

**SOUTHERN CALIFORNIA EDISON**  
**SENSITIVE SPECIES**  
**AND HABITAT REPORT**

**TLRR Gorman - Kern River 66 kV Project**

September 2021

A large, solid orange geometric shape, resembling a stylized triangle or a section of a larger triangle, is positioned in the bottom right corner of the page. It is composed of two overlapping triangles, creating a complex, angular form that extends from the bottom edge towards the top right corner.

Sensitive Species and Habitat Report  
TLRR Gorman - Kern River 66 kV Project

## SENSITIVE SPECIES AND HABITAT REPORT

TLRR Gorman - Kern River 66 kV Subtransmission Line Project

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## ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
amsl	above mean sea level
BCC	USFWS Bird of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
BIOS	Biogeographic Information and Observation System
CAISO	California Independent System Operator
CC	California Candidate (Threatened or Endangered) species
CCH	Consortium of California Herbaria
CDFW	California Department of Fish and Wildlife
CE	California Endangered species
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDDB	California Native Diversity Database
CNLM	Center for Natural Lands Management
CNPS	California Native Plant Society
CPUC	California Public Utilities Commission
CRPR	California Rare Plant Ranks
CSC	CDFW Species of Special Concern
CT	California Threatened species
ECOS	Environmental Conservation Online System
FAC	Facultative (wetland indicator status)
FACU	Facultative Upland (wetland indicator status)
FACW	Facultative Wet (wetland indicator status)
FE	Federally Endangered species
FESA	Federal Endangered Species Act
FP	CDFW Fully Protected species
FT	Federally Threatened species
GKR	TLRR Gorman - Kern River 66 kV subtransmission line
GO 95	General Order 95, Rules for Overhead Electric Line Construction

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GPS	Global Positioning System
IPaC	Information for Consultation and Planning
LiDAR	Light Detection and Ranging
MBTA	Migratory Bird Treaty Act of 1918
NERC	North American Electric Reliability Corporation
OBL	Obligate (wetland indicator status)
Project	TLRR Gorman - Kern River 66 kV Project
SCE	Southern California Edison
TLRR	Transmission Line Rating Remediation
USACE	United States Army Corps of Engineers
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WL	Watch List



# 1 INTRODUCTION

This Sensitive Species and Habitat Report summarizes the vegetation types and sensitive ecological resources present or potentially occurring along Southern California Edison Company's (SCE) Gorman - Kern River (GKR) Project 66 kV subtransmission line alignment in Kern and Los Angeles counties, California (Figure 1). The Project spans approximately 65.6 miles (105.6 kilometers).

## 1.1 Project Summary

SCE provides wholesale and retail electric service across southern California. The SCE electricity distribution network includes more than 700 substations, 104,000 miles (167,372 kilometers) of circuits, and approximately 1.5 million poles and towers. The operation and maintenance of these circuits (also referred to as "lines" in utility nomenclature) is regulated by a number of state and federal entities including the California Public Utilities Commission (CPUC), the California Independent System Operator (CAISO), and the North American Electric Reliability Corporation (NERC), among others.

GO 95 Rules 37 through 39 specify minimum vertical and horizontal clearances that must be maintained between an electric power line (referred to as a conductor) and other conductors, or between a conductor and the ground, buildings, and a variety of other objects. Conductor clearance in the field (e.g., between a conductor and the ground) is not a static value—it changes depending upon the operational characteristics of the line. As greater amounts of electricity are transmitted by a conductor, the conductor material heats up and expands, resulting in greater sag (and a lesser clearance) in a given span.

In 2006, SCE identified that the clearances along some of its circuits were not compliant with the clearances required by GO 95 due to the installation of additional infrastructure under SCE lines over time; survey, engineering, and construction inaccuracies; the growth of vegetation; and changes in topography. This information was communicated to both the CPUC and the California Independent System Operator (CAISO). SCE then initiated a Light Detection and Ranging (LiDAR) study and engineering modeling work to confirm these discrepancies.

The collective effort to identify and remediate these discrepancies across SCE's system is referred to as the Transmission Line Rating Remediation (TLRR) effort. Based on the LiDAR and engineering modeling work, SCE's TLRR effort is developing a remediation plan for each discrepancy to ensure compliance with GO 95 standards. Therefore, the purpose of the Proposed Project is to ensure compliance with CPUC GO 95 by remediating approximately 225 discrepancies identified through SCE's TLRR effort along the GKR Project's 66 kV circuits. These circuits are located in unincorporated Kern County and Los Angeles County and the cities of Arvin and Bakersfield.

## 1.2 Project Location

The northern extent of the GKR Project alignment is located at the Kern River 1 Hydroelectric Substation located along State Route 178 north of Edison in Kern County (Figure 1 and Figure 2). From the Kern River 1 Hydroelectric Substation, the GKR alignment continues south towards Arvin (Segment 1). South of Arvin the alignment splits and one segment continues south through Tejon Ranch to the Gorman Substation (Segments 2 and 3). East of Arvin, two segments (Segments 4 and 5) continue east throughout the Tehachapi Mountains to the vicinity of the Banducci Substation.

## 2 ENVIRONMENTAL SETTING

The GKR Project occurs at the confluence of several mountain ranges and different biogeographic areas. The northern terminus of the GKR alignment is located in the Kern River drainage in the southern Sierra Nevada at the Kern River 1 Hydroelectric Substation. From there, the alignment passes south through a portion of the San Joaquin Valley before traversing north-facing Grapevine Canyon, which separates the San Emigdio Mountains to the west and the Tehachapi Mountains to the east and the Sierra Pelona Mountains to the southeast. The Tehachapi Mountains link the southern Sierra Nevada to the northeast with the Transverse Ranges to the south, and also separate the San Joaquin Valley to the northwest from the Mojave Desert to the southeast. The west-east running portion of the GKR Project alignment segments extend east through the Tehachapi Mountains to its terminus at the Banducci Substation.

The GKR alignment intersects major mountain ranges that serve as dispersal corridors for plants and wildlife, linking the Coast Ranges and Transverse Ranges with the Sierra Nevada. The Tehachapi Mountains merge with the southern Sierra Nevada in the northeast; the San Emigdio and Sierra Pelona Mountains at the southern end of the GKR alignment link with the Transverse Ranges to the south; and, to the north, the San Emigdio Mountains eventually link with other Transverse Ranges and the southern end of the inner Coast Ranges. In addition, one portion of the GKR Project extends east to the edge of the western Mojave Desert east of the Gorman Substation.

A range of elevations, topography, slope exposures, soil and rock types, and habitat features characterize the GKR alignment, and this variation is reflected in vegetation types and plant species unique to this region. Soils vary from gravels and sands to granitic boulders, limestone, and alluvial silts and clays.

Yearly precipitation in Bakersfield averages 5.8 inches (14.7 centimeters), with an average 11.7 inches (29.7 centimeters) at Tejon Ranch. The highest rainfall is recorded during the winter months (December to March), when frontal systems bring about 1 to 2 inches (2.5 to 5 centimeters) to the area each month, depending on the location. Generally, summer thundershowers don't provide reliable precipitation on an annual basis (Western Regional Climate Center 2019).

Temperatures in the Bakersfield area exhibit seasonal extremes, with a mean annual temperature of 64.1 degrees Fahrenheit (°F), an average maximum July temperature of 100.9°F, and an average January minimum temperature of 35.3°F. An average of 118.3 days reach temperatures above 90°F each year, with average yearly temperatures below freezing recorded for 35.3 days (Western Regional Climate Center 2019). At Tejon Ranch, the mean annual temperature is 63.6°F, with an average July maximum of 95.9°F and a January minimum of 36.6°F.

### 3 METHODS

The following sections describe the methods used to conduct plant and wildlife surveys for the GKR Project. Field studies included vegetation mapping (Table 1), sensitive plant surveys (Table 2), and sensitive wildlife surveys (Table 3). Results are presented in Sections 4 and 5.

#### 3.1 Literature and Database Review

Prior to field surveys, a desktop review was completed utilizing several resources to determine potential sensitive rare plant and wildlife presence and distribution in the Project area; these resources include the Jepson Manual (Baldwin et al. 2012), California Natural Diversity Database (CNDDDB 2019), Biogeographic Information and Observation System (BIOS; California Department of Fish and Wildlife [CDFW] 2019a), and Consortium of California Herbaria (CCH 2019). To generate a list of potentially occurring sensitive species in the Project area, queries were made from the listed databases (Tables 2 and 3). The queries were initially guided by reviewing all records, primarily from the CNDDDB, for rare and sensitive species that have been documented within 10 miles (16.1 kilometers) of the proposed project. Survey efforts then focused on species whose geographic range overlapped the proposed project area, had potential habitat present, and had extant, accurate records. Conditions assessed for habitat included vegetation communities, elevation, soils, etc. If habitat requirements for a given species were clearly not met in the Project survey area, such as high elevation species, then those species were not evaluated beyond the database review. Historic plant records proved difficult to evaluate in some cases due to a paucity of records and use of centroids to indicate locations of specimens with lack of specificity in CNDDDB (such as listing a canyon, town, or mountain as the collection location with no additional data; centroid chosen based on 'best guess'), which may not accurately reflect the location where a plant species was collected and observed. Records from the queries were vetted using CCH or other technical records for distance from the alignment and occurrence dates, as well as data provided by biologists with local knowledge of sensitive biological resources in the area.

The GKR alignment occurs within 11 U.S. Geological Survey 7.5-minute quadrangles, which were queried for sensitive resource data in CNDDDB: Arvin, Bear Mountain, Cummings Mountain, Edison, Frazier Mountain, Grapevine, Lebec, Pastoria Creek, Rio Bravo Ranch, Tejon Hills, and Tejon Ranch.

A map set showing CNDDDB locations is included in Appendix A.

The United States Department of Fish and Wildlife Service (USFWS) Information for Planning and Consultation (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 Proposed Project, along with the USFWS Critical Habitat Portal website, Environmental Conservation Online System (ECOS; USFWS 2019a).

Additional literature and databases referenced include the following:

- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California (CNPS 2019a)
- A Manual of California Vegetation (Sawyer, Keeler-Wolfe, and Evens 2009)

- The CalFlora Database (CalFlora 2019)
- eBird website (eBird 2019)
- California Herps: A Guide to the Amphibians and Reptiles of California website (CalHerps 2019)
- California Wildlife Habitat Relationships software (CDFW 2019b)
- United States Forest Service (USFS) sensitive plant and animal lists (USFS 2013a, USFS 2013b).
- Aerial imagery to broadly assess vegetation types prior to field work.

