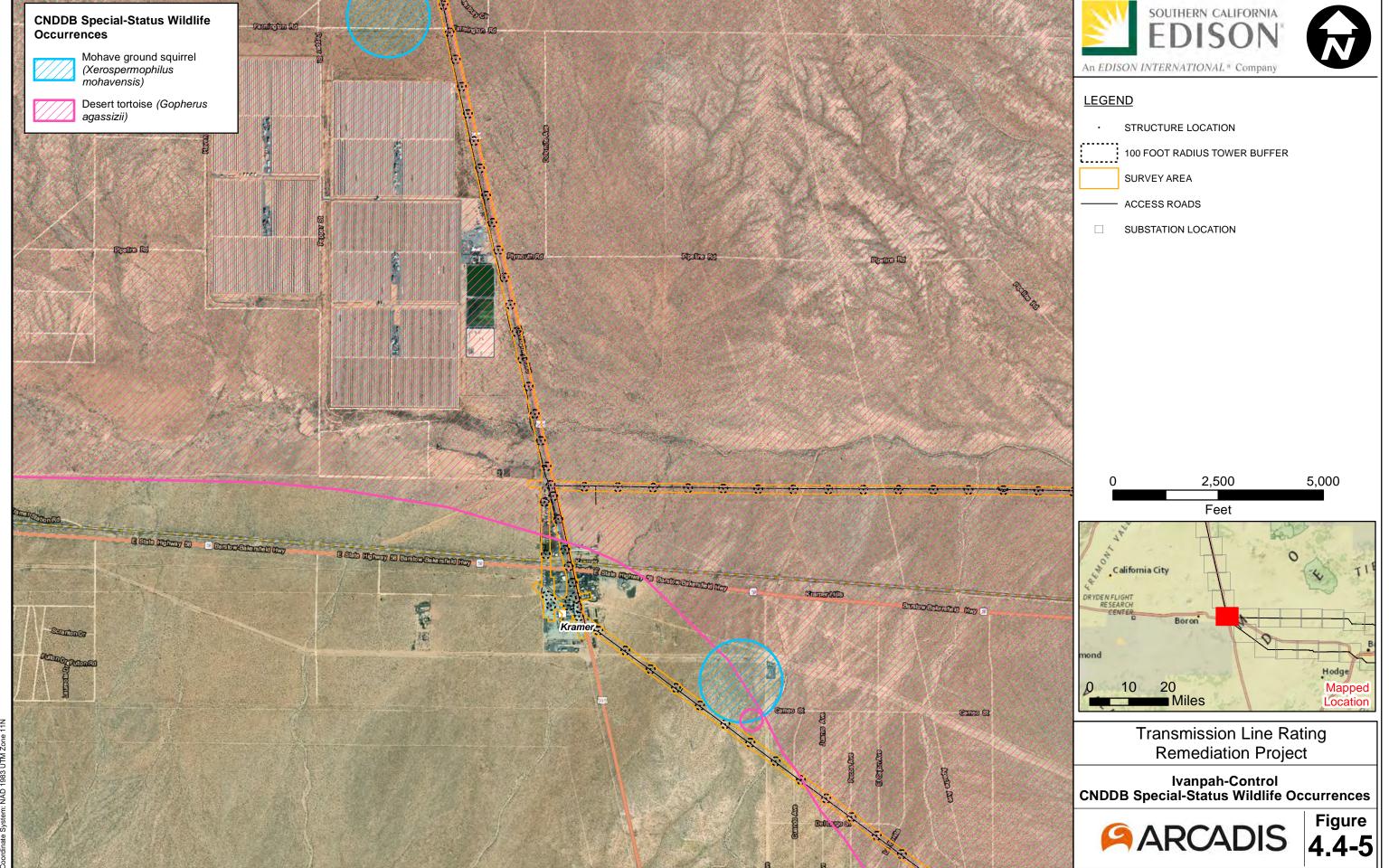


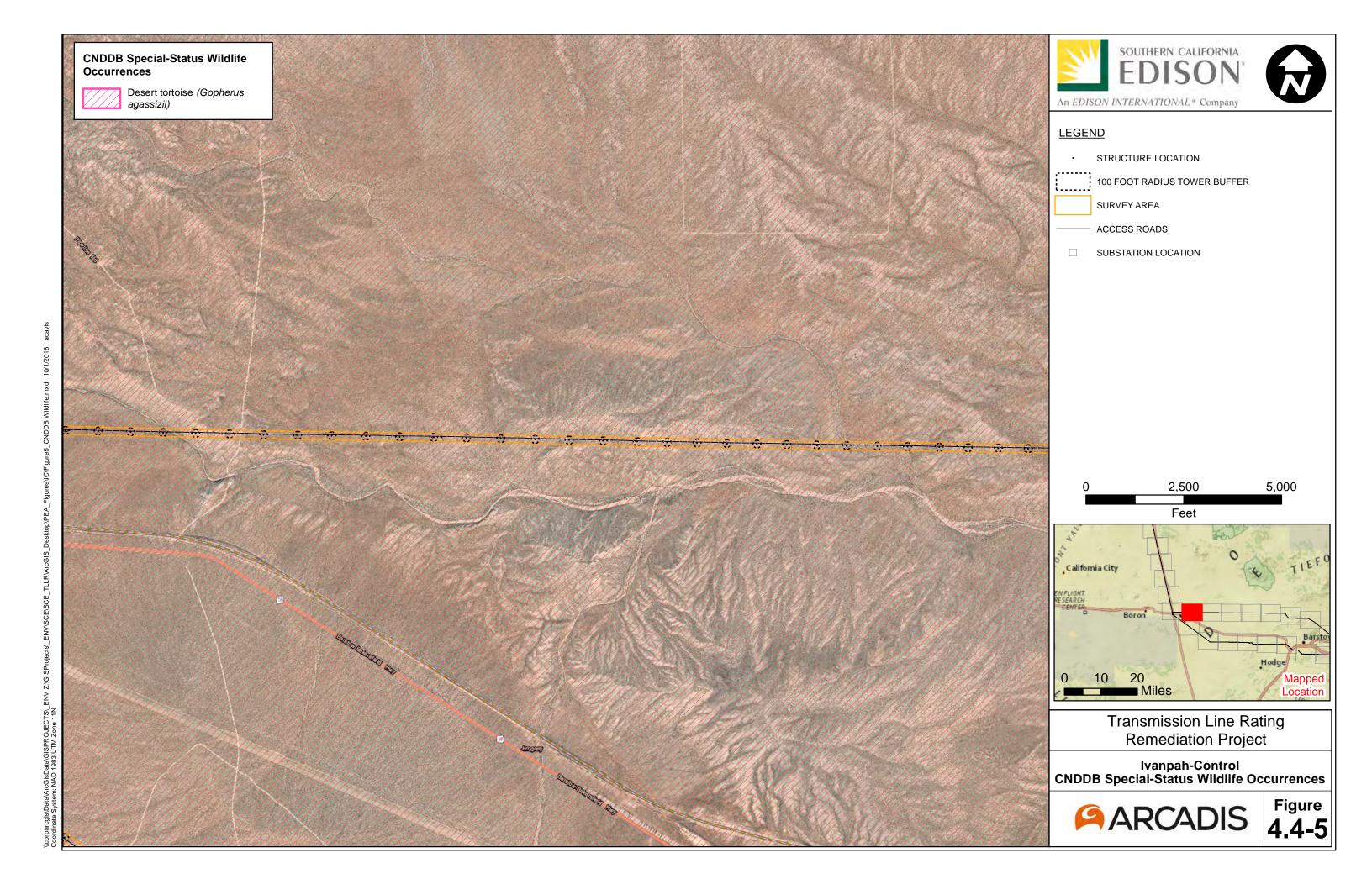
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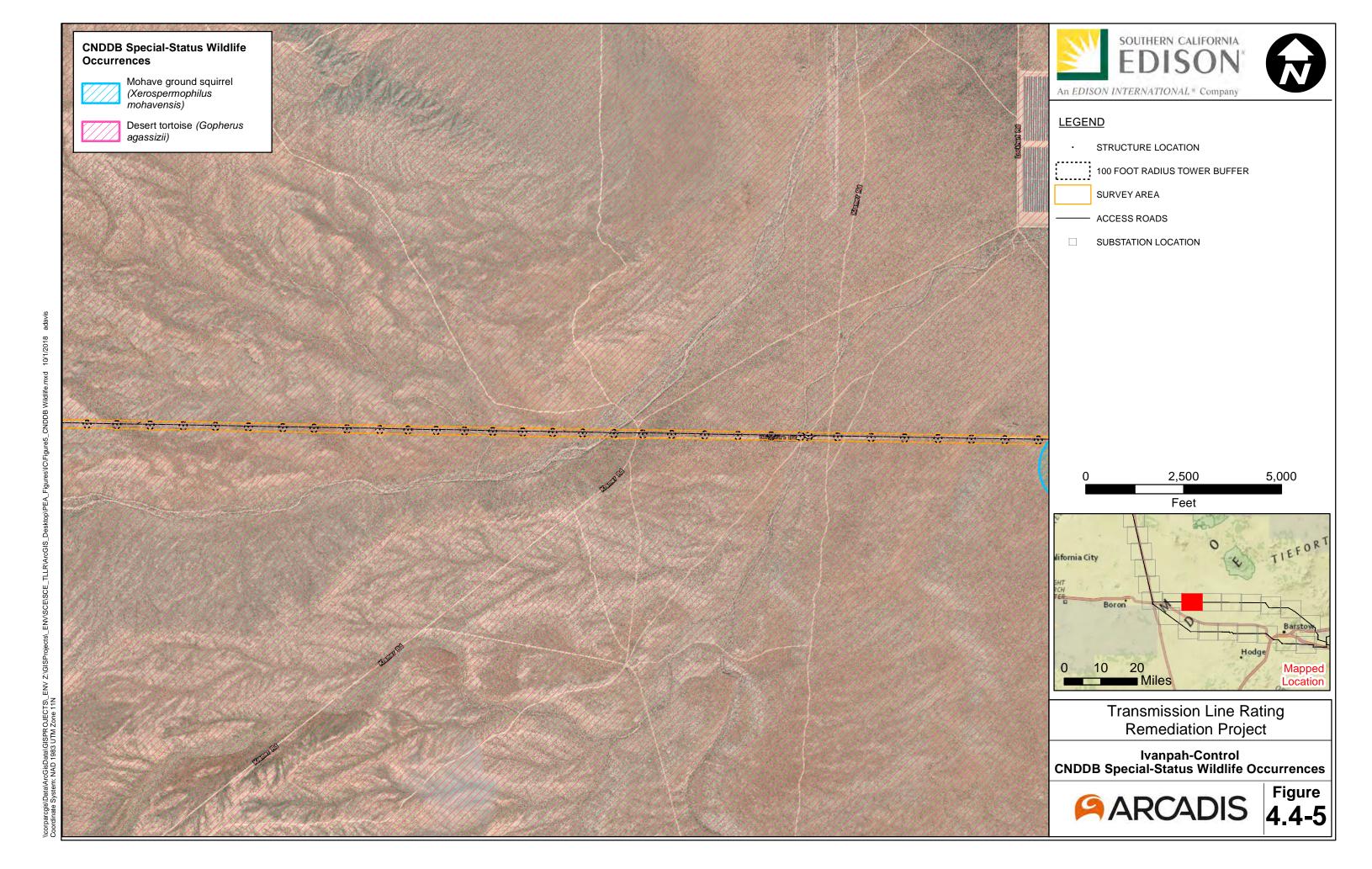


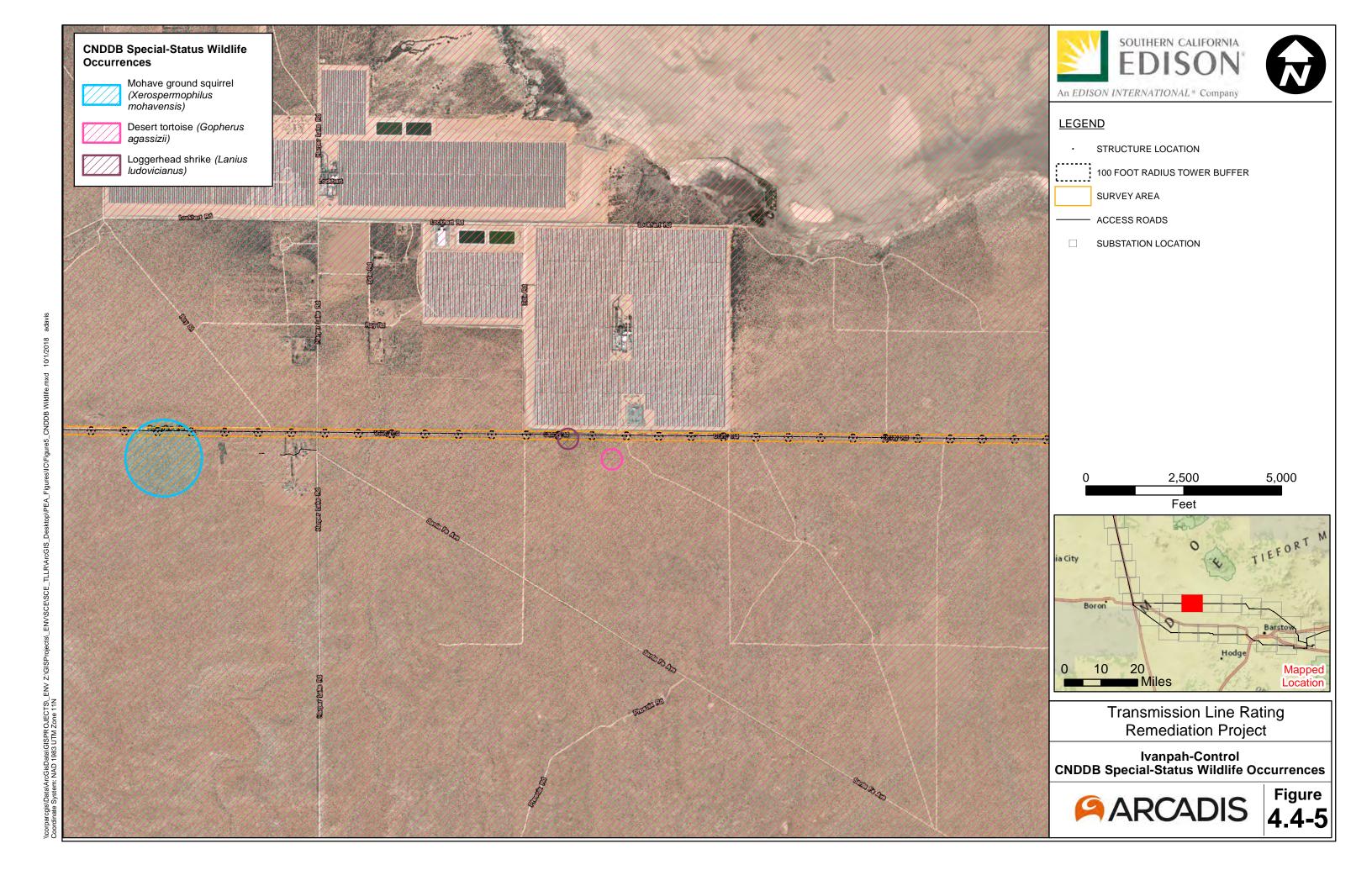
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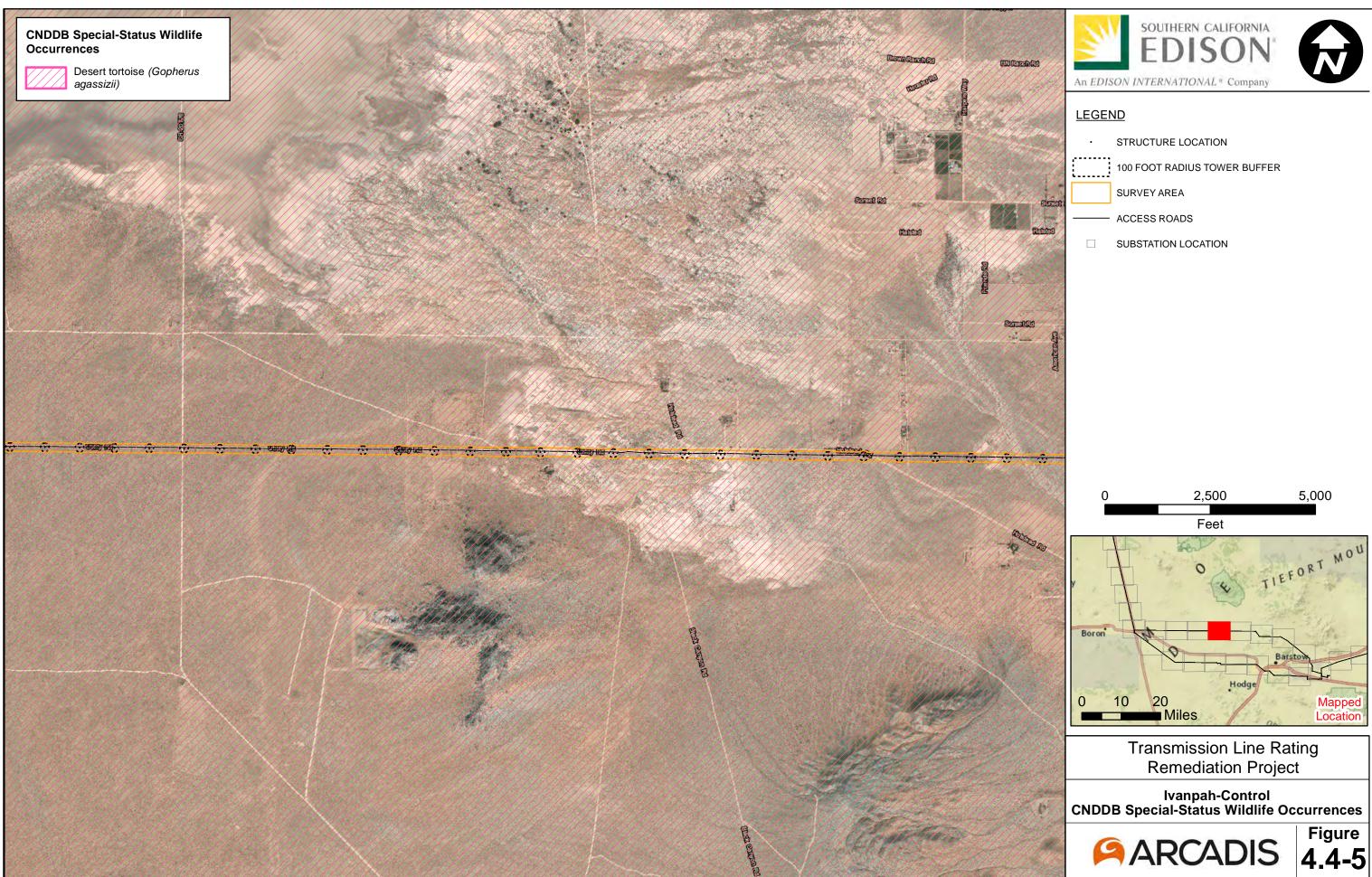