### 3.2 Field Survey Methods

The GKR alignment was surveyed for sensitive plant and wildlife resources between May 15 and May 19, 2017 and April 29 and May 2, 2018. Additional surveys were conducted near the Gorman Substation between April 15 and April 19, 2019. In addition, the team mapped vegetation types, as described below in Section 3.2.1.1.

All sensitive biological resources within a 100-foot (30-meter) radius around each existing tower location were documented, along with observations at all known pulling/tensioning sites, laydown areas, and new or modified access routes in Project areas. The field surveys covered a 150-foot-wide (46-meter-wide) corridor spanning 75 feet (23 meters) on each side of the centerline for the entire alignment, unless otherwise specified in the following sections.

During the 2017 surveys, three separate teams, each consisting of four wildlife biologists and two botanists (six people in total) surveyed the GKR alignment. The wildlife biologists walked parallel transects generally spaced at 33-foot (10-meter) intervals based on terrain and accessibility, while the botanists conducted meandering transects. Each team had a designated senior biologist who served as a team lead to ensure proper coverage of the survey area.

Field surveys included the following:

- Vegetation mapping
- Focused surveys for sensitive plants
- Surveys and habitat assessment for special-status wildlife species, along with suitable habitat for each species
- Phase 1 and 2 surveys for burrowing owl (*Athene cunicularia*)

During the 2018 surveys, a team of three botanists and one wildlife biologist conducted spot checks of previously-mapped vegetation polygons, and vegetation mapping results were updated as needed. During the 2019 surveys, Gorman Substation area was surveyed by a team of three botanists and two wildlife biologists.

Any additional observations of special-status plant or wildlife species were added to the resulting data as well. Appendix G provides the dates for each type of field survey and lists the names of the biologists who conducted the surveys.

### 3.2.1 Plant Surveys

Botanical surveys for vegetation mapping, sensitive plants, and reference site visits are described in the sections below.

#### 3.2.1.1 Vegetation Mapping

The GKR alignment was surveyed and vegetation types were mapped between May 15 and May 19, 2017 and April 29 and May 2, 2018. Vegetation mapping near the Gorman Substation was conducted between April 15 and April 19, 2019. Qualified botanists mapped vegetation types in the field within the GKR alignment using the CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment (CDFW 2019c) and the California Manual of Vegetation, Second Edition (Sawyer et al. 2009), including the updated California Natural Communities List, also called the List of Vegetation Alliances and Associations (CDFW 2021), as well as the Sensitive Natural Communities List (CDFW 2021). Vegetation mapping was conducted concurrently with sensitive plant surveys.

Nomenclature follows the *Jepson Manual: Vascular Plants of California*, Second Edition (Baldwin et al. 2012) as well as updates provided in the online Jepson eFlora (Jepson eFlora 2021). A table of all observed vascular plant species along the alignment is included in Appendix B.

Vegetation rapid assessment forms were completed for each natural community alliance and association. Global Positioning System (GPS) data collected at the approximate boundary between alliances on the alignment. In most cases, the minimum mapping unit followed a 1-acre to 2-acre (0.4 – 0.8 hectares) minimum mapping unit, consistent with the 2-acre (0.8 hectare) National Vegetation Classification Standard (FGDC 2008) for vegetation mapping. In some locations, vegetation was mapped at a finer scale, especially if a sensitive natural community was observed. Vegetation rapid assessment forms are included in Appendix C. A photographic log showing representative photographs of each vegetation type is included in Appendix D.

#### 3.2.1.2 Sensitive Plants

Botanical surveys for sensitive plants within the GKR alignment were conducted between May 15 and May 19, 2017 and April 29 and May 2, 2018. Botanical surveys near the Gorman Substation were conducted between April 15 and April 19, 2019. Surveys were conducted during the appropriate blooming season for target special-status plant species that were likely to be present along the GKR alignment.

In 2017, botanists worked in teams of two botanists, in addition to the wildlife biologists also present, to conduct walking surveys within the GKR alignment. During the 2018 surveys, a team of three botanists and one wildlife biologist conducted spot checks of previously-mapped vegetation polygons, and vegetation mapping results were updated as needed.

Surveys were primarily focused around each transmission tower location, as well as known pulling/tension sites, and staging/laydown areas with additional meandering surveys along the subtransmission line spans. When observed, potential sensitive 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. Sensitive plants are defined as Federal and State-listed plants and those species with the following California Rare Plant Ranks (CRPR) status:

- a. CRPR 1B = plants that are rare, threatened, or endangered in California and elsewhere
- b. CRPR 2B = plants that are rare, threatened, or endangered in California, but common elsewhere

Plants with a CRPR 3 or 4 (plants on a watch list or with a limited distribution) were only reported if observed during the surveys to provide baseline data in case of future ranking changes.

Individual sensitive plant species observations were mapped as points. Colonies of sensitive plant species were mapped as points or polygons when colonies covered an area greater than 10 square feet (1 square meter). Nomenclature follows the *Jepson Manual: Vascular Plants of California*, Second Edition (Baldwin et al. 2012) as well as updates provided in the online Jepson eFlora (Jepson eFlora 2021). In addition, pertinent volumes of the *Flora of North America* (Flora of North America Editorial Committee, eds. 1993+) were utilized for plant identification. Jurisdictional wetland surveys, along with documentation of associated riparian vegetation, were conducted separately for the entire GKR alignment.

### 3.2.1.3 Reference Site Visits

When feasible, reference sites of sensitive plant species were visited prior to or during sensitive plant surveys to assess blooming status, as well as to review plant characteristics to enhance field identification during surveys. Reference sites were established in two ways. If a survey team positively identified a sensitive plant species on the alignment, that location was designated as a reference site, providing a location for botanists to verify plant characteristics, blooming status, and habitat for that species. Second, a team of experienced senior botanists utilized information from known locations (such as locations listed on herbarium specimens or in CNDDB) coupled with their knowledge of sensitive plants in the area to conduct surveys for sensitive plants near, but off the alignment. Positively identified species observed at reference sites were photographed, and approximate number of individuals, habitat and associated species, and plant phenology were recorded.

Although sensitive plant species were observed at some reference sites associated with the GKR alignment, these species were also found within the GKR alignment, so the reference data are not reported separately from the species descriptions included in this report.

## 3.2.2 Wildlife Surveys

Wildlife surveys were primarily focused around each subtransmission tower location, as well as known pulling/tension sites, and staging/laydown areas, and included walking surveys along the entire subtransmission corridor. Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017 and April 29 and May 2, 2018. Wildlife surveys near the Gorman Substation were conducted between April 15 and April 19, 2019. 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 might attract and/or support special-status species. Biologists walked parallel transects spaced 33 feet (10 meters) apart at a pace of 1 to 1.5 miles per hour (1.6 to 2.4 kilometers per hour). 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. Taxonomy and nomenclature for wildlife generally follows *Standard Common & Current Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians* (Collins and Taggart 2009) for amphibians and reptiles, *Check-list of North American Birds*. Seventh Edition (AOU 1998) for birds, and *Revised Checklist of North American Mammals North of Mexico* (Baker et al. 2003) for mammals.

Methods for surveying for the burrowing owl are described in more detail below. In addition, suitable habitat was assessed for the American badger (*Taxidea taxus*) and listed small-mammal, reptile, or amphibian species with a range that overlaps the GKR alignment during the wildlife surveys.

#### 3.2.2.1 Burrowing Owl Surveys

Burrowing owl surveys were conducted as part of the general special-status wildlife surveys for the Project between May 15 and May 19, 2017. The natural communities along the alignment, coupled with geographic location, elevation, topography, and soil characteristics, were evaluated relative to the burrowing owl's habitat requirements as part of the Phase 1 burrowing owl habitat assessment (California Burrowing Owl Consortium 1997). During these surveys, surveyors also covered a 500-foot (152-meter) survey buffer zone described as part of a Phase 2 burrow survey (California Burrowing Owl Consortium 1997) in the following manner: Belt transects (30-foot [9-meter] spacing between surveyors) were maintained to detect burrowing owls and burrows within the GKR alignment, encompassing the 150-foot wide (46-meter-wide) linear corridor and other anticipated disturbance areas, including tower locations (100-foot [30-meter] radius area), pulling and tensioning sites, and laydown yards (where known). To the extent possible, and with the aid of binoculars, surveyors positioned at the outer widths of the 150-foot (46-meter) wide linear survey corridor extended visual coverage for burrowing owls and burrows well beyond the corridor footprint. The 30-foot (9-meter) spacing between transects recommended for the Phase 2 survey was sufficient to detect burrowing owl activity within and adjacent to the alignment, especially considering that in areas containing potentially suitable burrowing owl habitat supporting sparse, low growing vegetation (Zarn 1974), visual coverage easily extended well beyond the 150-foot (46-meter) corridor boundary on each side of the alignment. Typically, when visual coverage into buffer areas was reduced due to changes in topography and or vegetation density and height, the habitat was less likely to support burrowing owls. Surveyors documented burrowing owl sightings, burrows, and burrowing owl sign (e.g., whitewash, pellets, feathers, etc.).



## 4 VEGETATION TYPES

The Project area supports a mosaic of vegetation types. The distribution of vegetation types is determined by topography, soils and geology, hydrology, slope exposure, climate, land use history, and fire history. The vegetation types in and around the GKR alignment areas consist primarily of upland vegetation types, sometimes partially dissected by desert washes, roadways, or developed areas where all or most of the natural vegetation has been removed.

This section introduces the vegetation classification system used in this report and provides more detail on the vegetation types and individual floristic alliances that are generally based on dominant plants with the greatest relative cover. Three broad categories of vegetation types based on habit, or overall plant growth form (tree, shrub, herbaceous), currently exist in the immediate vicinity of the proposed alignment, including woodland, shrubland, and herbaceous grassland, in addition to disturbed habitat and developed areas.

Thirty-three vegetation types were identified on or near the Project area during the 2017 - 2019 surveys, including ten woodland vegetation types (California Buckeye Groves, California Sycamore – Coast Live Oak Riparian Woodlands, Fremont Cottonwood Forest and Woodland, Canyon Live Oak Forest and Woodland, Blue Oak Woodland and Forest, Valley Oak Woodland and Forest, Valley Oak Riparian Forest and Woodland, Mixed Oak Forest and Woodland, Goodding's Willow - Red Willow Riparian Woodland and Forest, and Shining Willow Groves); twelve shrubland vegetation types (Cheesebush – Sweetbush Scrub, Mulefat Thickets, Wedge Leaf Ceanothus/Buck Brush Chaparral, Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub, California Joint-fir - Longleaf Joint-fir Scrub, Narrowleaf Goldenbush – Bladderpod Scrub, Rubber Rabbitbrush Scrub, California Buckwheat Scrub, Scalebroom Scrub, Tucker Oak Chaparral, Arroyo Willow Thickets, and Tamarisk Thickets); and eleven herbaceous communities (Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows, Salt Grass Flats, Baltic and Mexican Rush Marshes, Ashy Ryegrass - Creeping Rye Grass Turfs, Common Monkey Flower Seeps, Needle Grass – Melic Grass Grasslands, American Bulrush Marsh, Wild Oats and Annual Brome Grasslands, Red Brome or Mediterranean Grass Grassland, Cheatgrass – Medusahead Grassland, and Perennial Pepper Weed – Prickly Lettuce Patches). Five additional types were also mapped: Active Agricultural, Ornamental/Landscaped, Open Water, Developed, and Disturbed Habitat (Table 1, Figure 3). Photographs of these vegetation types appear in Appendix D and follow the same order as presented above.

The vegetation for the GKR alignment is characterized according to the National Vegetation Classification system as it has been applied to California by the California Native Plant Society and CDFW in the *California Manual of Vegetation*, Second Edition (Sawyer et al. 2009) and in the updated California State Natural Communities List, also called the List of Vegetation Alliances and Associations (CDFW 2021a). The classification system is hierarchical, consisting of classes, subclasses, formations, divisions, macrogroups, groups, alliances, and associations. Vegetation types for this study have been classified at the Alliance level, based on identification of dominant and/or co-dominant species and associates by estimating aerial cover and using membership rules for the Alliance from the *California Manual of Vegetation*, Second Edition (Sawyer et al. 2009). Within mapped alliances, associations of dominant and diagnostic species were also mapped; these are included in Table 1 and summarized below within their respective alliance. Where new vegetation associations were encountered along the alignment that had



not been included in the California State Natural Communities List, the association was labeled as Provisional, for further review, with documentation provided to the Vegetation Program Manager for CNPS and CDFW.

CDFW has assigned Alliance Rarity Ratings to those alliances included in the *California Manual of Vegetation*, Second Edition (Sawyer et al. 2009) and in the updated California State Natural Communities List (CDFW 2021a). CDFW (2021a and 2021b) treats “threat” ranks of S3 or higher (S1, S2, S3) as sensitive natural communities, whereas S4 and S5 rankings are not designated as sensitive or threatened. The state ranking system for S3 and above includes the estimated number of existing acres in California for the sensitive natural communities. An additional threat rank may be assigned to an alliance, ranging from .1 (very threatened) to .2 (threatened) to .3 (no current threats known). Sensitive natural communities in this report are defined as having S1, S2, and S3 rankings, consistent with CDFW guidelines. In addition, the updated California Natural Communities List (CDFW 2021a) designates sensitive associations without always assigning a threat ranking.

A total of 283 plant taxa were recorded during the 2017 - 2019 plant surveys, including 216 native plant taxa and 67 non-native species (Appendix B).

This discussion of vegetation types is organized first by vegetation habit category (woodland, shrubland, herbaceous), and then vegetation alliances dominated by native species within each category are listed alphabetically by scientific name for the main dominant plant, followed by vegetation alliances dominated by non-native species. Additional habitat types (e.g., agricultural lands, open water, etc.) are discussed at the end of this section.

## 4.1 Woodland and Forest Vegetation

Trees are woody plants that generally exceed 20 feet (6 meters) in height at maturity; although trees often bear single trunks, multiple-trunked trees are relatively common in fire-prone and/or arid environments. Scattered trees amongst other vegetation such as shrubs and grasses or other herbaceous vegetation may form woodlands.

Ten woodland alliances were recorded within the GKR alignment: California Buckeye Groves, California Sycamore – Coast Live Oak Riparian Woodlands, Fremont Cottonwood Forest and Woodland, Canyon Live Oak Forest and Woodland, Blue Oak Woodland and Forest, Valley Oak Woodland and Forest, Valley Oak Riparian Forest and Woodland, Mixed Oak Forest and Woodland, Goodding’s Willow - Red Willow Riparian Woodland and Forest, and Shining Willow Groves.

Five woodland and forest alliances are found in moist soils near drainages and water courses: California Sycamore – Coast Live Oak Riparian Woodlands, Fremont Cottonwood Forest and Woodland, Goodding’s Willow - Red Willow Riparian Woodlands, Shining Willow Groves, and Valley Oak Riparian Forest and Woodland. The dominant trees in the willow thicket and California sycamore vegetation types within the GKR alignment have wetland indicator status designated by the United States Army Corps of Engineers (USACE). Another willow vegetation alliance, Arroyo Willow Thickets, is categorized as Shrubland in the CNPS Manual of California Vegetation (Sawyer et al. 2009) and is discussed in Section 4.2.

Four woodland alliances are characteristic of wooded vegetation in mountainous and valley regions surrounding the Central Valley, including in the Coast Ranges, Sierra Nevada, Tehachapi Mountains, and

other Transverse Ranges. Valley Oak Woodland and Forest often occupies rich, moist alluvial soils, whereas the remaining three woodland alliances have sometimes been generally called foothill woodland, due to their distribution below the conifer belt in regional mountains.

Eighteen associations were mapped within these woodland alliances.

#### **4.1.1 California Buckeye Groves (*Aesculus californica* Woodland Alliance)**

California Buckeye Groves are dominated by California buckeye, also called California horse-chestnut, a large drought-deciduous tree in the Soapberry Family (Sapindaceae); woodlands dominated by California buckeye occur primarily on well-drained slopes and in canyons and drainages below 5,600 feet (1,700 meters) amsl (above mean sea level). California buckeye occurs in a band surrounding the Great Central Valley from Siskiyou County south to Los Angeles County, similar to the distribution of blue oak, and also occurs in coastal mountain ranges, including the Coast Ranges, Sierra Nevada, Tehachapi Mountains, and isolated locations in the Transverse Ranges.

California buckeye is a spreading deciduous tree to 40 feet (12 meters) in height that often bears multiple large trunks a few feet off the ground, resulting in a broad rounded crown. It produces distinctive palmately-compound leaves, conspicuous elongate inflorescences bearing white flowers in spring, and rounded fruits bearing a large single shiny brown seed in each husk. Leaf drop usually occurs in autumn at higher elevations but may drop in response to drought at lower elevations or in dry years. Older specimen trees can survive for 250 to 300 years (Peattie 1991). California Buckeye Groves may form open stands or denser woodlands in the Project area, often in association with lower densities of blue oak (*Quercus douglasii*), valley oak (*Quercus lobata*), and interior live oak (*Quercus wislizenii*), along with understory shrubs and herbaceous forbs and grasses. Soils tend to be shallow and well drained. This species has no wetland indicator status (Lichvar et al. 2016).

Within the GKR alignment, California Buckeye Groves are represented by the *Aesculus californica* Association, which occurs in three locations on north-facing slopes at 2,600 feet (792 meters) amsl on slopes bordering Grapevine Creek between Grapevine and Fort Tejon State Historic Park.

California Buckeye Groves are characterized as the Mixed North Slope Forest in the CNDDB community classification system (Holland 1986), and as the *Aesculus californica* Woodland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Aesculus californica* Woodland Alliance has a G3 global rarity ranking (21-100 viable occurrences worldwide, and/or 6,400-32,000 acres [2,590-12,950 hectares]) and a S3 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]), according to Sawyer et al. (2009).

California Buckeye Groves occur within the GKR alignment in three locations at 2,600 feet (792 meters) amsl on slopes bordering Grapevine Creek. California Buckeye Groves occupy approximately 7.4 acres (3.0 hectares) of the mapped area, 2.3 acres (0.9 hectares) of which occur within anticipated work areas.

California Buckeye Groves represent a sensitive natural community and a sensitive alliance.

#### **4.1.2 California Sycamore – Coast Live Oak Riparian Woodlands (*Platanus racemosa* - *Quercus agrifolia* Woodland Alliance)**

California Sycamore - Coast Live Oak Woodlands are dominated by the winter-deciduous California sycamore in the Project area, also called western sycamore; members of the Sycamore Family (Platanaceae) that can exceed 100 feet (30 meters) in height at maturity. Woodlands dominated by California sycamore occur from Redding south through the mountains and valleys surrounding the Central Valley to the Tehachapi Mountains and from San Francisco south to Baja California in the Coast Ranges, Transverse Ranges, and Peninsular Ranges, mostly below 6,500 feet (2,000 meters) amsl and often below 4,000 feet (1,220 meters). Although the revised name of this alliance includes coast live oak (*Quercus agrifolia*), coast live oak does not occur with California sycamore in this area.

Mature California sycamores often have leaning trunks bearing mottled bark and massive branches tipped by zigzagging twigs. The large three-to five-lobed leaves are green on the upper surface and hairy on the lower surface; orbicular stipules surround the stem at the leaf bases, and often remain after leaf drop in the winter months. Flowers and fruits are borne in globose balls on pendant stalks. California sycamores are noted for their longevity, with many trees reaching 250 years in age and some reported specimens reported to be 600 years old. California sycamore has a wetland indicator status of facultative wet (FACW), meaning that it usually occurs in wetlands (67-99 percent of the time), but is occasionally found in non-wetlands (Lichvar et al. 2016).

In the Project area, California Sycamore – Coast Live Oak Woodlands occur in alluvial rocky or cobbly soils along the margins of the Kern River where soils are permanently saturated at depth; stands occur in areas of high-intensity flooding on an intermittent basis. California sycamore – coast live oak woodland within the GKR alignment occurs with red willow (*Salix laevigata*), Goodding's willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), and Fremont cottonwood (*Populus fremontii*), along with other riparian species. Associated understory species include California blackberry (*Rubus ursinus*), poison-oak (*Toxicodendron diversilobum*), blue elderberry (*Sambucus nigra* subsp. *caerulea*), mulefat (*Baccharis salicifolia*), and a range of forbs and graminoids.

Within the GKR alignment, California Sycamore Woodlands are represented by the *Platanus racemosa* – *Salix laevigata* / *Salix lasiolepis* – *Baccharis salicifolia* Association, which occurs in the Kern River drainage in the southern Sierra Nevada near the terminus of the GKR alignment at the Kern River 1 Hydroelectric Substation.