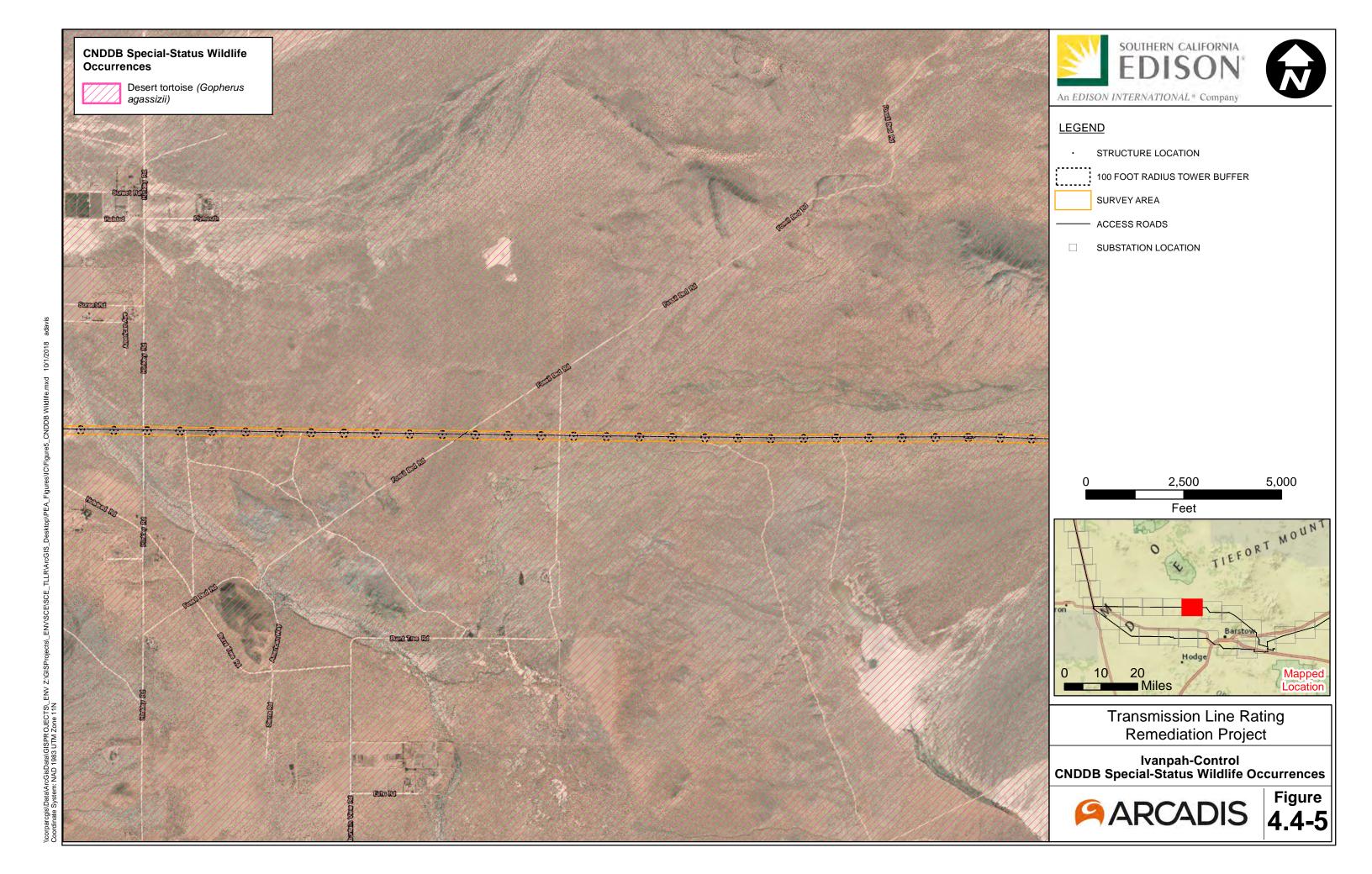


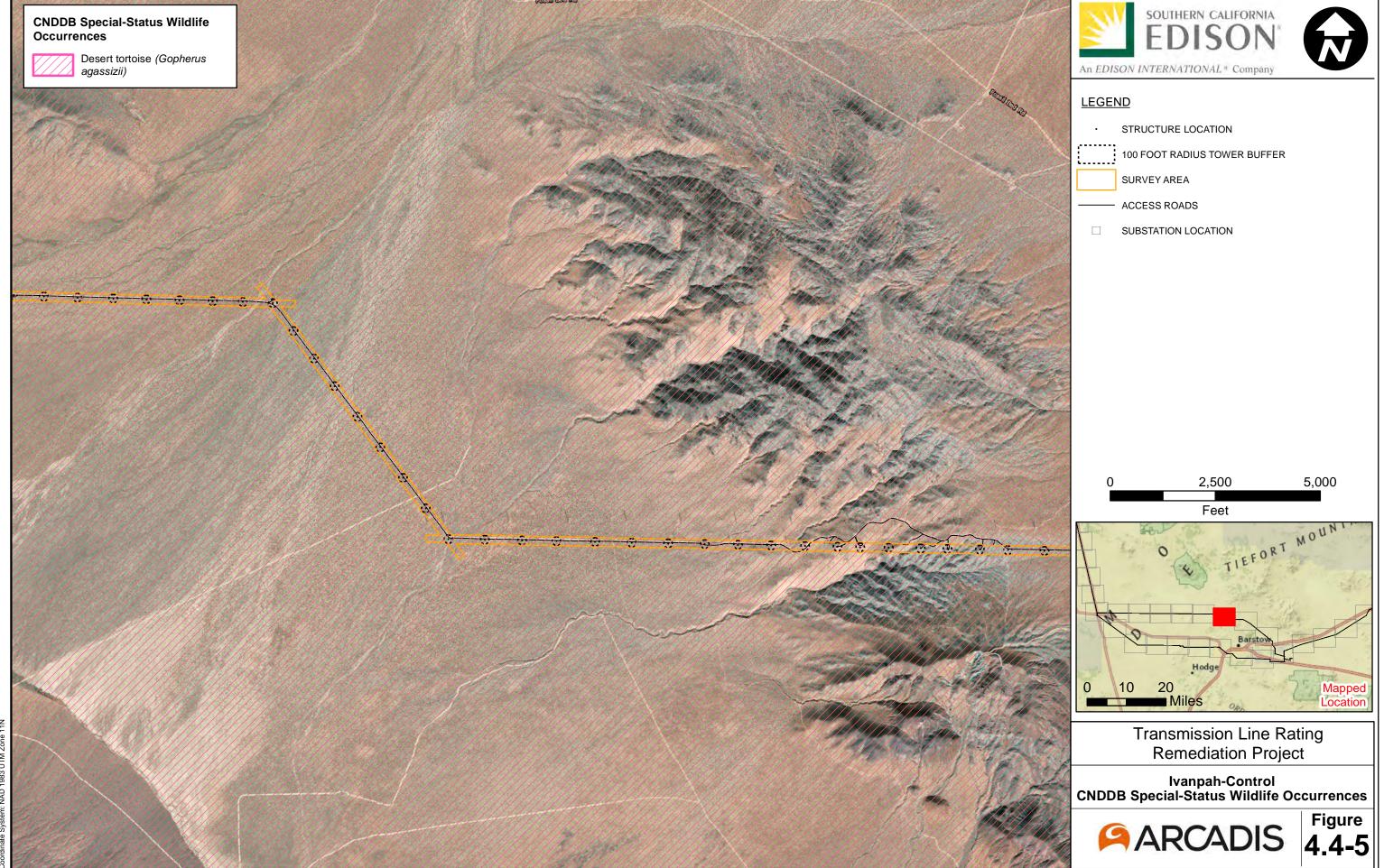






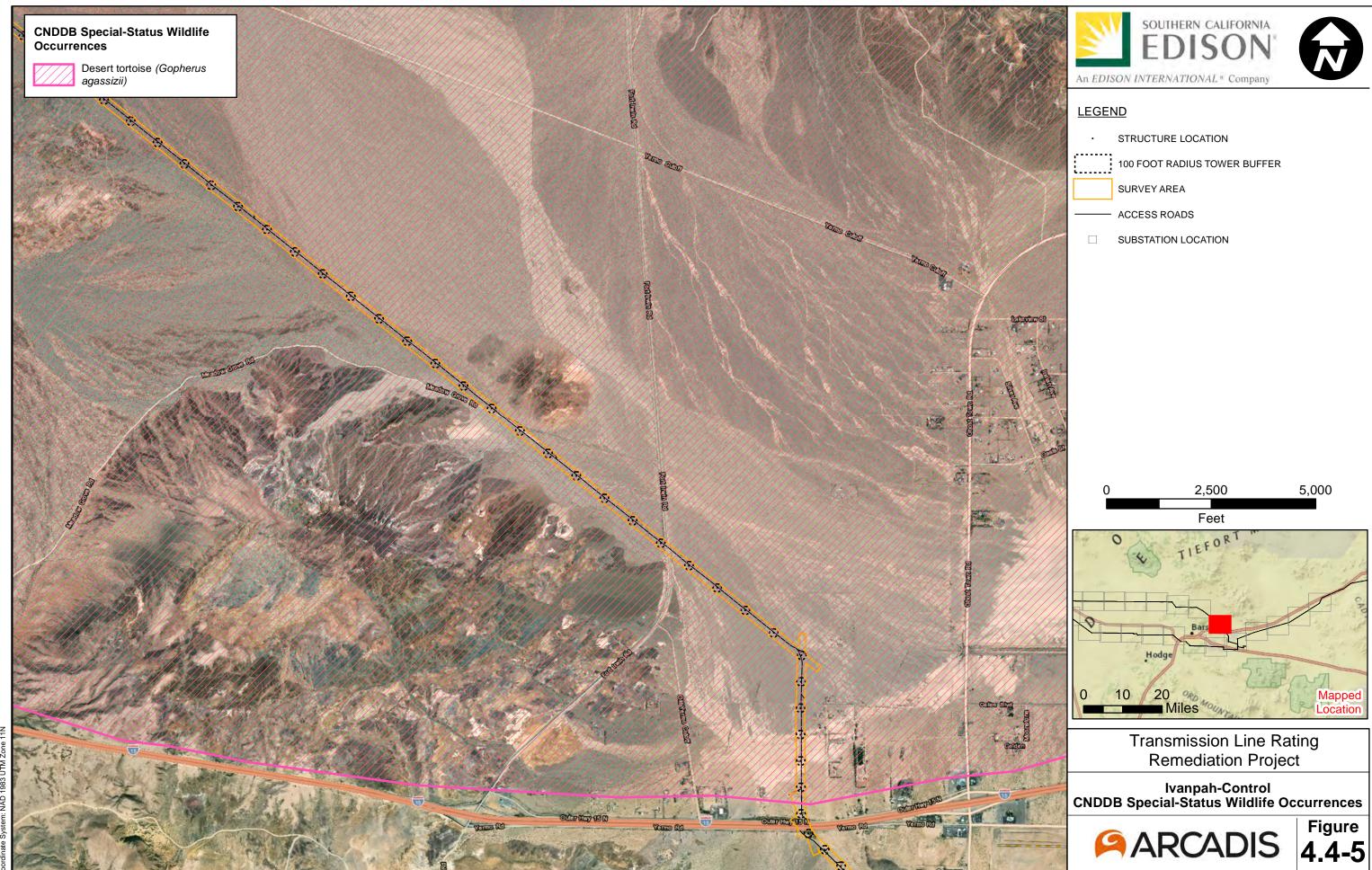




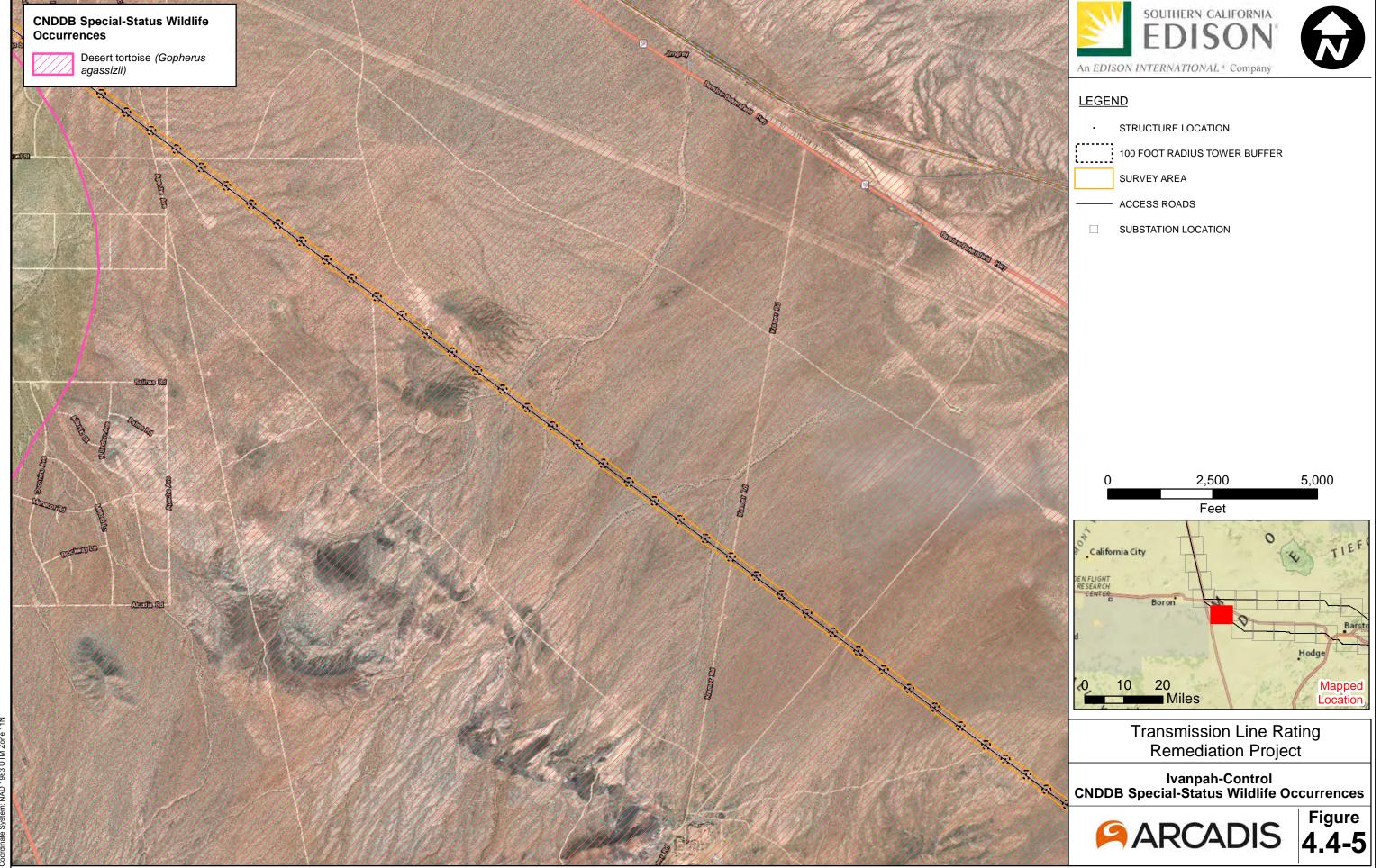


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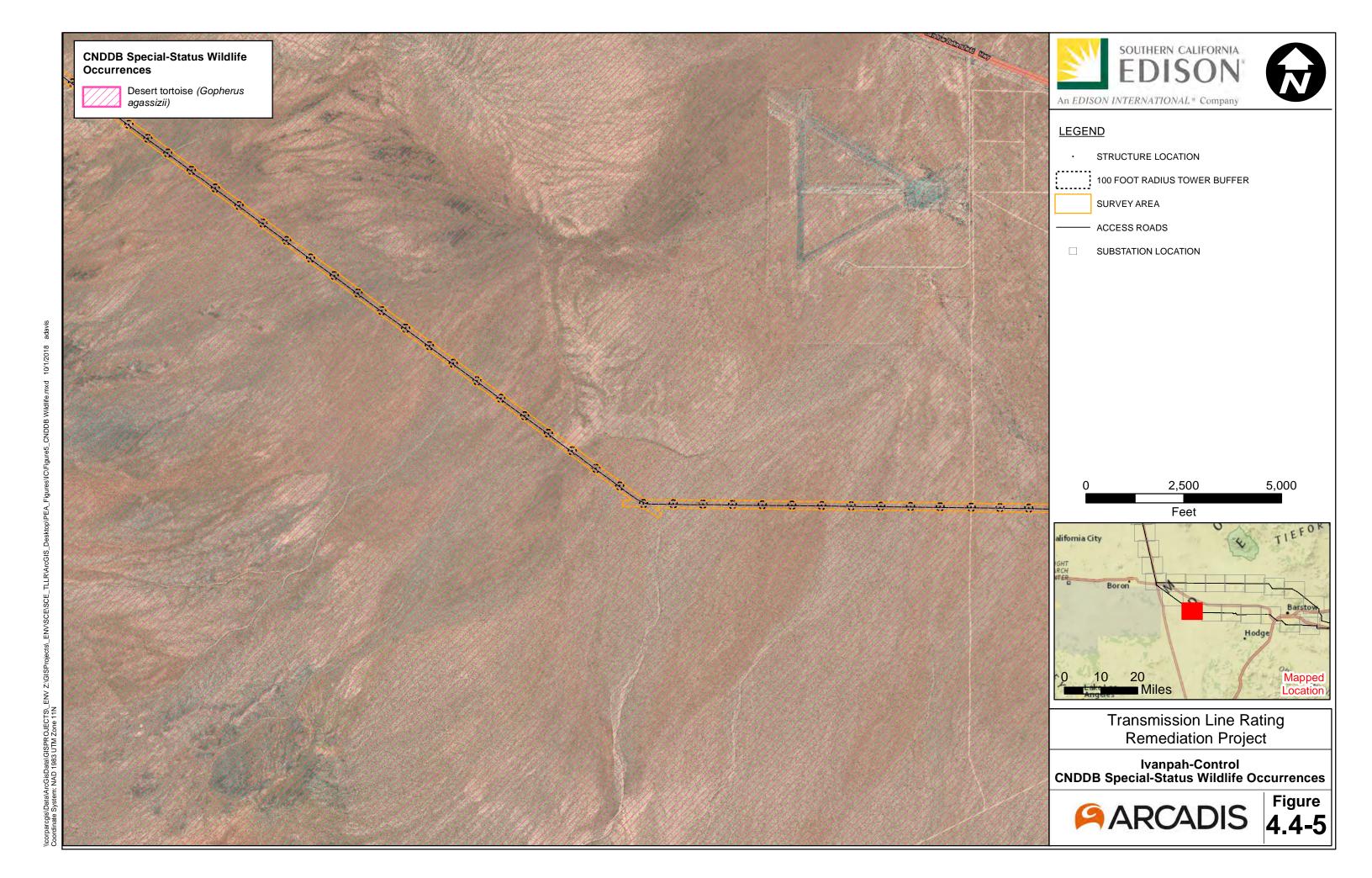


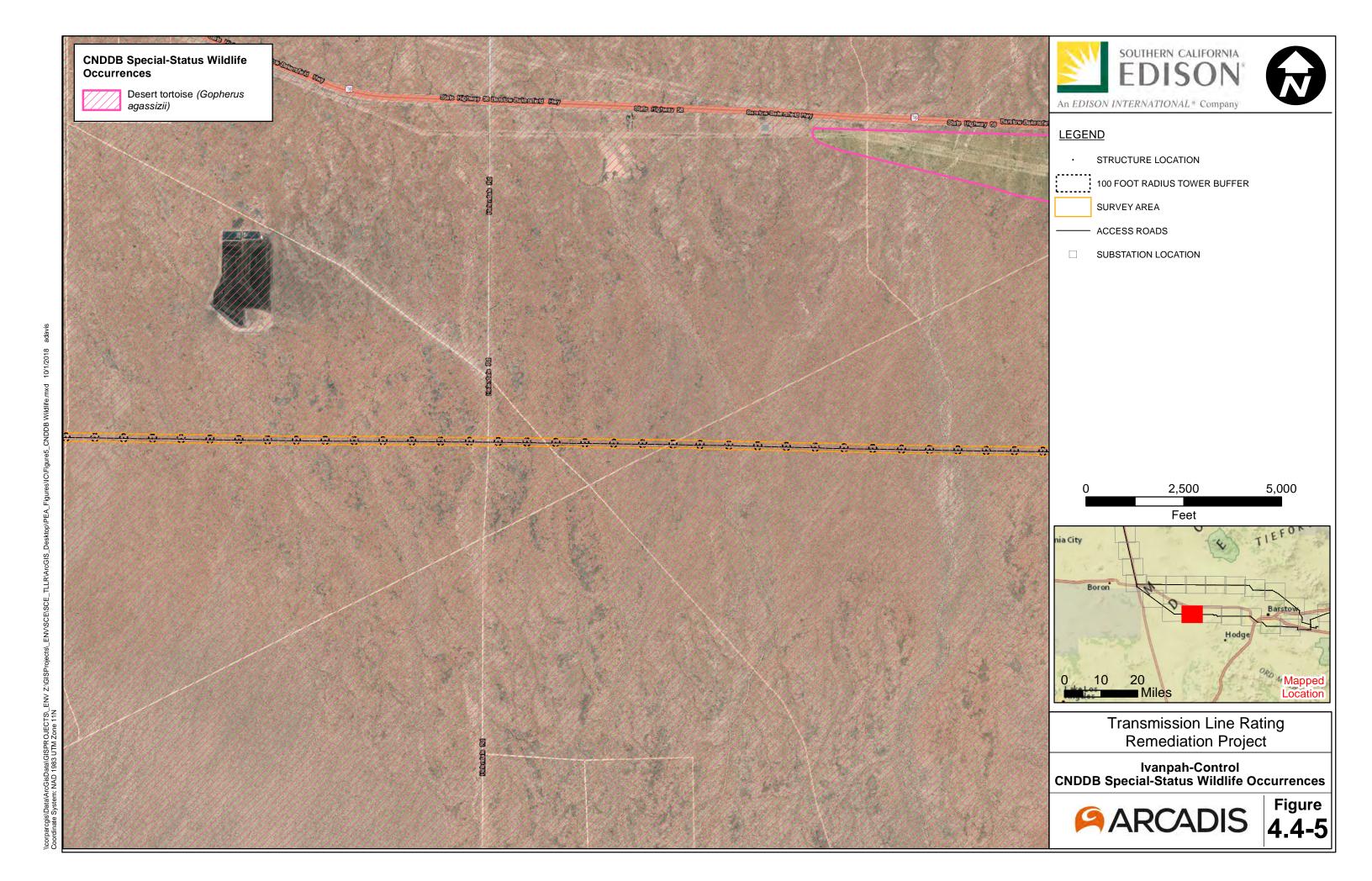


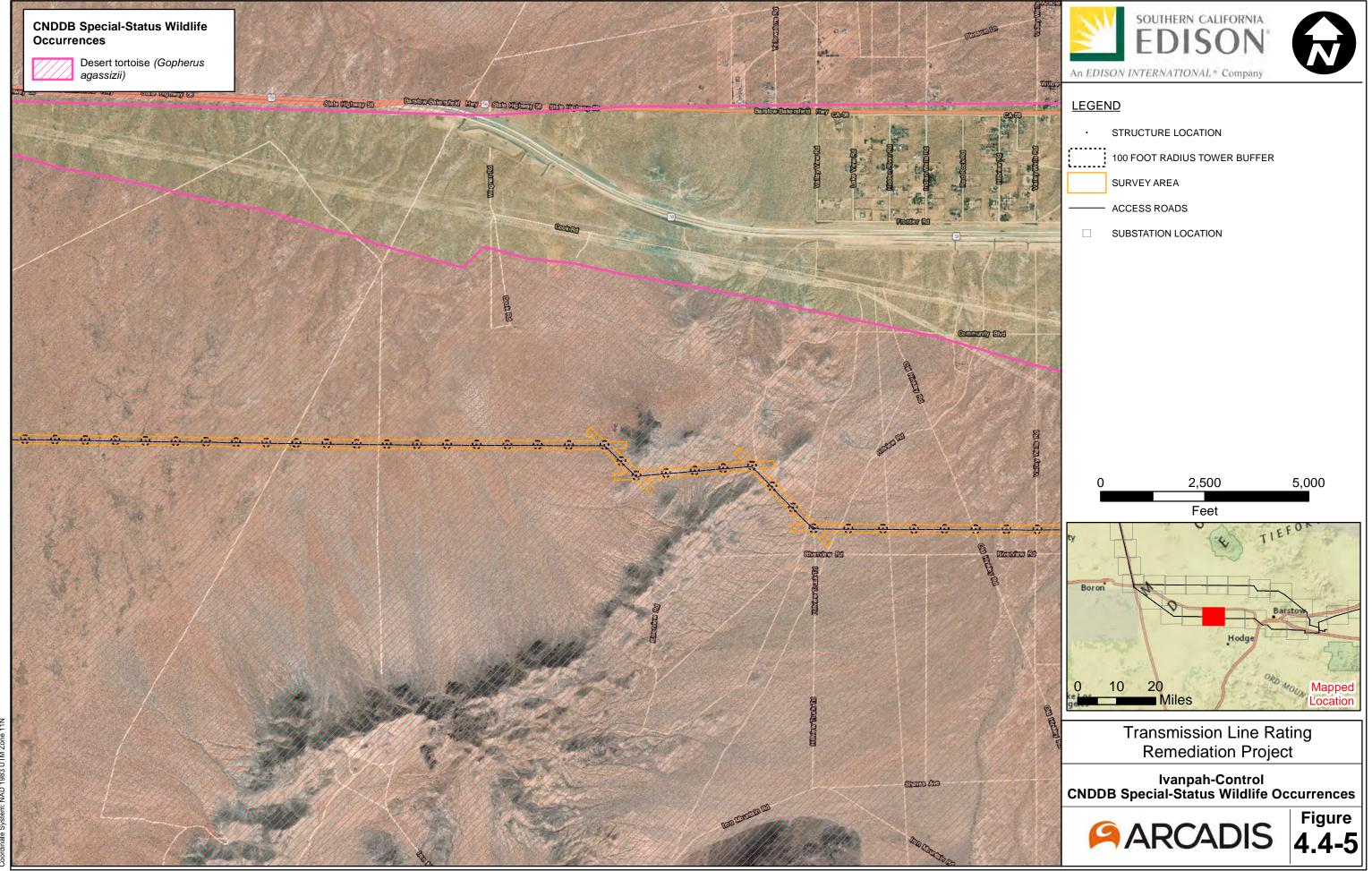
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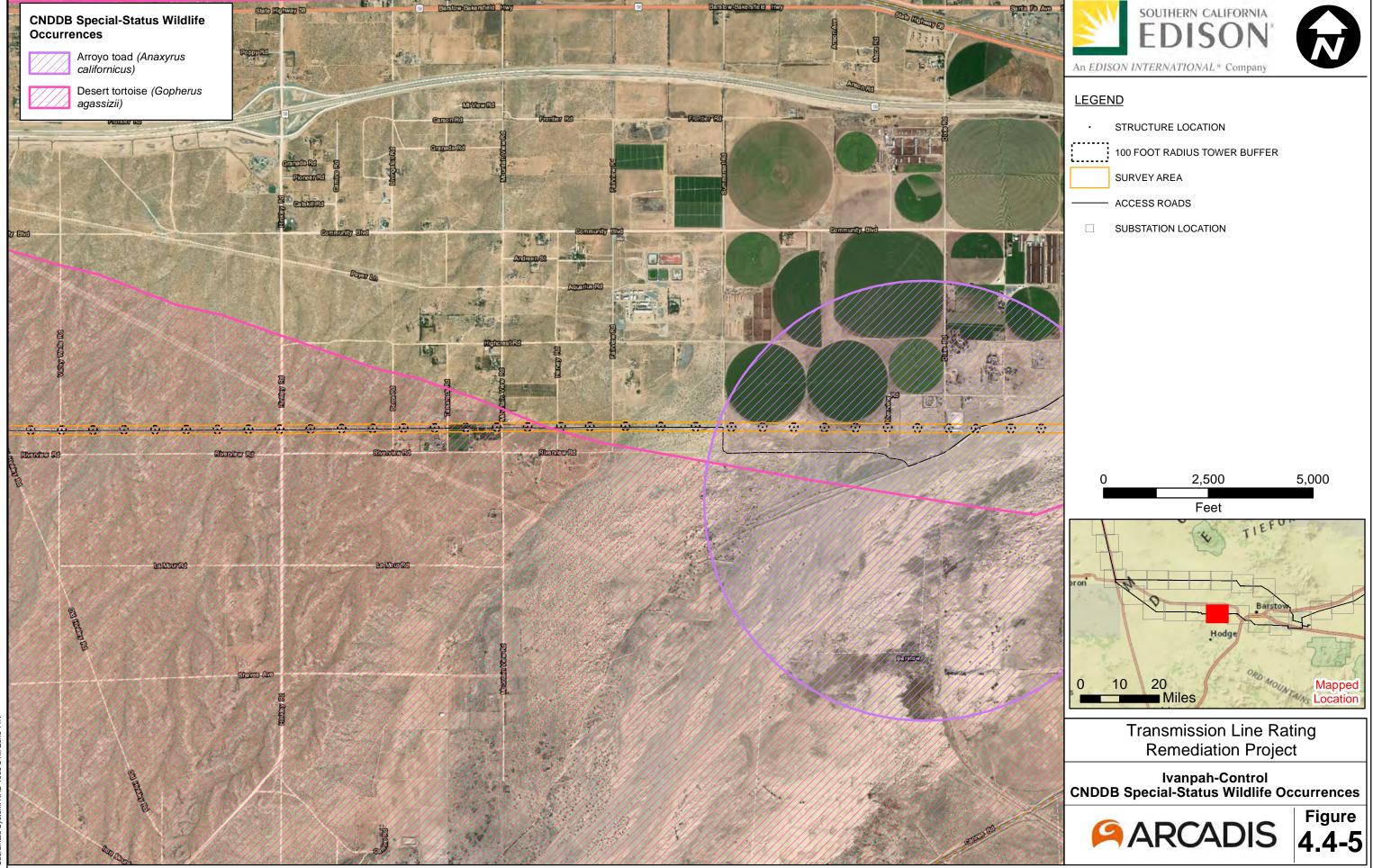
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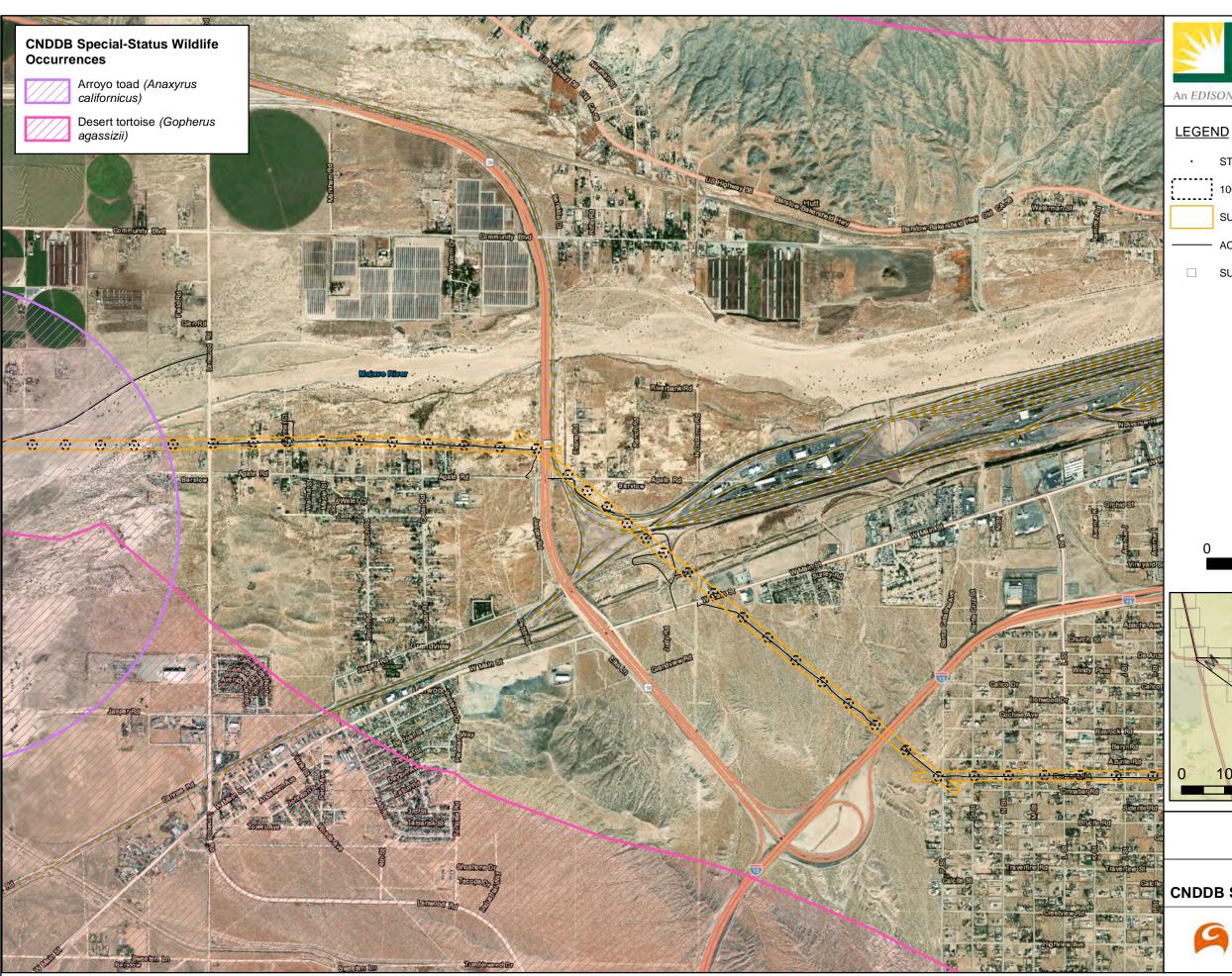