California Sycamore – Coast Live Oak Woodlands in this area are characterized as Sycamore Alluvial Woodland and the Southern Sycamore Alder Woodland in the CNDDDB community classification system (Holland 1986), and as the *Platanus racemosa* Woodland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Platanus racemosa* - *Quercus agrifolia* Woodland Alliance has a G3 global rarity ranking (21-100 viable occurrences worldwide, and/or 6,400-32,000 acres [2,590-12,950 hectares]) and a S3 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]; threatened), according to Sawyer et al. (2009).

California Sycamore -Coast Live Oak Woodlands occupy approximately 4.4 acres (1.8 hectares) of the mapped area along the Kern River drainage in the southern Sierra Nevada near the terminus of the GKR alignment at the Kern River 1 Hydroelectric Substation; approximately 0.5 acres (0.2 hectares) of this alliance occurs within anticipated work areas.

California Sycamore -Coast Live Oak Woodlands represent a sensitive natural community and a sensitive alliance.

#### **4.1.3 Fremont Cottonwood Forest and Woodland (*Populus fremontii* – *Fraxinus velutina* – *Salix gooddingii* Forest and Woodland Alliance)**

Fremont Cottonwood Forest and Woodland is dominated by Fremont cottonwood, a tall winter-deciduous tree to 100 feet (30 meters) or more feet in height, with rough fissured grayish bark and a broad crown at maturity. Branchlets are stout and pale green, supporting triangular-shaped coarsely-toothed leaves with a broad base, narrow pointed tip, and shiny green on both surfaces. Two other species are listed as members of this alliance, velvet ash (*Fraxinus velutina*) and Goodding's willow. Velvet ash was not observed and is not reported within the GKR alignment. Goodding's willow occurred in several locations as an associated species but not as a co-dominant. Fremont cottonwood has no wetland indicator status, despite its frequent presence along streams and rivers (Lichvar et al. 2016).

Fremont Cottonwood Forest and Woodland occurs along floodplains, rivers, intermittent and perennial streams, as well as near springs and in valleys with a high water table below 6,500 feet (2,000 meter) amsl in much of interior California east to Colorado, south into New Mexico, a few areas in southwestern Texas, and a few locations in northwestern Mexico. This forest community forms an open to continuous canopy with associated shrubs and herbaceous species. Within the GKR alignment, associated species include shining willow (*Salix lucida* subsp. *lasiandra*), red willow, arroyo willow, California blackberry, and non-native grasses and herbs such as broadleaved pepperweed (*Lepidium latifolium*).

Mapped associations of Fremont Cottonwood Forest include the *Populus fremontii* – *Salix lasiolepis* Association and the *Populus fremontii* – *Salix* (*laevigata*, *lasiolepis*, *lucida* subsp. *lasiandra*) Association. The *Populus fremontii* – *Salix lasiolepis* Association was observed west of Castac Lake in the Castac Valley in one stand. The *Populus fremontii* – *Salix* (*laevigata*, *lasiolepis*, *lucida* subsp. *lasiandra*) Association was observed in several locations in Grapevine Canyon north of Lebec.

Fremont Cottonwood Forest and Woodland in this area are characterized as the Great Basin Cottonwood-Willow Riparian Forest in the CNDDDB community classification system (Holland 1986), and as the *Populus fremontii* – *Fraxinus velutina* – *Salix gooddingii* Forest Alliance according to <http://vegetation.cnps.org/alliance/68>, which provides updates to the CNPS Manual of California Vegetation (Sawyer et al. 2009). *Populus fremontii* – *Fraxinus velutina* – *Salix gooddingii* Forest Alliance has a G4 global rarity ranking (greater than 100 viable occurrences worldwide, and/or more than 32,000 acres [12,950 hectares]) and a S3.2 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]; threatened), according to <http://vegetation.cnps.org/alliance/68>, which provides updates to the CNPS Manual of California Vegetation (Sawyer et al. 2009).

Fremont Cottonwood Forest and Woodland occurs within the GKR alignment in several locations in Grapevine Canyon north of Lebec and west of Castac Lake in the Castac Valley. Fremont Cottonwood Forest and Woodland occupies approximately 3.8 acres (1.5 hectares) of the mapped area, 2.8 acres (1.1 hectares) of which occur within anticipated work areas.

Fremont Cottonwood Forest and Woodland represents a sensitive natural community and a sensitive alliance.

#### **4.1.4 Canyon Live Oak Forest and Woodland (*Quercus chrysolepis* Forest and Woodland Alliance)**

Canyon Live Oak Forest and Woodland is dominated by canyon live oak, an evergreen tree with distinctive golden hairs on the underside of the leaves and on the acorn cap in the Beech Family (Fagaceae); it is also called goldcup oak. Forests dominated by canyon live oak occur primarily in rocky, infertile soils on upland slopes, as well as near streams and in canyon bottoms at elevations ranging from 1,500 to 6,600 feet (450 to 2,000 meters) amsl throughout the California coast ranges and Sierra Nevada.

Canyon live oak is an evergreen tree that occurs in small stands as well as in forests and woodlands. It can be fire-resistant and live to be over 300 years old. Canyon Live Oak Forest often consists of a mixture of tree, shrub, forb, and grass species. In the Project area, the understory under canyon live oak trees was disturbed and dominated by non-native annual grasses along with native rubber rabbitbrush (*Ericameria nauseosa*), native onesided bluegrass, and others. This species has no wetland indicator status (Lichvar et al. 2016).

Within the GKR alignment, Canyon Live Oak Forest is represented by the *Quercus chrysolepis* Association in one location in Crane Canyon between Castac Lake and the Gorman Substation at approximately 4,000 feet (1,220 meters) amsl.

Canyon Live Oak Forest and Woodland is characterized as the Canyon Live Oak Forest in the CNDDDB community classification system (Holland 1986), and as the *Quercus chrysolepis* (tree) Forest Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Quercus chrysolepis* Forest Alliance has a G5 global rarity ranking (demonstrably secure because of its worldwide abundance) and a S5 state rarity ranking (demonstrably secure because of its statewide abundance, according to Sawyer et al. (2009). No state sensitive associations of Canyon Live Oak Forest and Woodland were observed within the GKR alignment (CDFW 2021b).

Canyon Live Oak Forest and Woodland occurs within the GKR alignment between Castac Lake and the Gorman Substation. Canyon Live Oak Forest occupies approximately 2.3 acres (0.9 hectares) of the mapped area. Approximately 0.6 acres (0.2 hectares) of this alliance may be subject to temporary and permanent impacts within anticipated work areas.

#### **4.1.5 Blue Oak Woodland and Forest (*Quercus douglasii* Woodland and Forest Alliance)**

Blue Oak Woodland and Forest is dominated by blue oak, a tall winter-deciduous tree in the Beech Family (Fagaceae); woodlands dominated by blue oak occur primarily on rock outcrops, mountain foothills, and sometimes on valley bottoms from 100 to 3,000 feet (30 to 1,900 meters) amsl in the inner Coast Ranges and western slopes of the Sierra Nevada, as well as in some locations in the Klamath Mountains, Cascade Range, and Transverse Ranges. Its occurrence in a near-continuous band on foothills surrounding the Great Valley has led to calling blue oak a “foothill woodland” indicator species.

Blue oak is a winter deciduous, relatively long-lived tree with distinctive blue-green colored leaves. Blue oaks often occur in open savanna vegetation, as well as in denser woodlands, usually with a mixed shrub and herbaceous understory. Within the GKR alignment, associated tree species intermixed with blue oak in Blue Oak Woodland include valley oak, gray pine (*Pinus sabiniana*, also called ghost pine or foothill pine), and interior live oak, with shrubs such as California buckwheat (*Eriogonum fasciculatum*) and gooseberry (*Ribes*) and an herbaceous understory. Soils tend to be coarse to medium textured and rocky; this species has no wetland indicator status (Lichvar et al. 2016).

Mapped associations of Blue Oak Woodland and Forest include the *Quercus douglasii* – *Aesculus californica* / grass Association, the *Quercus douglasii* – *Pinus sabiniana* Association, the *Quercus douglasii* - *Quercus lobata* Association, the *Quercus douglasii* / *Bromus* spp. – *Daucus pusillus* Association, and the *Quercus douglasii* / *Eriogonum fasciculatum* / herbaceous Association. The *Quercus douglasii* – *Aesculus californica* / grass Association generally occurred along a one-mile (1.6-kilometer) segment of the GKR alignment on north-facing slopes and in associated drainages on the westernmost slopes of the Tehachapi Mountains above Grapevine Canyon. The *Quercus douglasii* – *Pinus sabiniana* Association occurred intermittently between 3,000 and 4,000 feet (914 and 1,220 meters) amsl over a 3.2-mile (5.1-kilometer) segment immediately northwest of Stallion Springs in the Tehachapi Mountains. The *Quercus douglasii* - *Quercus lobata* Association was observed in deeper alluvial soils in the Tehachapi Mountains northwest of Stallion Springs; in Crane Canyon in the Tehachapi Mountains north of Gorman and south of Castac Lake; and on the eastern margin of the San Emigdio Mountains just north of Fort Tejon State Historic Park above Grapevine Canyon. The *Quercus douglasii* / *Bromus* spp. – *Daucus pusillus* Association predominated on slopes and ridges of the Tehachapi Mountains between 2,000 and 4,000 feet (610 and 1,220 meters) amsl over a 7-mile (11.3-kilometer) stretch between Little Sycamore Canyon and Stallion Springs. The *Quercus douglasii* / *Eriogonum fasciculatum* / herbaceous Association was observed in two small stands in the Tehachapi Mountains northwest of Stallion Springs among rocky outcrops.

Blue Oak Woodland and Forest is characterized as Blue Oak Woodland in the CNDDDB community classification system (Holland 1986), and as the *Quercus douglasii* Woodland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Quercus douglasii* Woodland Alliance has a G4 global rarity ranking (greater than 100 viable occurrences worldwide, and/or more than 32,000 acres [12,950 hectares]) and a S4 state rarity ranking (greater than 100 viable occurrences statewide, and/or more than 32,000 acres [12,950 hectares]), according to Sawyer et al. (2009). Of the five observed Blue Oak Woodland and Forest associations, only the *Quercus douglasii* - *Quercus lobata* Association is sensitive (CDFW 2021b); no additional sensitive associations of Blue Oak Woodland were observed within the GKR alignment (CDFW 2021b).