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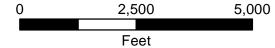
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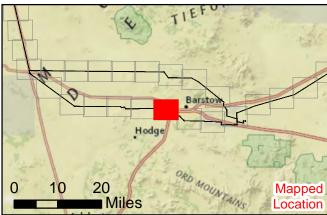
100 FOOT RADIUS TOWER BUFFER

SURVEY AREA

ACCESS ROADS

SUBSTATION LOCATION

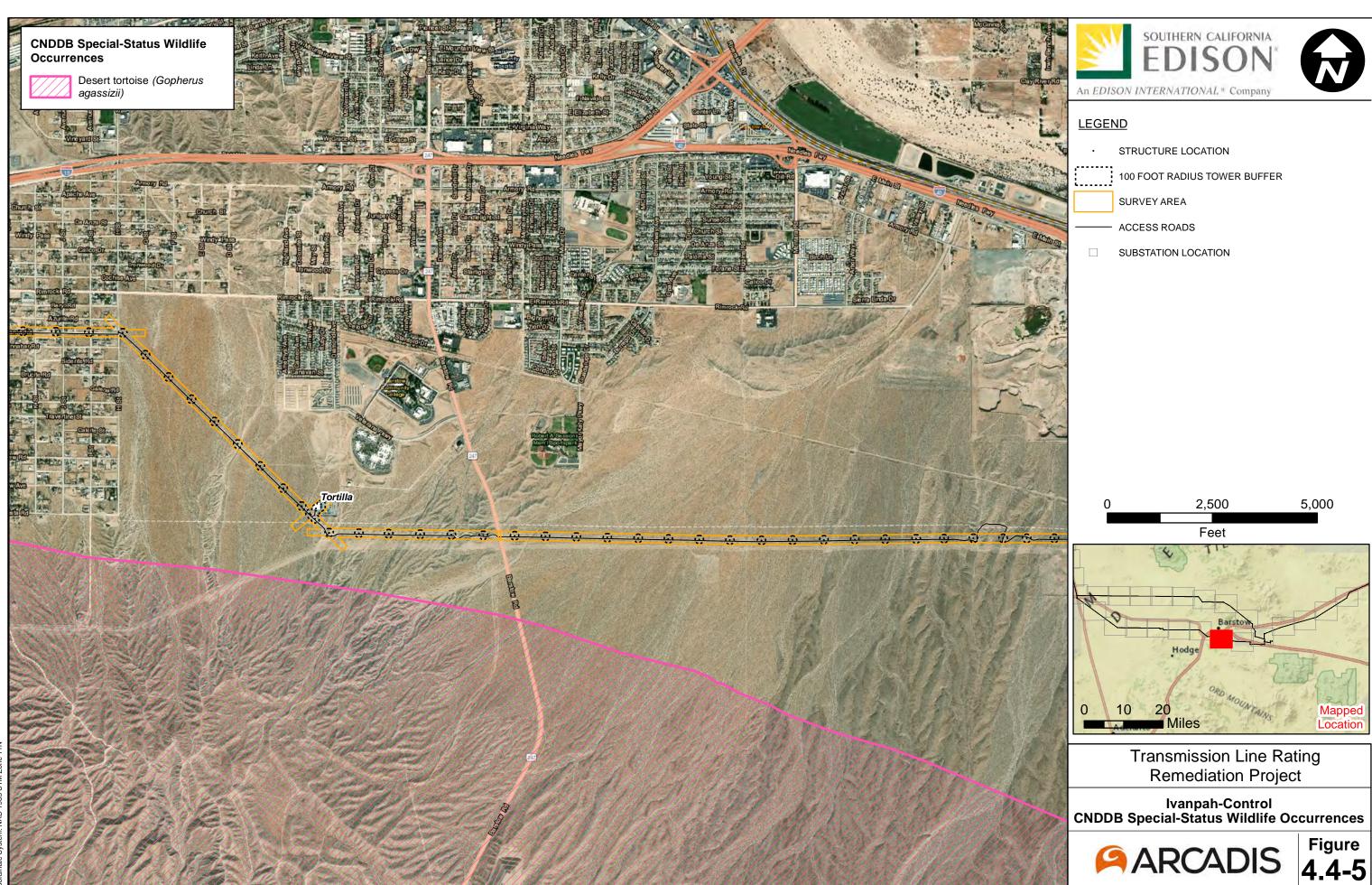


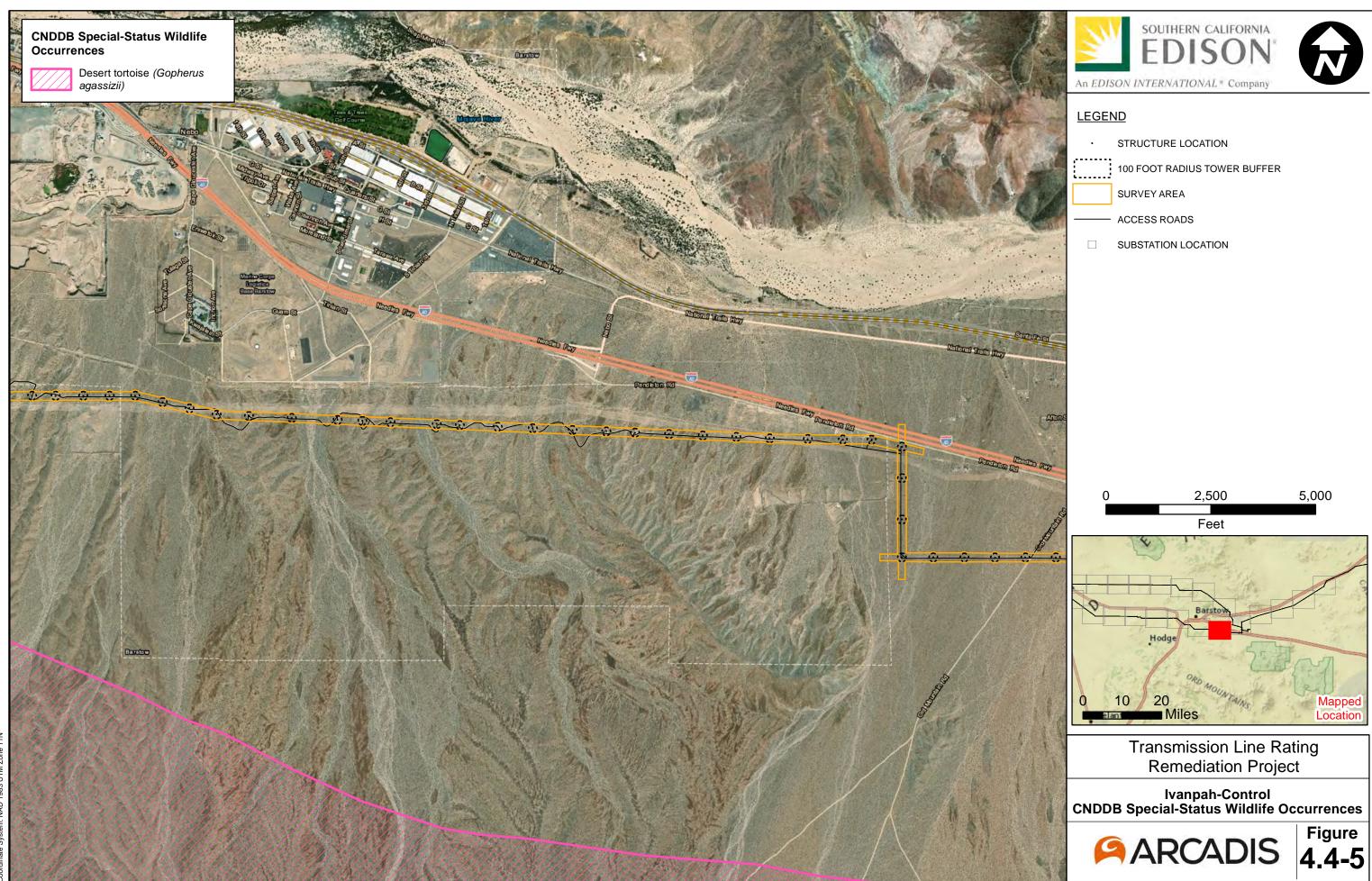


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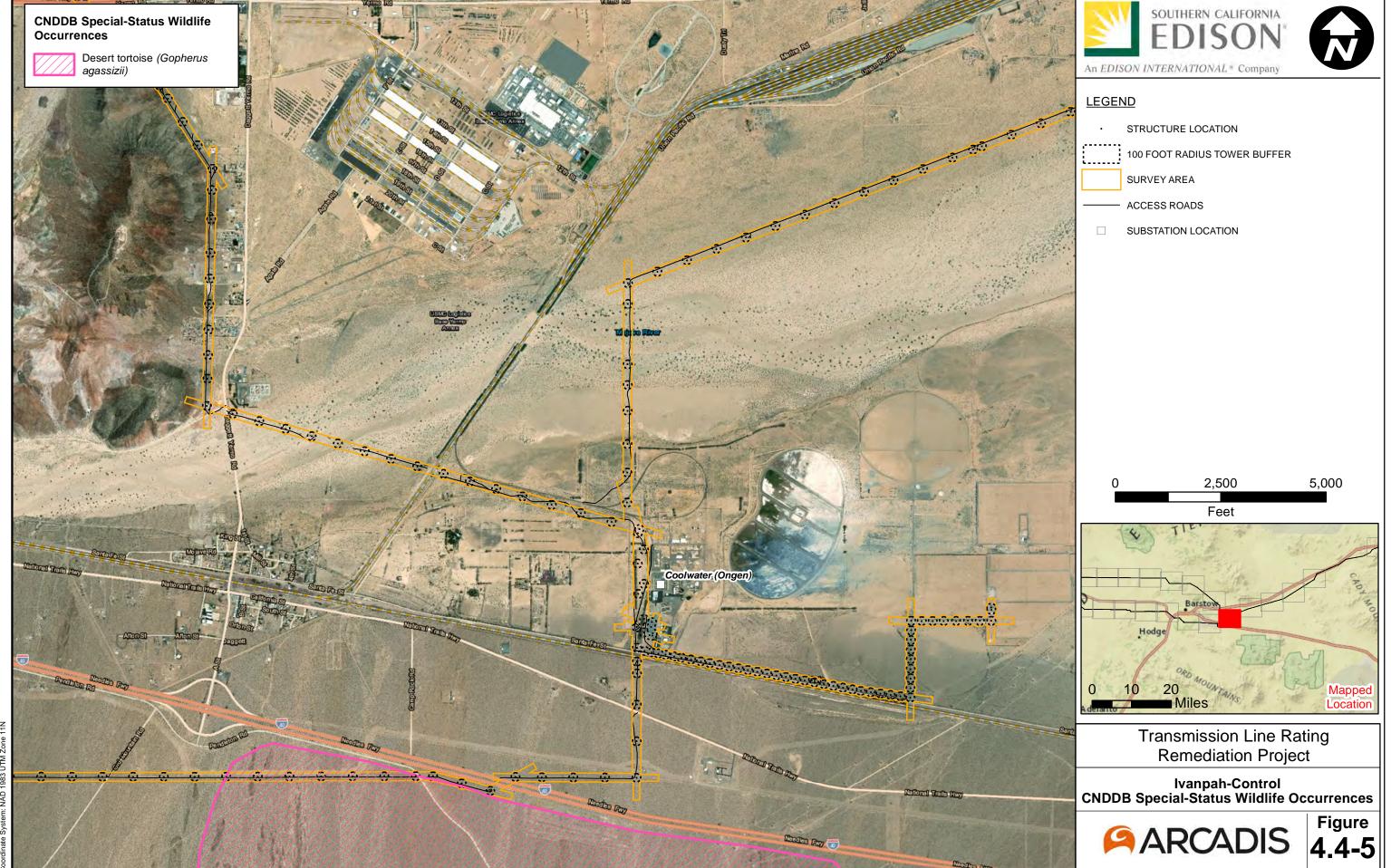
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CNDDB Special-Status Wildlife Occurrences

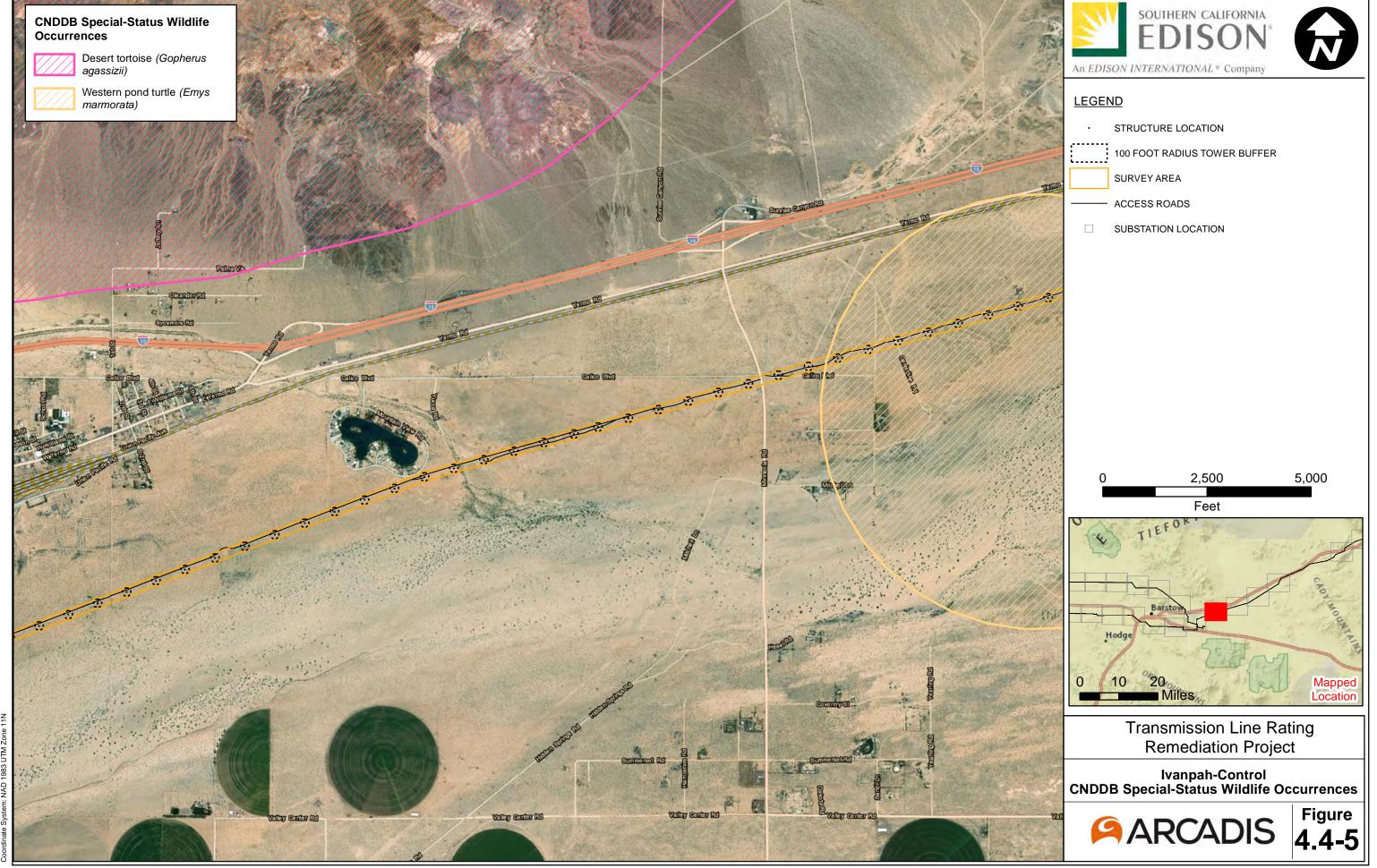




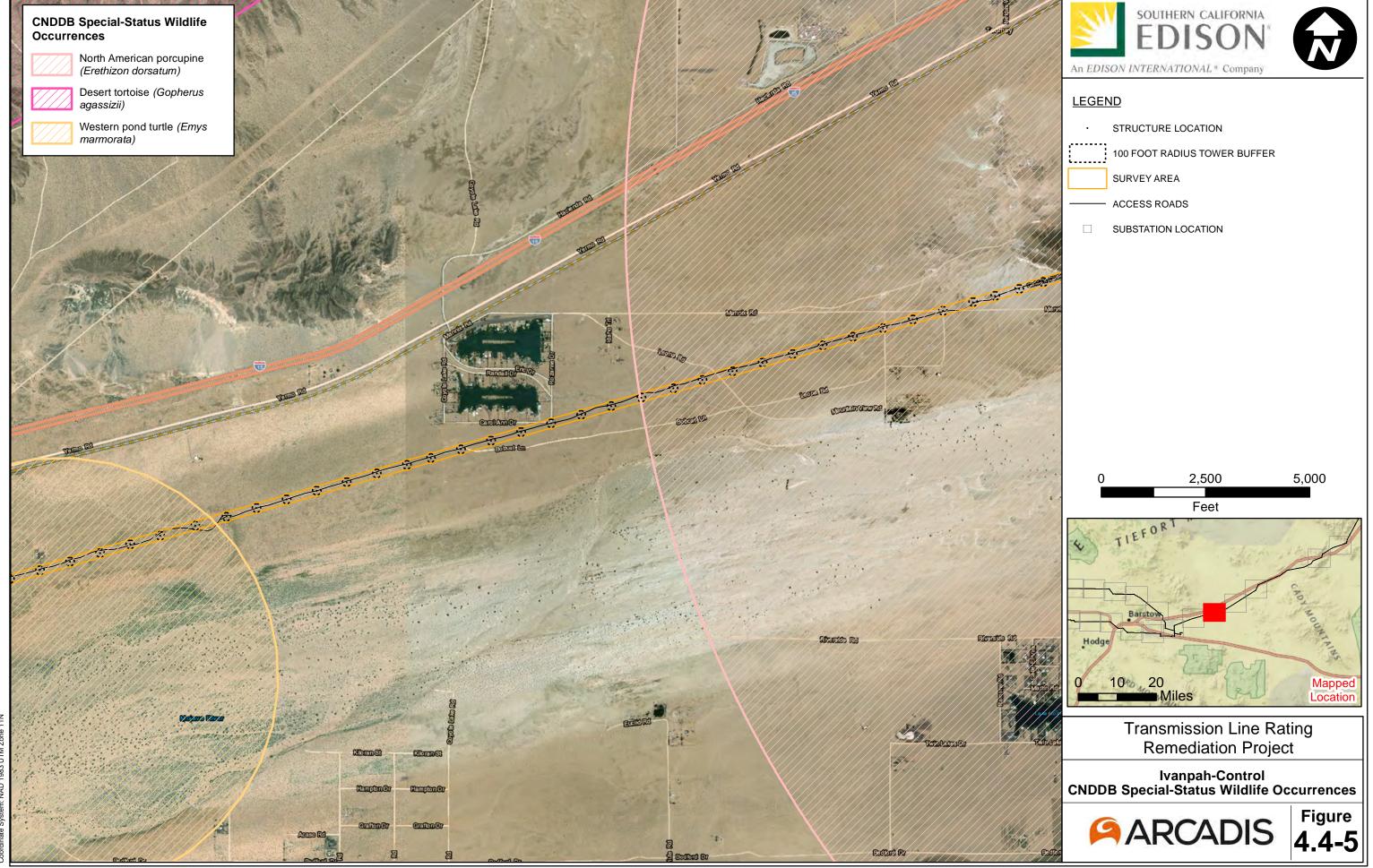


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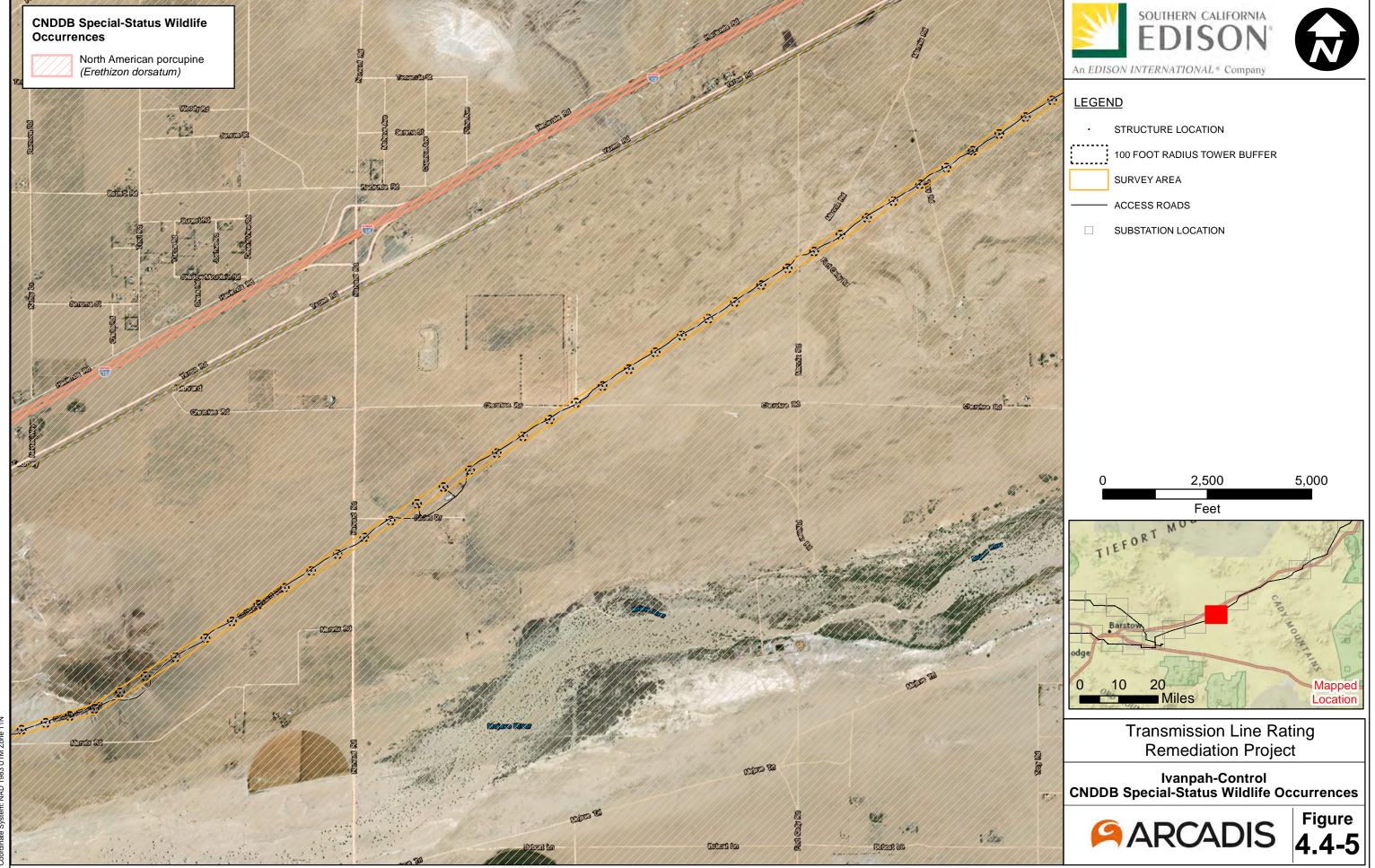




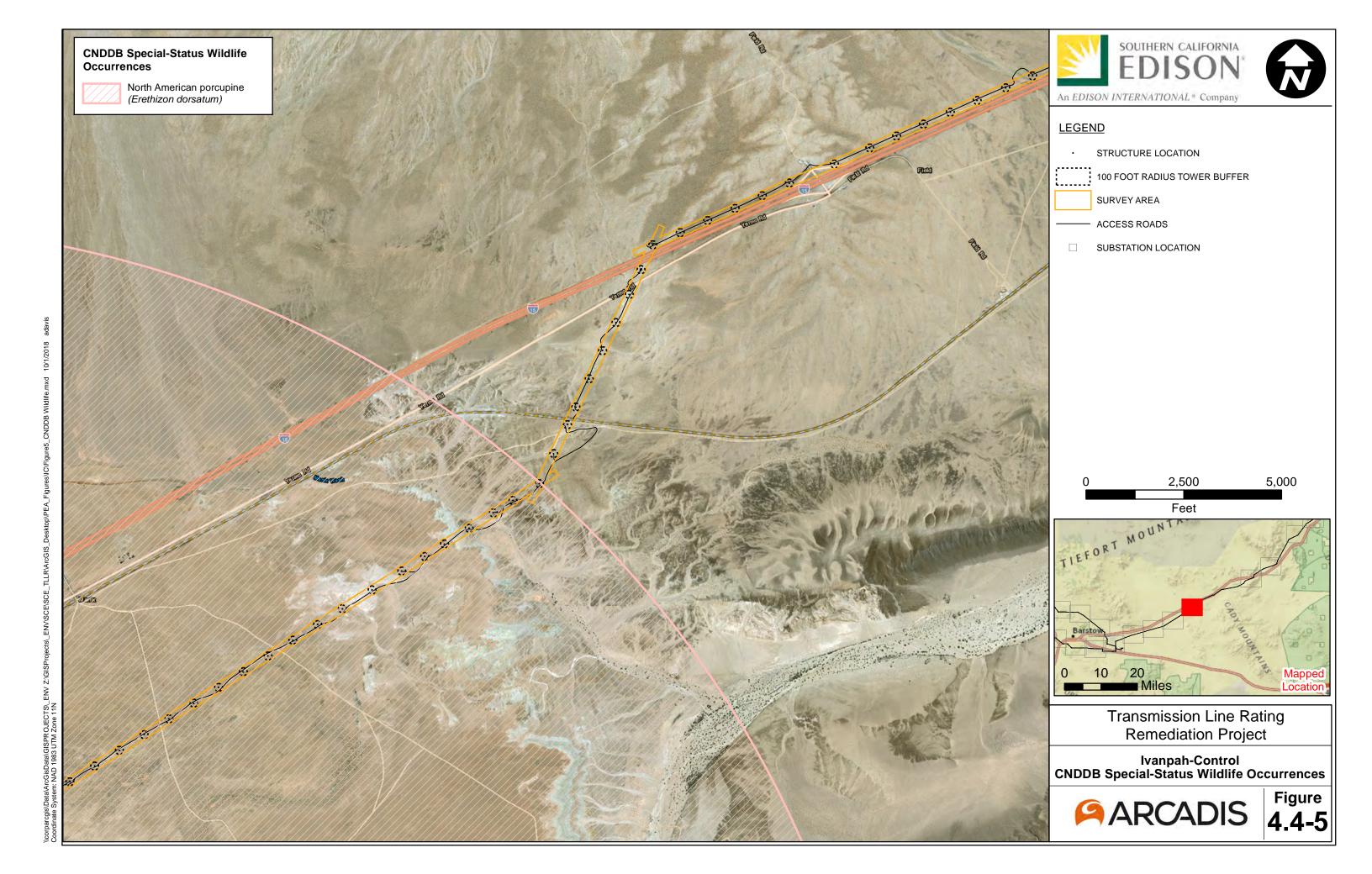
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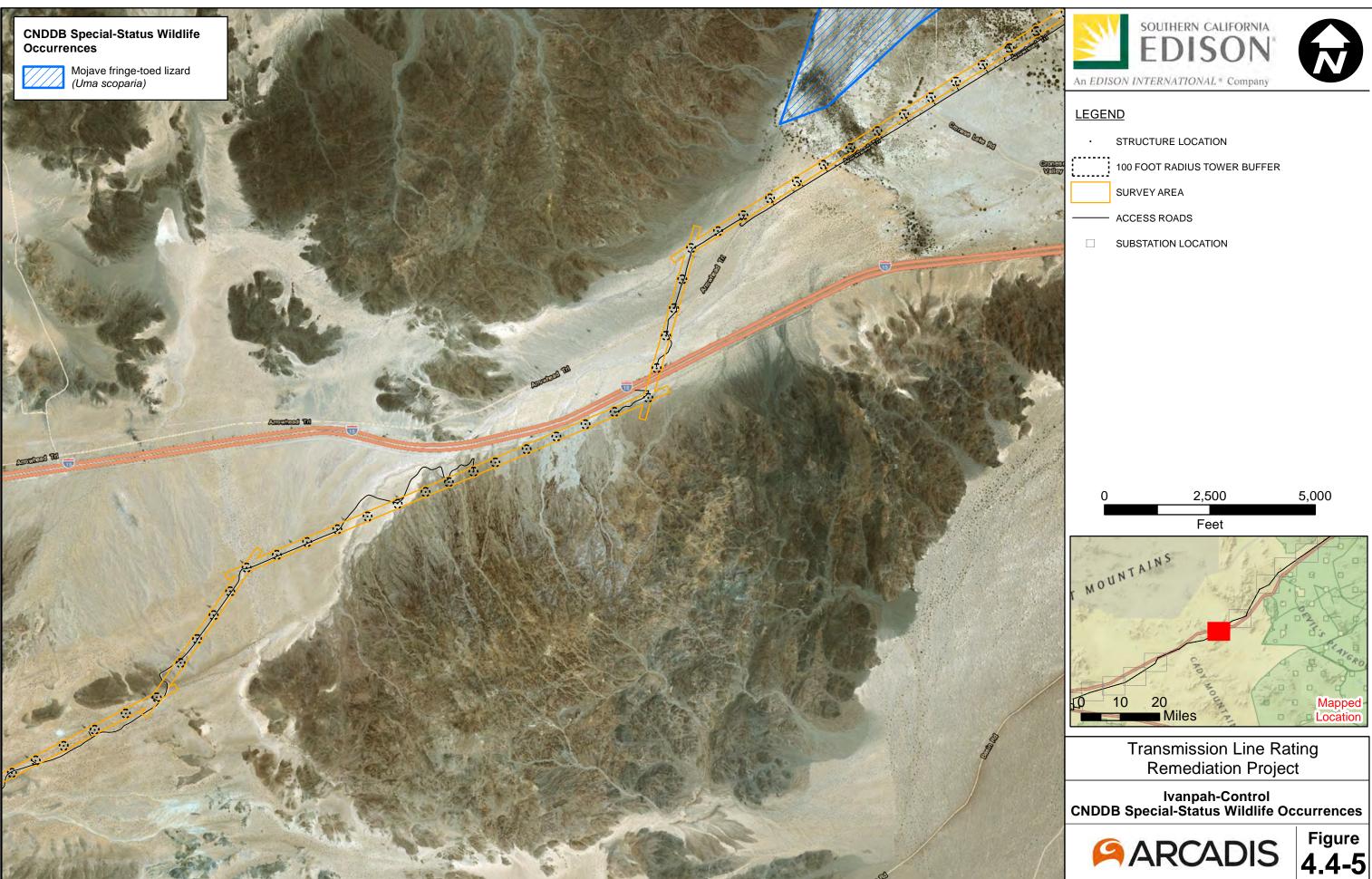