Blue Oak Woodland and Forest occurs within the GKR alignment in the Tehachapi Mountains in several locations, including a 7-mile (11.3-kilometer) stretch between Little Sycamore Canyon and Stallion Springs; on north-facing slopes and in associated drainages on the westernmost slopes of the Tehachapi Mountains above Grapevine Canyon; and in Crane Canyon north of Gorman and south of Castac Lake. It was also observed on the eastern margin of the San Emigdio Mountains just north of Fort Tejon State Historic Park above Grapevine Canyon. Blue Oak Woodland represents the largest native vegetation community within the GKR alignment. It occupies approximately 115.0 acres (46.6 hectares) of the mapped area, 37 acres (15.0 hectares) of which occur within anticipated work areas.



The *Quercus douglasii* - *Quercus lobata* Association of Blue Oak Woodland represents a sensitive natural community and a sensitive association.

#### **4.1.6 Valley Oak Woodland and Forest (*Quercus lobata* Woodland and Forest Alliance)**

Valley Oak Woodland and Forest is dominated by valley oak, an evergreen tree in the Beech Family (Fagaceae). Valley oak occurs in woodlands and savannas in relatively deep soils in moist valley bottoms and on slopes up to 6,000 feet (1,830 meters). Historically, valley oaks were widespread in the Great Central Valley, extending into the Coast Ranges, Sierra Nevada, and Transverse Ranges as well.

Valley oak is a large, winter deciduous tree that has a high tolerance of temporary flooding and also tolerates drought if roots reach subterranean moisture. Trees are quick to germinate and can live up to 500 years. Valley Oak Woodland consists of scattered, large, mature trees growing with amongst shrubs, such as rubber rabbitbrush, as well as grass and forb species in the Project area. Soils tend to be alluvial or from original well-weathered rock; this species has no wetland indicator status (Lichvar et al. 2016).

Mapped associations of Valley Oak Woodland include the *Quercus lobata* / grass Association. The *Quercus lobata* / grass Association occurs in the rolling hills northwest of Stallion Springs; above Grapevine Canyon in the Tehachapi Mountains east of Interstate 5; in Castac Valley west of Castac Lake; and on the north-facing slopes and canyons of the Tehachapi Mountains north of Gorman in Crane Canyon.

Valley Oak Woodland and Forest is characterized as Valley Oak Woodland in the CNDDDB community classification system (Holland 1986), and as the *Quercus lobata* Woodland and Forest Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Quercus lobata* Woodland Alliance has a G3 global rarity ranking (21-100 viable occurrences worldwide, and/or 6,400-32,000 acres [2,590-12,950 hectares]) and a S3 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]; threatened), according to Sawyer et al. (2009).

Valley Oak Woodland and Forest occurs within the GKR alignment northwest of Stallion Springs; above Grapevine Canyon; in Castac Valley west of Castac Lake; on the north-facing slopes and canyons above both sides of Grapevine Creek in the San Emigdio Mountains (west of Grapevine Creek) and the Tehachapi Mountains (east of Grapevine Creek); and in Crane Canyon. Valley Oak Woodland occupies approximately 14.8 acres (6.0 hectares) of the mapped area, 8.9 acres (3.6 hectares) of which occur within anticipated work areas.

Valley Oak Woodland represents a sensitive natural community and a sensitive alliance.

#### **4.1.7 Valley Oak Riparian Forest and Woodland (*Quercus lobata* Riparian Forest and Woodland Alliance)**

Valley Oak Riparian Forest and Woodland is dominated by valley oak, an evergreen tree in the Beech Family (Fagaceae). Valley oak occurs in woodlands and savannas in relatively deep soils in moist valley bottoms and on slopes up to 6,000 feet (1,830 meters). Historically, valley oaks were widespread in the Great Central Valley, extending into the Coast Ranges, Sierra Nevada, and Transverse Ranges as well.

Valley oak is a large, winter deciduous tree that has a high tolerance of temporary flooding and also tolerates drought if roots reach subterranean moisture. Trees are quick to germinate and can live up to 500 years. Valley Oak Woodland consists of scattered, large, mature trees growing with amongst willows in the Project area. Soils tend to be alluvial or from original well-weathered rock. Valley oak has a FACU wetland indicator status, meaning it occurs in wetlands 1-33% of the time (Lichvar et al. 2016).

Mapped associations of Valley Oak Riparian Forest and Woodland include the *Quercus lobata* – *Salix lasiolepis* Association and *Quercus lobata* – *Salix laevigata* Provisional Association. The *Quercus lobata* – *Salix lasiolepis* Association occurs in one location near the entrance to Fort Tejon State Historic Park. The *Quercus lobata* – *Salix laevigata* Provisional Association occurs within Fort Tejon State Historic Park along Grapevine Creek.

Valley Oak Riparian Forest and Woodland is characterized as Valley Oak Woodland in the CNDDDB community classification system (Holland 1986), and as the *Quercus lobata* Riparian Woodland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Quercus lobata* Riparian Woodland Alliance has a G3 global rarity ranking (21-100 viable occurrences worldwide, and/or 6,400-32,000 acres [2,590-12,950 hectares]) and a S3 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]; threatened), according to Sawyer et al. (2009).

Valley Oak Riparian Forest and Woodland occurs within the GKR alignment along Grapevine Creek near and within Fort Tejon State Historic Park. Valley Oak Riparian Forest and Woodland occupies 0.6 acres (0.2 hectares) of the mapped area, 0.3 acres (1.0 hectares) of which occur within anticipated work areas.

Valley Oak Riparian Woodland represents a sensitive natural community and a sensitive alliance.

#### **4.1.8 Mixed Oak Forest and Woodland (*Quercus [agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni]* Forest and Woodland Alliance)**

Within the GKR alignment, there are four oak-dominated alliances, three of which are dominated primarily by one species of oak: Canyon Live Oak Forest, Blue Oak Woodland, and Valley Oak Woodland. All three species, along with California buckeye, form a mixed woodland on the north-facing slopes of the San Emigdio Mountains north of Fort Tejon State Historic Park above 3,000 feet (914 meters) amsl. Associated species consist of scattered shrubs and as well as grass and forb species, especially ripgut brome and soft chess (*Bromus hordeaceus*). This association within the GKR alignment is classified as the mixed oak – *Aesculus californica* / grass Association.

Mixed Oak Forest and Woodland in this area is characterized as Oak Woodland in the CNDDDB community classification system (Holland 1986), and as the *Quercus [agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni]* Forest Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni)* Forest Alliance has a G4 global rarity ranking (greater than 100 viable occurrences worldwide, and/or more than 32,000 acres [12,950 hectares]) and a S4 state rarity ranking (greater than 100 viable occurrences statewide, and/or more than 32,000 acres [12,950 hectares]), according to Sawyer et al. (2009). No state sensitive associations of Mixed Oak Forest were observed within the GKR alignment (CDFW 2021b).



Mixed Oak Forest occurs within the GKR alignment on north-facing slopes above Grapevine Creek north of Fort Tejon State Historic Park. Mixed Oak Forest occupies approximately 20.0 acres (8.1 hectares) of the mapped area, 5.6 acres (2.3 hectares) of which occur within anticipated work areas.

#### **4.1.9 Goodding's Willow - Red Willow Riparian Woodland and Forest (*Salix gooddingii* – *Salix laevigata* Woodland and Forest Alliance)**

Goodding's Willow - Red Willow Riparian Woodland and Forest are dominated by Goodding's willow and red willow, often mixed with other willow and woody species, which form an open to continuous canopy. Goodding's willow occurred in several locations as an associated species but not as a co-dominant. Red willow is a winter-deciduous tree to 50 feet (15 meters) or more in height, with dark reddish-brown bark with many furrows and interconnecting ridges. It has an irregular open crown at maturity and slender light to dark orange-brown branchlets. Leaves are lance-shaped, with minute teeth or scallops along the margins and a yellow mid-vein, with upper surface darker green and lower surface paler and minutely hairy; this species also has overlapping bud scales, an unusual trait for most willows. Both Goodding's willow and red willow have a wetland indicator status of FACW, meaning that both species usually occur in wetlands (67-99 percent of the time), but are occasionally found in non-wetlands (Lichvar et al. 2016).

Goodding's Willow - Red Willow Riparian Woodland and Forest occur along rivers and floodplains below 5,600 feet (1,700 meters) amsl in much of California and southern Oregon, east to western and central/southern Nevada, southern Utah, Arizona, northwestern New Mexico, and northwestern Mexico (Baja California). Goodding's Willow - Red Willow Riparian Woodlands often form a dense canopy and may be mixed with other riparian trees as well as associated understory shrubs and herbaceous species such as arroyo willow, sandbar willow (*Salix exigua*), giant creek nettle (*Urtica dioica* subsp. *holosericea*), and other herbaceous forbs and graminoids.

Mapped associations of Goodding's Willow - Red Willow Riparian Woodland and Forest include the *Salix laevigata* Association and the *Salix laevigata* – *Salix lasiolepis* Association. The *Salix laevigata* Association was observed along the Kern River immediately adjacent to the Kern River Substation, along Grapevine Creek at Fort Tejon State Historic Park, in a small drainage north of the Gorman Substation, and in the Castac Valley west of Castac Lake. The *Salix laevigata* – *Salix lasiolepis* Association was observed in one stand along Grapevine Creek at Fort Tejon State Historic Park.

Goodding's Willow - Red Willow Riparian Woodland and Forest in this area are characterized as Great Valley Mixed Riparian Forest in the CNDDB community classification system (Holland 1986), and as the *Salix gooddingii* – *Salix laevigata* Woodland Alliance according to <http://vegetation.cnps.org/alliance/520>, which provides updates to the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Salix gooddingii* – *Salix laevigata* Woodland Alliance has a G3 global rarity ranking (21-100 viable occurrences worldwide, and/or 6,400-32,000 acres [2,590-12,950 hectares]) and a S3 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]; threatened), according to Sawyer et al. (2009).

Goodding's Willow - Red Willow Riparian Woodland and Forest occur within the GKR alignment adjacent to the Kern River 1 Hydroelectric Substation, along Grapevine Creek at Fort Tejon State Historic Park, in a small drainage north of the Gorman Substation, and in the Castac Valley west of Castac Lake.

Goodding's Willow - Red Willow Riparian Woodlands occupy approximately 4.8 acres (1.9 hectares) of the mapped area, 2.2 acres (0.9 hectares) of which occur within anticipated work areas.

Goodding's Willow - Red Willow Riparian Woodlands represent a sensitive natural community and a sensitive alliance.

#### **4.1.10 Shining Willow Groves (*Salix lucida* Woodland Alliance)**

Shining Willow Groves are dominated by shining willow, also called Pacific willow or yellow willow. Shining willow occurs in mixed riparian forests and woodlands within the GKR alignment, occasionally occurring in large enough stands to be mapped as an alliance. Shining willow is a winter-deciduous tree that reaches 60 feet (18 meters) in height or more at maturity, with an unsymmetrical rounded crown and gray to brownish bark that becomes fissured and darkens in age. Leaves are long-pointed and lance-shaped, with shiny green upper surfaces, whitish lower surfaces, and minute teeth along margins that are often tipped with tiny glands; the leaf stalks (petioles) also often bear glands. Like other willows and cottonwoods, male and female flowers are produced on different trees in spring. Shining willow is relatively short-lived, surviving for 40 to 50 years before senescing. Shining willow has a wetland indicator status of FACW, meaning that it usually occurs in wetlands (67-99 percent of the time), but is occasionally found in non-wetlands (Lichvar et al. 2016).

Shining Willow Groves occur along rivers and floodplains below 8,500 feet (2,600 meters) amsl from California north to Alaska, east to the Rocky Mountains in Canada and the United States and east to Saskatchewan. Shining willow occurs along streambanks and in drainages, often in well-drained loams and river gravel. This woodland community forms a fairly dense canopy with other willow species as well as Fremont cottonwood, along with associated understory shrubs and herbaceous species, especially giant nettle, Baltic rush (*Juncus balticus*), slender sedge, alkali rye, yerba mansa, deer grass, and cottonbatting plant (*Pseudognaphalium stramineum*). Mapped associations of Shining Willow Groves include the *Salix lucida* subsp. *lasiandra* Association and the *Salix lucida* subsp. *lasiandra* / *Urtica urens* – *Urtica dioica* Association. The *Salix lucida* subsp. *lasiandra* Association was observed adjacent to Castac Lake and its associated drainage, Crane Canyon Creek. The *Salix lucida* subsp. *lasiandra* / *Urtica urens* – *Urtica dioica* Association was observed in a tributary to Gorman Creek near the Gorman Substation.

Shining Willow Groves in this area are characterized as Great Valley Mixed Riparian Forest in the CNDDDB community classification system (Holland 1986), and as the *Salix lucida* Woodland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Salix lucida* Woodland Alliance has a G4 global rarity ranking (greater than 100 viable occurrences worldwide, and/or more than 32,000 acres [12,950 hectares]) and a S3.2 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]; threatened), according to Sawyer et al. (2009).

Shining Willow Groves occur within the GKR alignment adjacent to Castac Lake and its associated drainage, Crane Canyon Creek, and was also present in a tributary to Gorman Creek near the Gorman Substation. Shining Willow Groves occupy approximately 2.6 acres (1.1 hectares) of the mapped area, 1.3 acres (0.5 hectares) occur within anticipated work areas.

Shining Willow Groves represent a sensitive natural community and a sensitive alliance.

## 4.2 Shrubland Vegetation

Shrubs are generally defined as woody plants less than 20 feet (6 meters) in height at maturity that usually bear multiple trunks. Twelve shrubland vegetation alliances were recorded within the GKR alignment: Cheesebush – Sweetbush Scrub, Mulefat Thickets, Wedge Leaf Ceanothus/Buck Brush Chaparral, Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub, California Joint-fir - Longleaf Joint-fir Scrub, Narrowleaf Goldenbush – Bladderpod Scrub, Rubber Rabbitbrush Scrub, California Buckwheat Scrub, Scalebroom Scrub, Tucker Oak Chaparral, Arroyo Willow Thickets, and Tamarisk Thickets.

Four shrubland alliances were found in moist or alluvial substrates near drainages and water courses: Arroyo Willow Thickets, Mulefat Scrub, Scalebroom Scrub, and Tamarisk Thickets.

Six shrubland alliances occurred on upland slopes and rocky areas, especially on south-facing exposures, including Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub, California Buckwheat Scrub, Narrowleaf Goldenbush – Bladderpod Scrub, Wedge-leaf Ceanothus Chaparral, and Tucker Oak Chaparral.

Several observed shrubland alliances extend into desert areas as well as into the Project region: California Joint-fir - Longleaf Joint-fir Scrub, Cheesebush - Sweetbush Scrub, and Rubber Rabbitbrush Scrub, along with previously mentioned Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub, California Buckwheat Scrub, Narrowleaf Goldenbush – Bladderpod Scrub, and Scalebroom Scrub.

Thirteen associations were mapped within these shrubland alliances.

### 4.2.1 Cheesebush - Sweetbush Scrub (*Ambrosia salsola* – *Bebbia juncea* Shrubland Alliance)

Cheesebush - Sweetbush Scrub is dominated by cheesebush and sweetbush, shrubs in the Sunflower Family (Asteraceae). Shrublands dominated by cheesebush and sweetbush occur primarily in valleys, flats, arroyos, intermittent channels, and washes to 5,200 feet (1,600 meters) amsl. Cheesebush - Sweetbush Scrub is especially widespread in the Mojave and Sonoran Deserts and adjacent mountain ranges. It also occurs in the washes surrounding the southern end of the Great Central Valley, draining the interior Coast Ranges from the Carrizo Plain and Temblor Range south to the north-facing washes of the San Emigdeo Mountains; it also occurs in the southwestern Great Basin Desert.

Cheesebush is a short-lived drought-deciduous shrub with a shallow root system that often occurs in scattered patches along desert washes and drainages; within the GKR alignment, cheesebush was often the only shrub present, although occasionally scalebroom (*Lepidospartum squamatum*) or mulefat would occur within this vegetation. A range of native annual and perennial forbs and non-native species were also present, including fiddleneck (*Amsinckia intermedia*), miniature lupine (*Lupinus bicolor*), and others. Sweetbush has green, broom-like stems and is also drought deciduous but was not observed within the GKR alignment. Soils tend to be alluvial, sandy, and gravelly. Cheesebush and sweetbush lack any wetland indicator status (Lichvar et. al 2016).

Within the GKR alignment, Cheesebush – Sweetbush Scrub is represented by the *Ambrosia salsola* Association, which was documented on foothill slopes and in ephemeral drainages east of the Kern River in the southern Sierra Nevada and in one location near Comanche Point in the Tehachapi Mountains.

Cheesebush - Sweetbush Scrub is characterized as the Mojave Mixed Woody Scrub in the CNDDDB community classification system (Holland 1986), and as the *Ambrosia salsola* - *Bebbia juncea* Shrubland Alliance, according to <http://vegetation.cnps.org/alliance/112>, which provides updates to Sawyer et al. (2009). The *Ambrosia salsola* - *Bebbia juncea* Shrubland Alliance has a G4 global rarity ranking (greater than 100 viable occurrences worldwide, and/or more than 32,000 acres [12,950 hectares]) and a S4 state rarity ranking (greater than 100 viable occurrences statewide, and/or more than 32,000 acres [12,950 hectares]); apparently secure), according to <http://vegetation.cnps.org/alliance/112>, which provides updates to Sawyer et al. (2009). No state sensitive associations of Cheesebush - Sweetbush Scrub were observed within the GKR alignment (CDFW 2021b).

Cheesebush - Sweetbush Scrub occupies approximately 10.7 acres (4.3 hectares) of the mapped area within the GKR alignment in two locations: on foothill slopes and in ephemeral drainages east of the Kern River in the southern Sierra Nevada, and near Comanche Point in the Tehachapi Mountains; 4.0 acres (1.6 hectares) of this alliance occurs within anticipated work areas.

#### **4.2.2 Mulefat Thickets (*Baccharis salicifolia* Shrubland Alliance)**

Mulefat Thickets are dominated by mulefat, a shrub in the Sunflower Family (Asteraceae). Thickets dominated by mulefat occur in canyon bottoms, floodplains, irrigation ditches, lake margins, and stream channels up to 4,100 feet (1,250 meters) amsl with distribution across California, Arizona, Texas and Mexico.

Mulefat is a multi-branched evergreen shrub with narrow willow-like leaves that have widely spaced, fine teeth and shiny upper surfaces. Mulefat Thickets occur in both seasonally or intermittently flooded drainages, and stands are inherently variable depending on the amount of inundation and scouring. Associated species found within the GKR alignment include rubber rabbitbrush and tarragon (*Artemisia dracunculus*). Soils consist of mixed alluvium; this species has a wetland indicator status of FAC (Lichvar et al. 2016), meaning that it is a plant that is equally likely to occur in wetlands and non-wetlands (34-66 percent of the time, Lichvar et al. 2016).

Within the GKR alignment, Mulefat Thickets are represented by the *Baccharis salicifolia* Association, which occurred in four drainages within the alignment: along El Paso Creek in the San Joaquin Valley south of Comanche Point; just southeast of Grapevine in a wash; in a drainage on the west side of Grapevine Mountain above Grapevine Canyon; and in a seasonally-moist location near a tributary to Gorman Creek.

Mulefat Thickets are characterized as the Mulefat Scrub in the CNDDDB community classification system (Holland 1986), and as the *Baccharis salicifolia* Shrubland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Baccharis salicifolia* Shrubland Alliance has a G5 global rarity ranking (demonstrably secure because of its worldwide occurrence) and a S4 state rarity ranking (greater than 100 viable occurrences statewide, and/or more than 32,000 acres [12,950 hectares]); apparently secure), according to Sawyer et al. (2009). No state sensitive associations of Mulefat Thickets were observed within the GKR alignment (CDFW 2021b).

Mulefat Thickets occupies approximately 0.9 acres (0.4 hectares) of area within the GKR alignment, where it occurred in four drainages, including El Paso Creek in the San Joaquin Valley and three drainages in the Tehachapi Mountains: just southeast of Grapevine; the west side of Grapevine Mountain

above Grapevine Canyon; and near a tributary to Gorman Creek; 0.4 acres (0.2 hectares) occur within within anticipated work areas.

#### **4.2.3 Wedge Leaf Ceanothus Chaparral, Buck Brush Chaparral (*Ceanothus cuneatus* Shrubland Alliance)**

Wedge-leaf Ceanothus/Buckbrush Chaparral is dominated by wedge-leaved ceanothus, also called buckbrush, a tall late-winter to spring-blooming evergreen erect shrub in the Buckthorn Family (Rhamnaceae). Shrublands dominated by wedge-leaved ceanothus occur primarily along ridges and upper slopes from 50 to 7,000 feet (15 to 2,133 meters) amsl along the entire California coast, the Coast Ranges, the Southern Cascades, and the Klamath Mountains north into Oregon to the Washington border.