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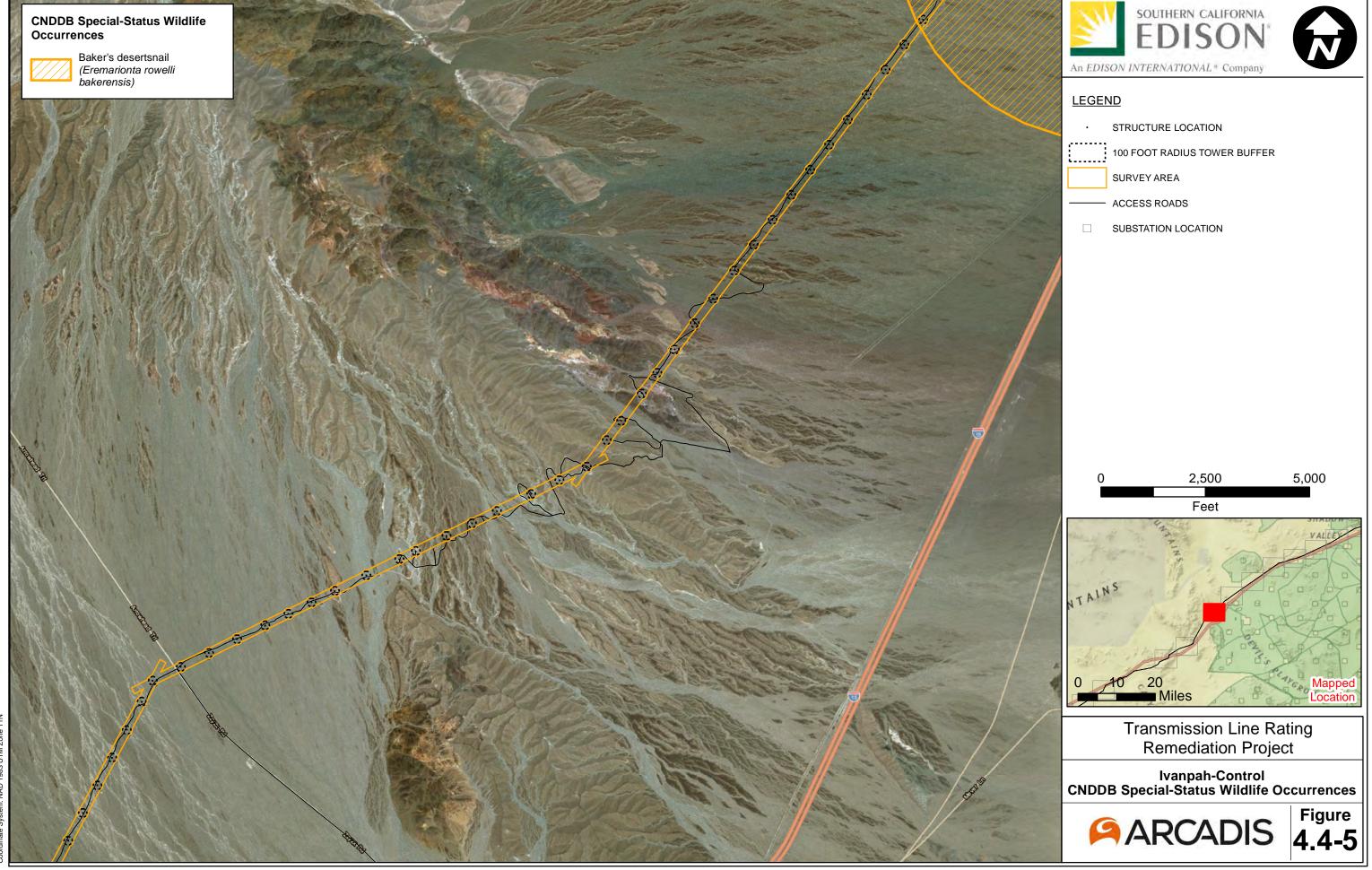


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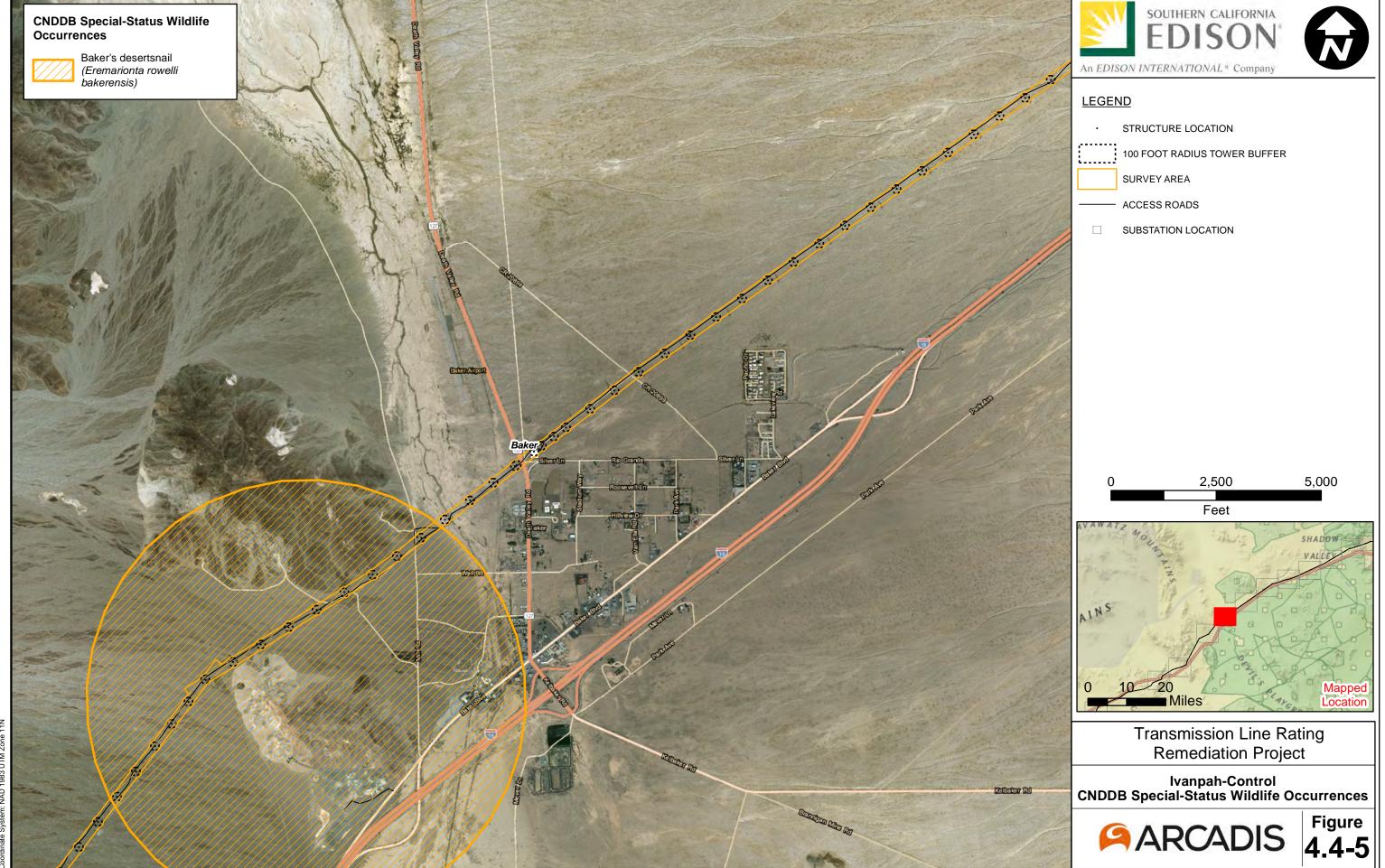