Wedge-leaf ceanothus is a tough, intricately-branched, drought-tolerant shrub with leathery opposite leaves and clusters of white flowers from February through April. Chaparral dominated by wedge-leaved ceanothus tends to occur on south and west-facing slopes, often with other woody associates, such as gray pine, valley oak, oak gooseberry, big sagebrush, and California gooseberry (*Ribes californicum*) in the Project area. Soils tend to be thin and rocky; this species has no wetland indicator status (Lichvar et al. 2016).

Within the GKR alignment, Wedge-leaf Ceanothus/Buckbrush Chaparral is represented by the *Ceanothus cuneatus* Association, which was observed one mile (1.6 kilometers) northwest of Stallion Springs in the Tehachapi Mountains.

Wedge-leaf Ceanothus/Buckbrush Chaparral is characterized as Buckbrush Chaparral in the CNDDDB community classification system (Holland 1986), and as the *Ceanothus cuneatus* Shrubland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Ceanothus cuneatus* Shrubland Alliance has a G4 global rarity ranking (greater than 100 viable occurrences worldwide, and/or more than 32,000 acres [12,950 hectares]) and a S4 state rarity ranking (greater than 100 viable occurrences statewide, and/or more than 32,000 acres [12,950 hectares]), according to Sawyer et al. (2009). No state sensitive associations of Wedge-leaf Ceanothus/Buckbrush Chaparral were observed within the GKR alignment (CDFW 2021b).

Wedge-leaf Ceanothus/Buckbrush Chaparral occurs within the GKR alignment in the Tehachapi Mountains less than a mile north of Stallion Springs and occupies approximately 1.6 acres (0.6 hectares) of the mapped area, of which 0.9 acres (0.4 hectares) occurs within anticipated work areas.

#### **4.2.4 Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub (*Encelia [actonii, virginensis]* - *Viguiera reticulata* Shrubland Alliance)**

Acton's and Virgin River Brittle Brush - Net-veined Goldeneye Scrub is dominated by Acton's and Virgin River brittle bush, two species of drought-deciduous shrubs in the Sunflower Family (Asteraceae) and by net-veined goldeneye, a shrub in the Sunflower Family (Asteraceae) also classified as *Bahiopsis reticulata* (Baldwin et al. 2009). Acton's encelia has a broad distribution on rocky slopes in the southern and eastern Sierra Nevada, in the Transverse and Peninsular Ranges of southern California, and in

desert mountain ranges from 980 to 6,200 feet (300 to 1,900 meters) amsl. Virgin River encelia occurs primarily in the eastern Mojave Desert through desert mountains to southwest Utah, southwestern New Mexico, and Baja California. Net-veined goldeneye does not occur in the Project area; it occurs in Inyo and northern San Bernardino counties into western Nevada. Only the Acton's encelia Association of this alliance occurred in the Project area.

Acton's encelia is a much-branched shrub reaching 4 feet (1.2 meters) in height that bears alternate, ovate, silvery leaves with three distinct veins. Flowers include 14-25 yellow rays surrounding yellow disk flowers and usually appear in spring. Associated native species on south-facing slopes supporting Acton's encelia within the GKR alignment include cheesebush, and other seasonal herbaceous species such as fiddleneck and caterpillar phacelia (*Phacelia cicutaria*). Soils tend to be well-drained cobbles and gravels. Acton's encelia has no wetland indicator status (Lichvar et al. 2016).

Acton's and Virgin River Brittle Brush - Net-veined Goldeneye Scrub is represented solely by the *Encelia actoni* Association within the GKR alignment, where it occurs on rocky west- and south-facing slopes above the Kern River within a 1.5-mile (2.4-kilometer) stretch in the southern Sierra Nevada.

Acton's and Virgin River Brittle Brush - Net-veined Goldeneye Scrub is characterized as the Mojave Desert Wash Scrub in the CNDDDB community classification system (Holland 1986), and as the *Encelia (actonii, virginensis) - Viguiera reticulata* Shrubland Alliance, according to <http://vegetation.cnps.org/alliance/559>, which provides updates to the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Encelia (actonii, virginensis) - Viguiera reticulata* Shrubland Alliance has a G3 global rarity ranking (21-100 viable occurrences worldwide, and/or more 6,400-32,000 acres [2,590-12,950 hectares]) and a S3 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]), according to Sawyer et al. (2009) and the online treatment for this alliance at <http://vegetation.cnps.org/alliance/559>.

Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub occurs in the southern Sierra Nevada on rocky west- and south-facing slopes above the Kern River. Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub occupies approximately 16.4 acres (6.6 hectares) of the mapped area, of which 4.5 acres (1.8 hectares) occur within anticipated work areas.

Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub represents a sensitive natural community and a sensitive alliance.

#### **4.2.5 California Joint-fir - Longleaf Joint-fir Scrub (*Ephedra californica* – *Ephedra trifurca* Shrubland Alliance)**

California Joint-fir - Longleaf Joint-fir Scrub is dominated by California joint-fir and/or longleaf joint-fir, dioecious shrubs in the Ephedra Family (Ephedraceae); species of *Ephedra* in western North America are also known as Mormon-tea. Shrublands dominated by California joint-fir and longleaf joint-fir occur primarily on intermittently flooded arroyos, washes, and adjacent to alluvial fans or residual dunes and xeric fine-grained sedimentary substrates from 650 to 4,000 feet (200 to 1,200 meters) amsl in the southern end of the San Joaquin Valley; the inner Coast, Transverse, and Peninsular Ranges of central and southern California; the Mojave and Sonoran Deserts; and a few outlying locations.

California joint-fir is the dominant species of *Ephedra* in the one location where this natural community occurs within the GKR alignment; it is a slow-growing shrub that produces large colonies over time. Bakersfield cactus



(*Opuntia basilaris* var. *treleasei*), a Federally Endangered (FE) and California Endangered (CE) species, is codominant with California joint-fir on the slopes bordering Caliente Wash within the GKR alignment, along with scattered native and non-native herbaceous species. Soils tend to be coarse to medium sands, loamy sands, and sandy clay loams; these species have no wetland indicator status (Lichvar et al. 2016).

Within the GKR alignment, California Joint-fir - Longleaf Joint-fir Scrub is represented by the *Ephedra californica* / annual – perennial herb Association. This association occurs in one location where the GKR alignment crosses Caliente Wash, which drains in a southwest direction from the southern Sierra Nevada.

California Joint-fir – Longleaf Joint-fir Scrub is characterized as Mojave Mixed Woody Scrub in the CNDDDB community classification system (Holland 1986) and as the *Ephedra californica* - *Ephedra trifurca* Shrubland Alliance, according to <http://vegetation.cnps.org/alliance/190>, which provides updates to Sawyer et al. (2009). The *Ephedra californica* – *Ephedra trifurca* Shrubland Alliance has a G5 global rarity ranking (demonstrably secure because of its worldwide occurrence) and a S4 state rarity ranking (greater than 100 viable occurrences statewide, and/or more than 32,000 acres [12,950 hectares]); apparently secure), according to <http://vegetation.cnps.org/alliance/190>, which provides updates to Sawyer et al. (2009). However, the *Ephedra californica* / Annual – Perennial Herb Association has a S3 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]) and is a sensitive association within California Joint-fir – Longleaf Joint-fir Scrub (CDFW 2021b). Codominance by Bakersfield cactus adds to the sensitivity of this vegetation type.

California Joint-fir - Longleaf Joint-fir Scrub occurs on the slopes bordering Caliente Wash and occupies approximately 4.0 acres (1.6 hectares) of the mapped area, of which 2.2 acres (0.9 hectares) occurs within anticipated work areas.

The *Ephedra californica* / Annual – Perennial Herb Association represents a sensitive natural community within the California Joint-fir – Longleaf Joint-fir Scrub alliance.

#### **4.2.6            Narrowleaf Goldenbush – Bladderpod Scrub (*Ericameria linearifolia* – *Cleome isomeris* Shrubland Alliance)**

Narrowleaf Goldenbush – Bladderpod Scrub is dominated by two rounded shrubs, narrowleaf goldenbush in the Sunflower Family (Asteraceae) and bladderpod in the Spiderflower Family (Cleomaceae). Shrublands dominated by narrowleaf goldenbush and bladderpod occur primarily on dry slopes and ridges with shallow, often well-drained soils between 330 and 6,560 feet (100 and 2,000 meters) amsl in the inner Coast Ranges, southern Sierra Nevada, Tehachapi Mountains, and the upper Mojave Desert.

Narrowleaf goldenbush is a many-branched shrub reaching 5 feet (1.5 meters) in height that bears linear, alternate, gland-dotted green leaves and flower heads that include 12-28 yellow rays surrounding yellow disk flowers that appear in late winter through the spring months. Bladderpod is also a many-branched shrub reaching 5 feet (1.5 meters) in height; it bears alternate, glaucous, palmately-compound leaves divided into 3 to 5 leaflets that are often ill-smelling. Flowers appear from winter through spring, followed by distinctive inflated, pendant fruits. Associated woody species in Narrowleaf Goldenbush – Bladderpod Scrub include California buckwheat, rubber rabbitbrush, purple needlegrass (*Stipa pulchra*), onesided bluegrass, and seasonal herbaceous species. In some locations, only narrowleaf goldenbush predominated while in other locations bladderpod predominated. Soils tend to be well-drained cobbles and gravels. These shrubs lack any wetland indicator status (Lichvar et al. 2016).

One association of the Narrowleaf Goldenbush – Bladderpod Scrub was observed within the GKR alignment, the *Cleome isomeris* Association. The *Cleome isomeris* Association was observed in the Tehachapi Mountains north of Comanche Point and Little Sycamore Creek and on the exposed slopes bordering Grapevine Canyon between Grapevine and Digier Road.

Narrowleaf Goldenbush – Bladderpod Scrub is characterized as Mojave Mixed Woody Scrub in the CNDDDB community classification system (Holland 1986), and as the *Ericameria linearifolia* – *Cleome isomeris* Shrubland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Ericameria linearifolia* – *Cleome isomeris* Shrubland Alliance has a G4 global rarity ranking (greater than 100 viable occurrences worldwide, and/or more than 32,000 acres [12,950 hectares]) and a S4 state rarity ranking (greater than 100 viable occurrences statewide, and/or more than 32,000 acres [12,950 hectares]), according to Sawyer et al. (2009). Narrowleaf Goldenbush – Bladderpod Scrub is not treated as sensitive by CDFW (2021b), but the *Cleome isomeris* Association is included on the list of California Sensitive Natural Communities (CDFW 2021b).