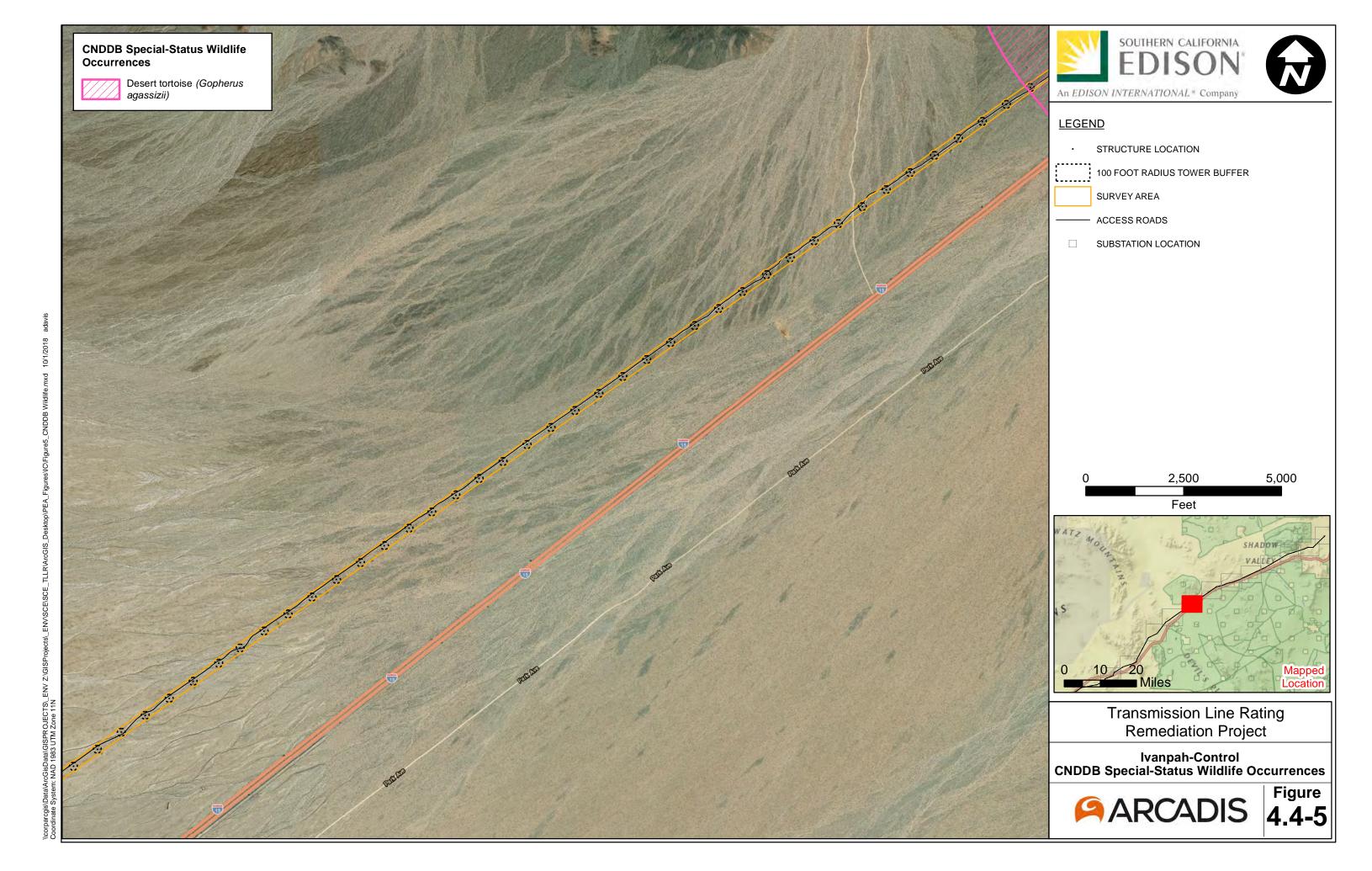


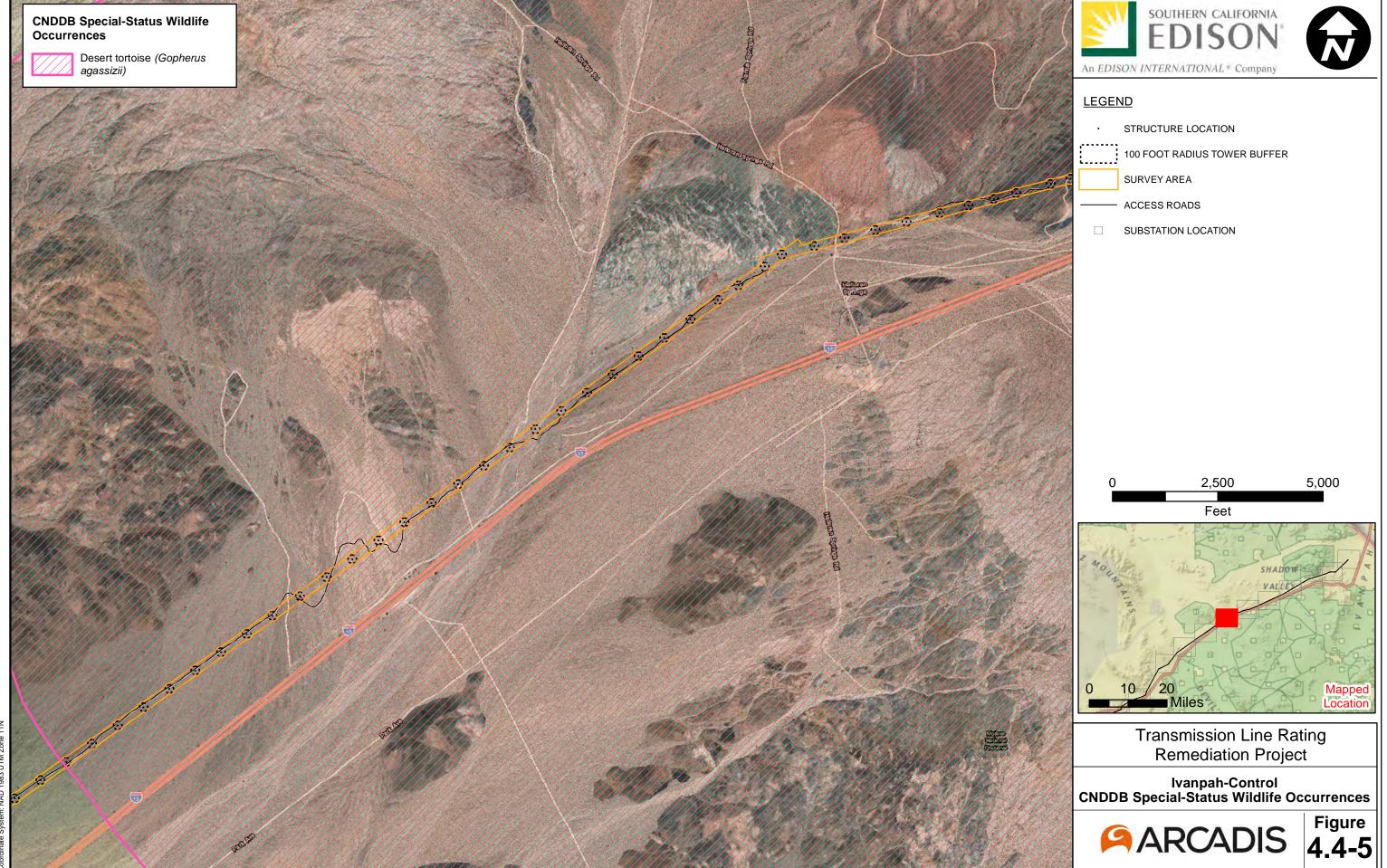


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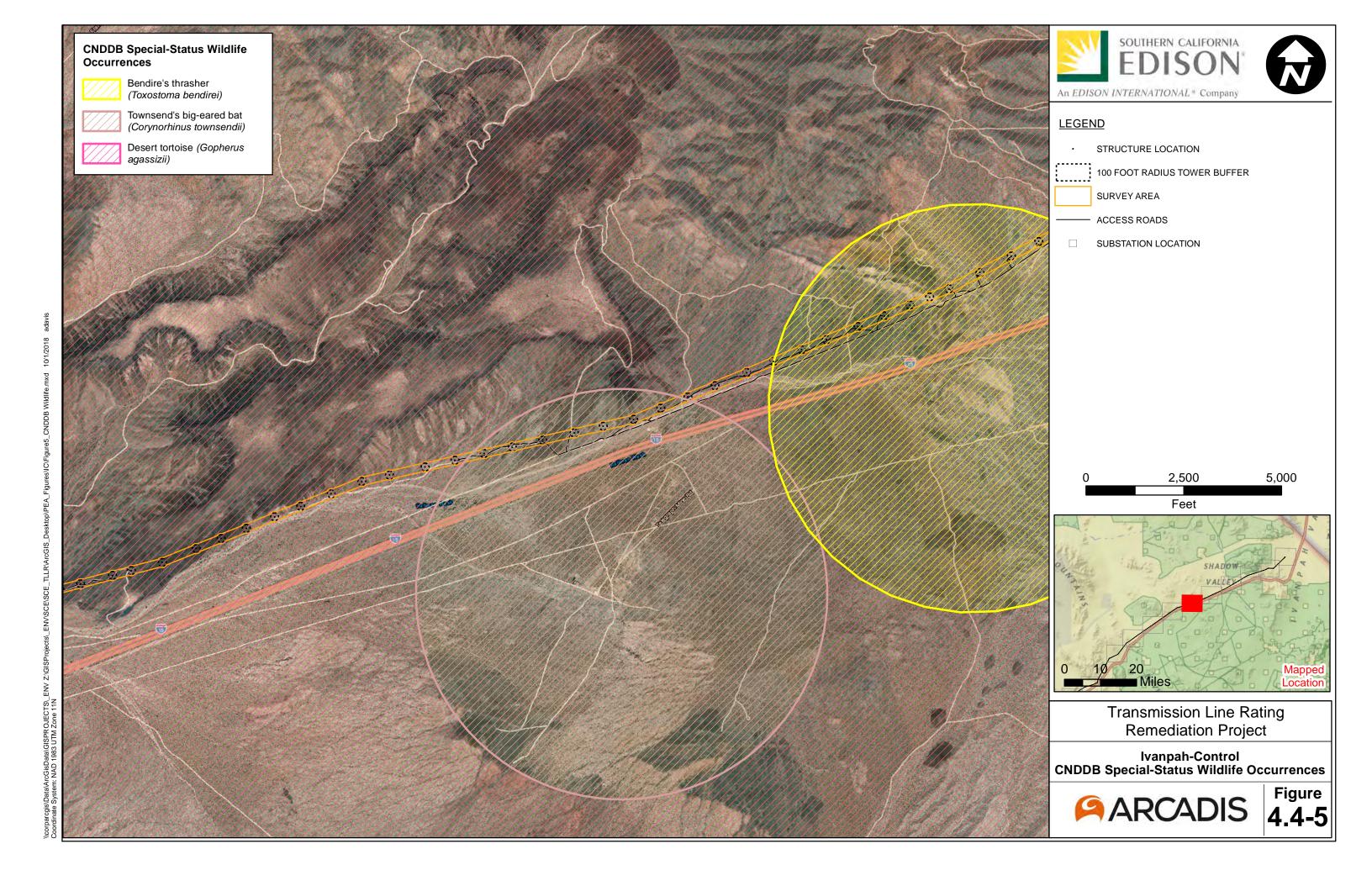


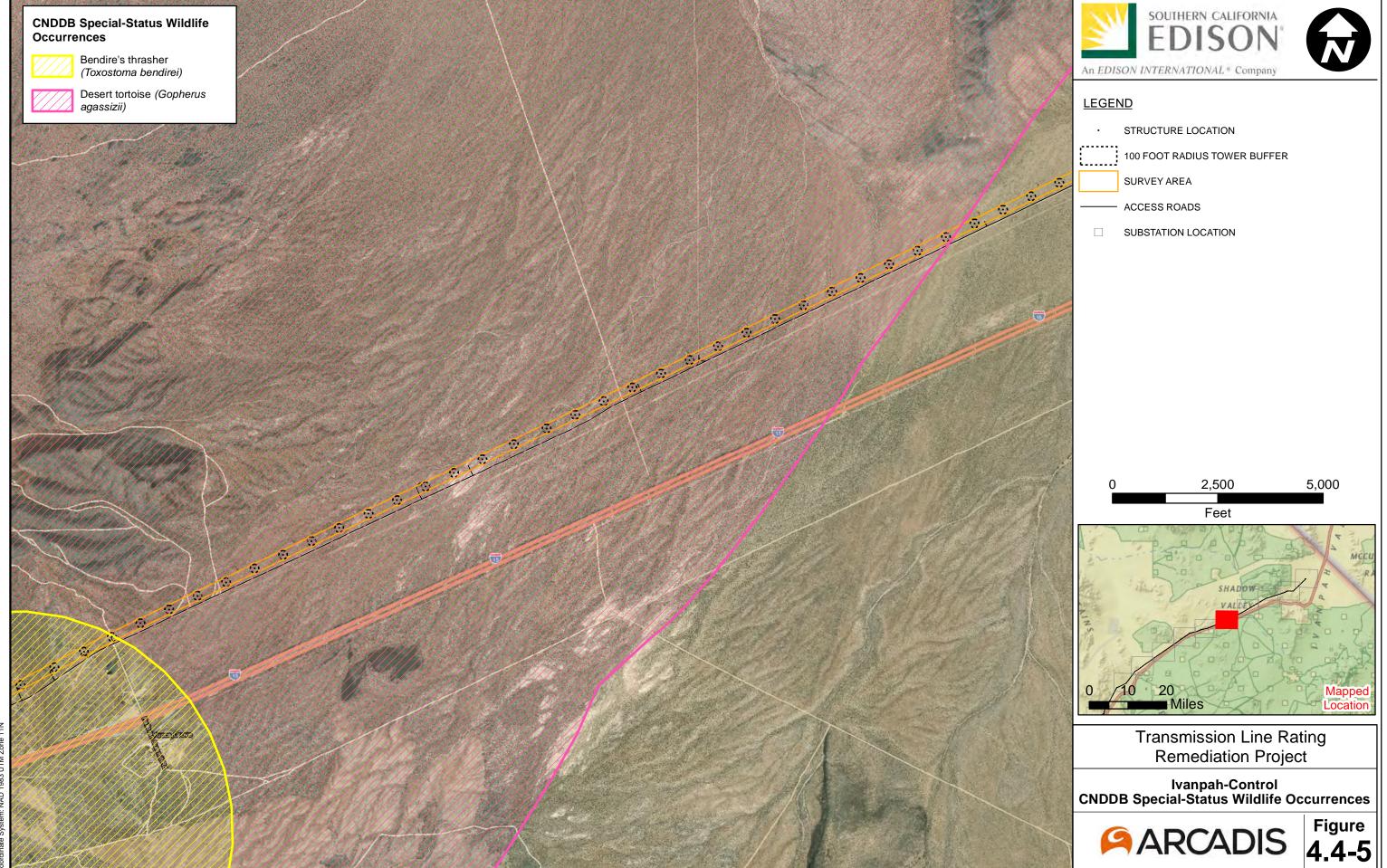
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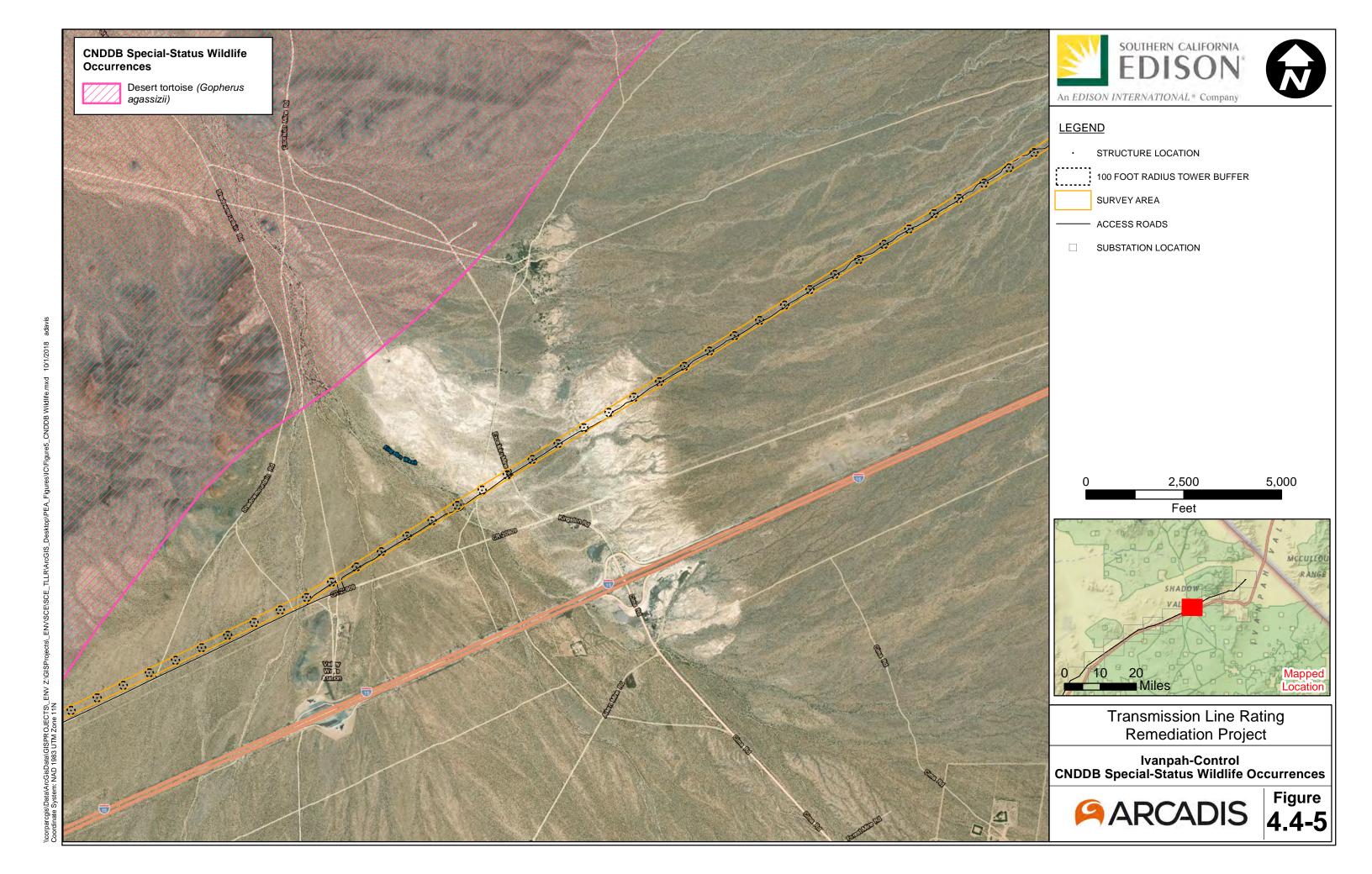


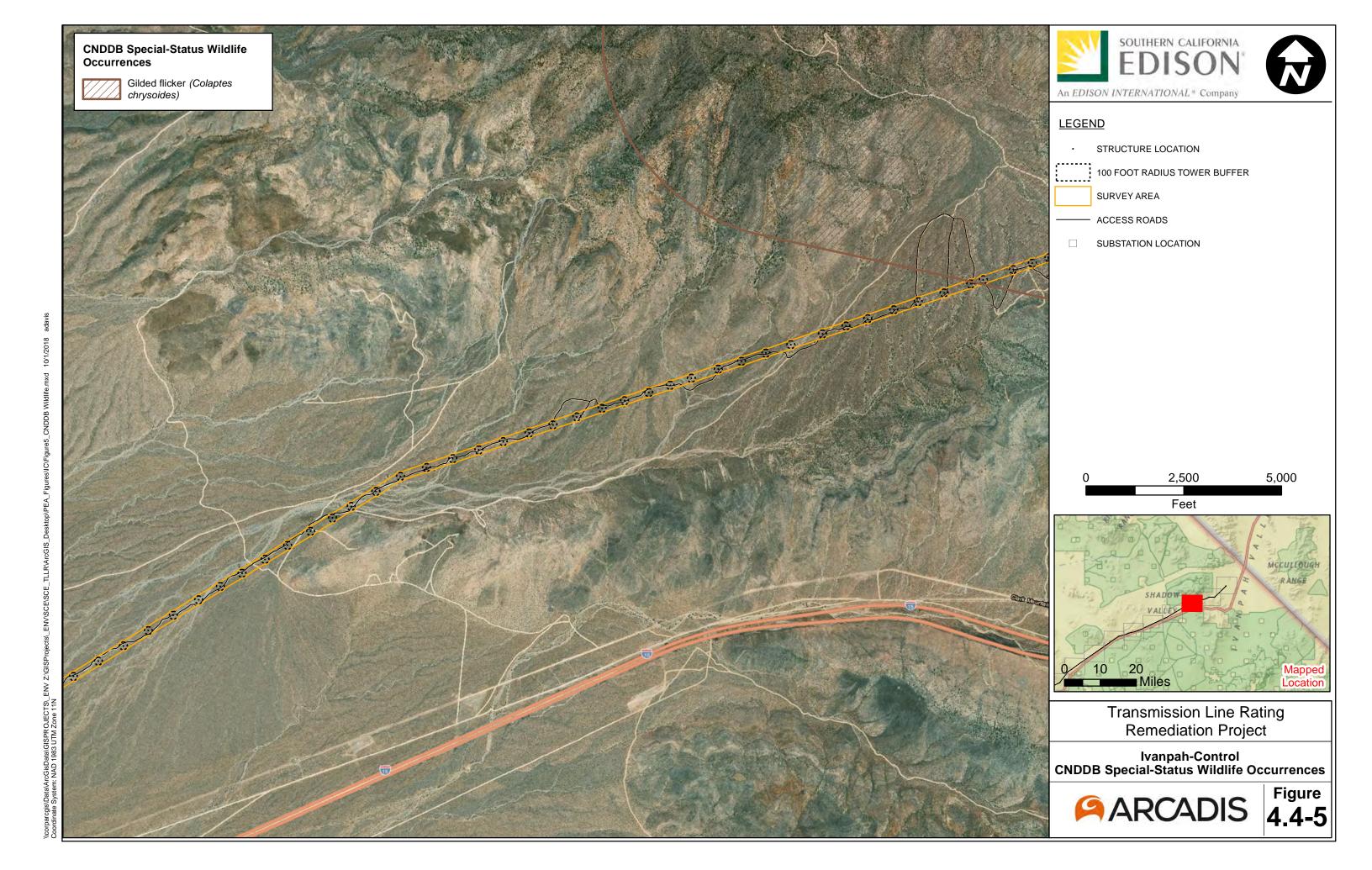
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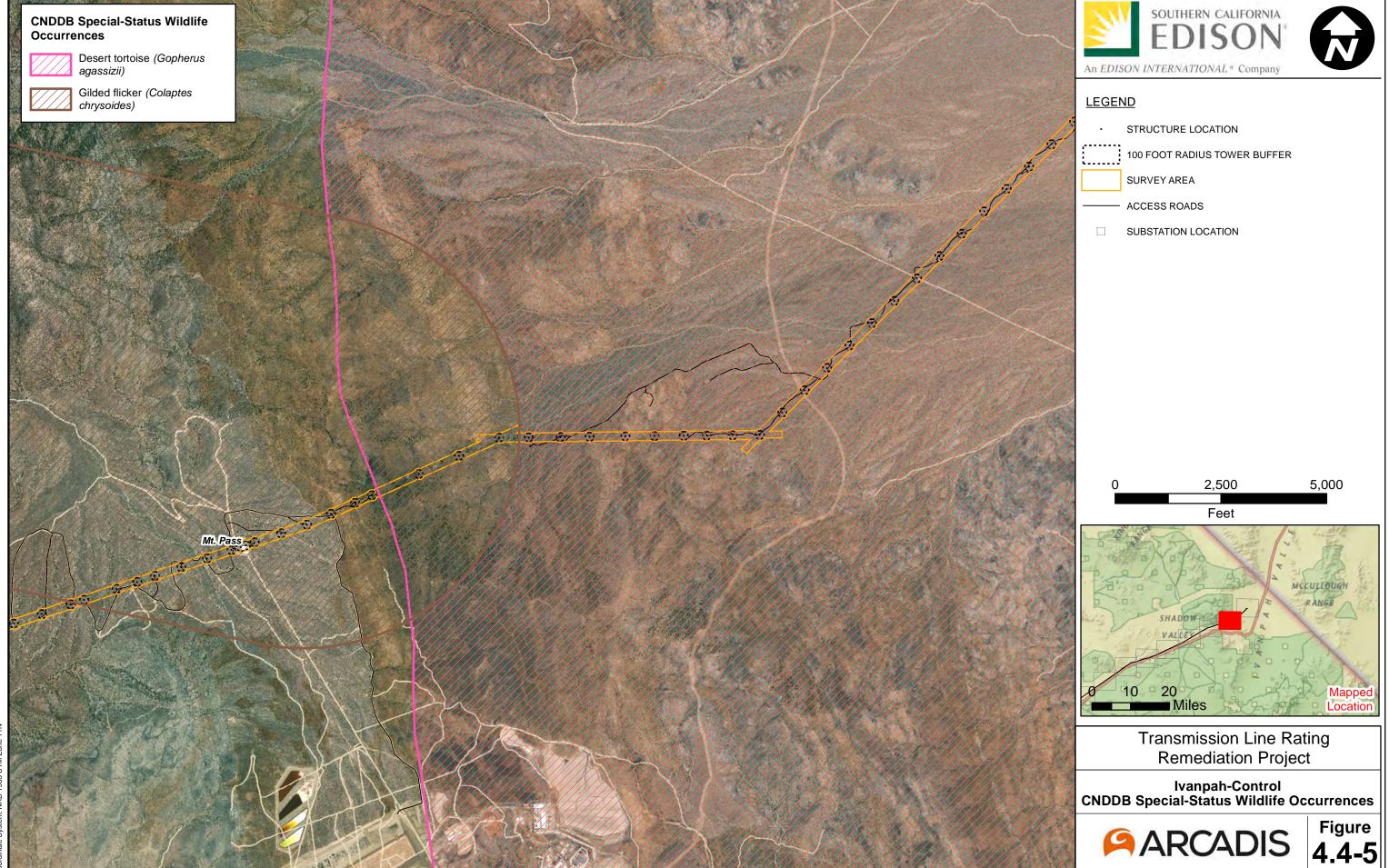


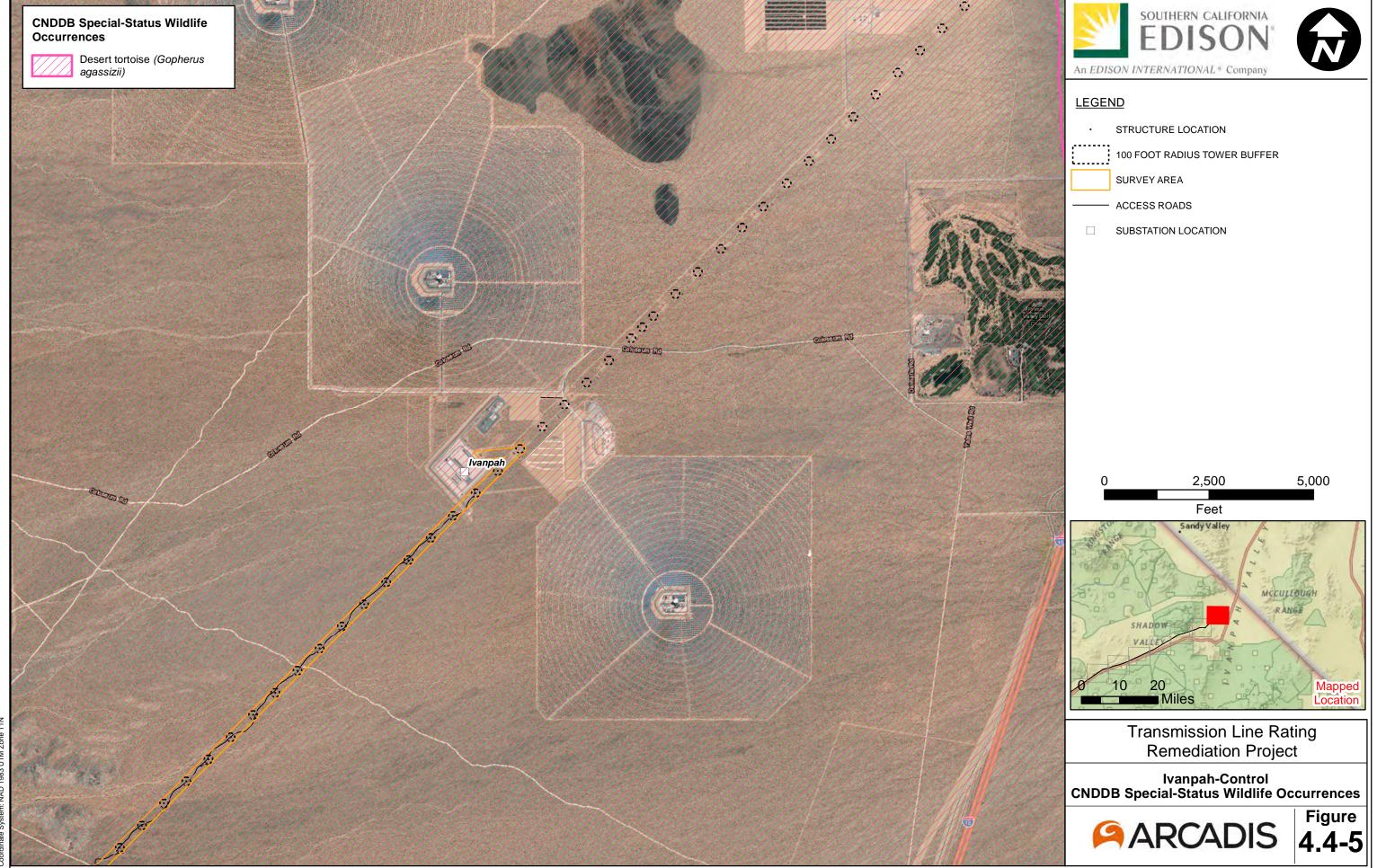


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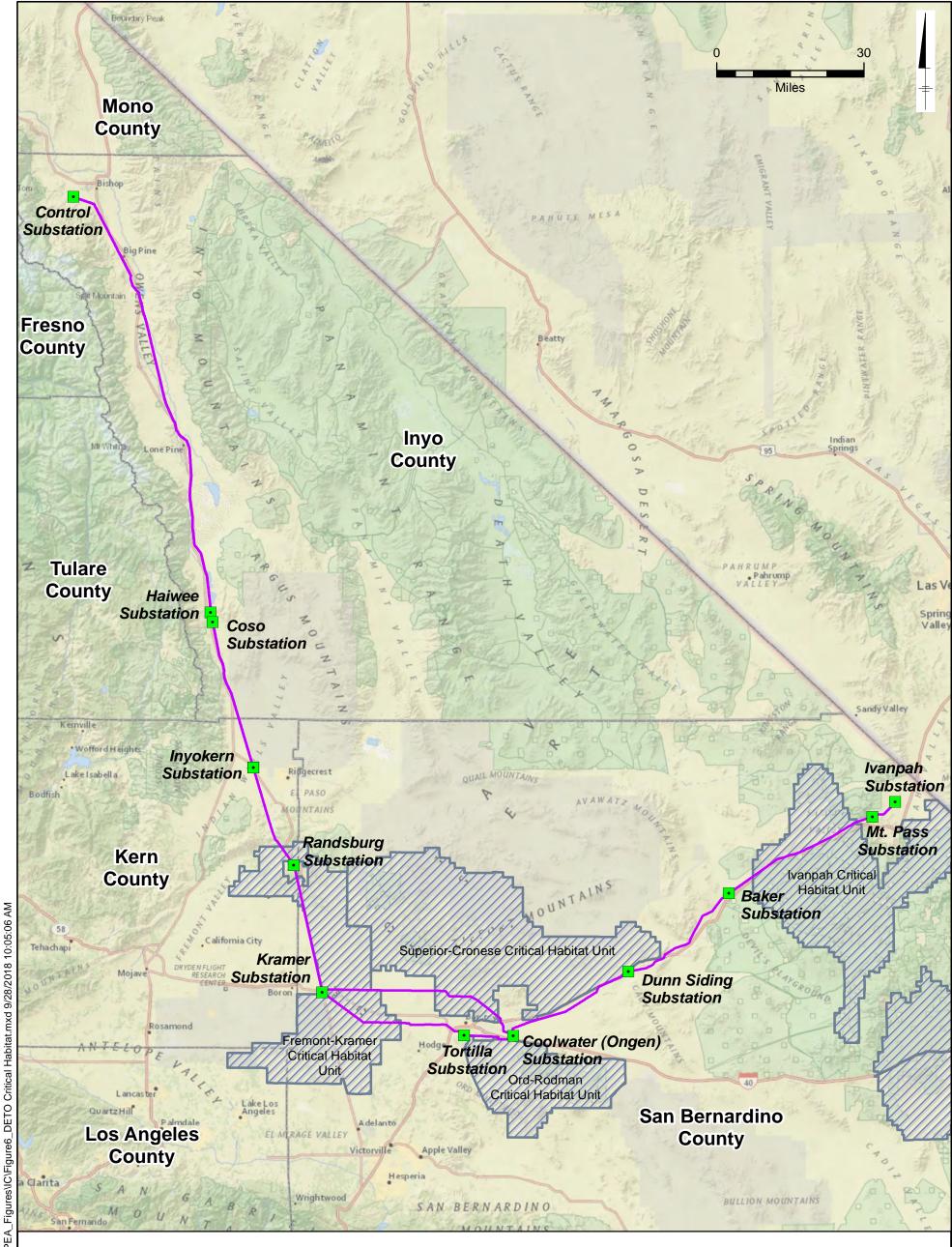








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Legend

Substation

- IC Project Alignment

Desert Tortoise Designated Critical Habitat

County

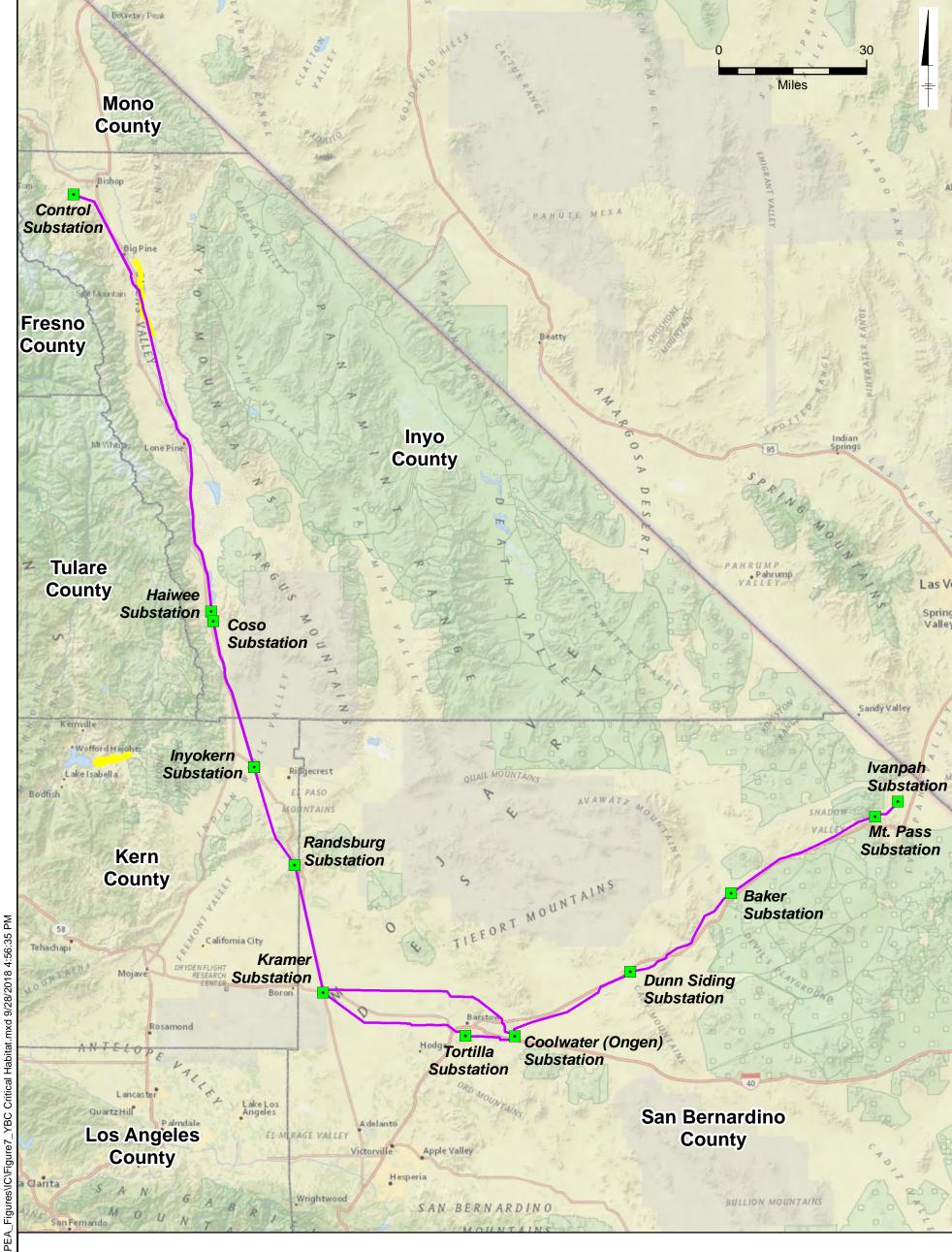
## IVANPAH-CONTROL PROJECT

DESERT TORTOISE DESIGNATED CRITICAL HABITAT





FIGURE **4.4-6** 





Substation

IC Project Alignment

Yellow-Billed Cuckoo Proposed Critical Habitat

\_\_\_\_ County

## IVANPAH-CONTROL PROJECT

YELLOW-BILLED CUCKOO PROPOSED CRITICAL HABITAT





FIGURE **4.4-7** 

SYLVANIA MOUNTAINS 2757 m