Narrowleaf Goldenbush – Bladderpod Scrub occupies approximately 30.5 acres (12.3 hectares) of the mapped area in the Tehachapi Mountains north of Comanche Point and on exposed slopes bordering Grapevine Canyon between Grapevine and Digier Road, of which 9.4 acres (3.8 hectares) occur within anticipated work areas.

The *Cleome isomeris* Association of Narrowleaf Goldenbush – Bladderpod Scrub represents a sensitive natural community.

#### **4.2.7 Rubber Rabbitbrush Scrub (*Ericameria nauseosa* Shrubland Alliance)**

Rubber Rabbitbrush Scrub is dominated by rubber rabbitbrush, a shrub in the Sunflower Family (Asteraceae). Shrublands dominated by rubber rabbitbrush occur throughout the Intermountain West and arid Great Plains, from California north into Canada, east to North Dakota, and south into northwest Mexico, with 21 name varieties, often associated with mountainous areas up to 10,498 feet (3,200 meters) amsl.

Rubber rabbitbrush is a fast-growing, multi-branched shrub with deep taproots and narrow leaves with surface hairs that give it a silvery appearance; it is tolerant of disturbed conditions and reseeds rapidly. Associated species found within the GKR alignment include alkali goldenbush (*Isocoma acradenia*), purple needlegrass, onesided bluegrass, and other native shrubs and native and non-native grasses and herbaceous species, depending on the location. Soils may be well-drained sands and gravels, as well as silts and other fine-textured valley soils. Rubber rabbitbrush has no wetland indicator status (Lichvar et al. 2016).

Within the GKR alignment, Rubber Rabbitbrush Scrub is represented by the *Ericameria nauseosa* Association. The *Ericameria nauseosa* Association was documented intermittently in the San Emigdio Mountains intermittently between Digier Road south to Lebec Oaks Road and from the west side of Castac Lake south to Crane Canyon on the north-facing slopes of the Tehachapi Mountains.

Rubber Rabbitbrush Scrub is characterized as the Rabbitbrush Scrub in the CNDDDB community classification system (Holland 1986), and as the *Ericameria nauseosa* Shrubland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Ericameria nauseosa* Shrubland Alliance has a



G5 global rarity ranking (demonstrably secure because of its worldwide abundance) and a S5 state rarity ranking (demonstrably secure because of its statewide abundance), according to Sawyer et al. (2009). The *Ericameria nauseosa* – *Nassella pulchra* Provisional Association is not addressed in the CNPS Manual of California Vegetation (Sawyer et al. 2009) or online updates and could be categorized as the *Ericameria nauseosa* Association, which is not sensitive. No state sensitive associations of Rubber Rabbitbrush Scrub were observed within the GKR alignment (CDFW 2021b).

Rubber Rabbitbrush Scrub occupies approximately 22.4 acres (9.1 hectares) of area mapped along the San Emigdio Mountains and near Castac Lake and in Crane Canyon, of which 16.4 acres (6.6 hectares) occur within anticipated work areas.

#### **4.2.8 California Buckwheat Scrub (*Eriogonum fasciculatum* Shrubland Alliance)**

California Buckwheat Scrub is dominated by California buckwheat, a shrub in the Buckwheat Family (Polygonaceae). California buckwheat has a widespread distribution in the southern half of California, with several named subspecies. California buckwheat occurs in a variety of habitats, including creosote bush scrub, sagebrush scrub, pinyon juniper woodland, coastal sage scrub, and is common on well-drained slopes and in ephemeral drainages or more permanent drainages at the rocky upland margins below 8,200 feet (2,500 meters) amsl throughout the Coast Ranges extending from Trinity County south to Mexico; the Sierra Nevada and desert mountain ranges; the Transverse and Peninsular ranges; the Sonoran, Mojave, and southern Great Basin deserts; and arid or semi-arid locations in valleys throughout this region. In locations where California buckwheat is a dominant plant (> 50 percent relative cover, or important component of a shrub mix), the vegetation may be called California Buckwheat Scrub.

California buckwheat is an intricately-branched spreading shrub with elongate stems bearing clusters of mostly evergreen leaves and distinctive pinkish flower clusters at the tips that age to a rusty-red color; flowering occurs from spring into early fall. Associated woody species occurring in California Buckwheat Scrub within the GKR alignment include bladderpod, chaparral yucca (*Hesperoyucca whipplei*), wand buckwheat (*Eriogonum elongatum*), and rubber rabbitbrush, along with herbaceous perennials such as California milkweed (*Asclepias californica*), Douglas' milkvetch (*Astragalus douglasii*), and blue dicks (*Dichelostemma capitatum*), as well as seasonal annuals. Soils tend to be thin, well-drained, and coarse; this species has no wetland indicator status (Lichvar et al. 2016).

One mapped association of California Buckwheat Scrub, the *Eriogonum fasciculatum* Association was observed in the GKR alignment in the foothills of the Tehachapi Mountains north of Little Sycamore Canyon and southeast of Arvin.

California Buckwheat Scrub is characterized as Alluvial Fan Chaparral in the CNDDDB community classification system (Holland 1986), and as the *Eriogonum fasciculatum* Shrubland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Eriogonum fasciculatum* Shrubland Alliance has a G5 global rarity ranking (demonstrably secure because of its worldwide abundance) and a S5 state rarity ranking (demonstrably secure because of its statewide abundance), according to Sawyer et al. (2009). No state sensitive associations of California Buckwheat Scrub were observed within the GKR alignment (CDFW 2021b).

California Buckwheat Scrub occupies approximately 6.2 acres (2.5 hectares) of the mapped area in the foothills of the Tehachapi Mountains southeast of Arvin, California, of which 3.3 acres (1.3 hectares) occur within anticipated work areas.

#### **4.2.9 Scalebroom Scrub (*Lepidospartum squamatum* Shrubland Alliance)**

Scalebroom Scrub is dominated by scalebroom, a largely leafless shrub in the Sunflower Family (Asteraceae). Shrublands dominated by scale-broom occur primarily on intermittently flooded, low-gradient alluvial deposits along streams, washes, and fans from 165 to 5,000 feet (50 to 1,500 meters) amsl in many arid and often rocky washes extending from the inner Coast Ranges in Alameda County, south through the Coast Ranges of central California, the Transverse and Peninsular ranges, the southern half of the Great Central Valley, the southern Sierra Nevada, the Mojave Desert, Sonoran Desert, and isolated additional locations; it also occurs in Baja California.

Scalebroom is a stiff-branched, green-stemmed shrub that produces small scale-like leaves that are appressed against the stem; juvenile leaves are longer and hairy. Scalebroom flowers in late summer into fall. Scalebroom scrub includes a mix of shrubs in the Project area, including cheesebush, rubber rabbitbrush, mulefat and others, along with a range of herbaceous species, such as fiddleneck. Scalebroom has a wetland indicator status of facultative upland (FACU; Lichvar et al. 2016), a facultative upland plant that typically occurs in non-wetland habitats but may frequently occur in standing water or saturated soils.

Within the GKR alignment, Scalebroom Scrub is represented by the *Lepidospartum squamatum* / ephemeral annuals Association. It was documented on foothill slopes and in drainages east of the Kern River in the southern Sierra Nevada and in Tejon Creek near Comanche Point in the Tehachapi Mountains.

Scalebroom Scrub is characterized as the Mojave Desert Wash Scrub in the CNDDDB community classification system (Holland 1986), and as the *Lepidospartum squamatum* Shrubland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Lepidospartum squamatum* Shrubland Alliance has a G3 global rarity ranking (21-100 viable occurrences worldwide, and/or 6,400-32,000 acres [2,590-12,950 hectares]) and a S3 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]), according to Sawyer et al. (2009).

Scalebroom Scrub occupies approximately 24.5 acres (9.9 hectares) of the mapped area and occurs within the GKR alignment on foothill slopes and in drainages east of the Kern River in the southern Sierra Nevada and in Tejon Creek near Comanche Point in the Tehachapi Mountains, of which 13.7 acres (5.5 hectares) occur within anticipated work areas.

Scalebroom Scrub represents a sensitive natural community and a sensitive alliance.

#### **4.2.10 Tucker Oak Chaparral (*Quercus john-tuckeri* Shrubland Alliance)**

Tucker Oak Chaparral is dominated by Tucker oak, a shrub in the Oak Family (Fagaceae). Shrublands dominated by Tucker oak occur primarily on slopes and ridges at elevations between 3,000 and 6,800 feet (900 to 2,090 meters) amsl in the Coast and Transverse ranges of central and southern California, including the Tehachapi Mountains and San Emigdio and Temblor ranges.

Tucker oak is a slow-growing, long-lived evergreen shrub that can eventually grow to be a small tree. It bears small toothed grayish leaves covered with star-shaped hairs with 10 to 12 rays. Tucker Oak Chaparral often intermingles with chaparral and oak woodland vegetation, and within the GKR alignment it occurs with occasional California buckeye and chaparral yucca. Soils tend to be well-drained; this species has no wetland indicator status (Lichvar et al. 2016).

Within the GKR alignment, Tucker Oak Chaparral is represented by the *Quercus john-tuckeri* Association. It was observed in one location on a ridgetop at 3,300 feet (1,006 meters) amsl in the San Emigdio Mountains northwest of Fort Tejon State Historic Park.

Tucker Oak Chaparral is characterized as the Southern North Slope Chaparral in the CNDDB community classification system (Holland 1986), and as the *Quercus john-tuckeri* Shrubland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Quercus john-tuckeri* Shrubland Alliance has a G4 global rarity ranking (greater than 100 viable occurrences worldwide, and/or more than 32,000 acres [12,950 hectares]); apparently secure) and a S4 state rarity ranking (greater than 100 viable occurrences statewide, and/or more than 32,000 acres [12,950 hectares]); apparently secure), according to Sawyer et al. (2009). No state sensitive associations of Tucker Oak Chaparral were observed within the GKR alignment (CDFW 2021b).

Tucker Oak Chaparral occupies approximately 0.7 acres (0.3 hectares) of the mapped area and occurs within the GKR alignment in the San Emigdio Mountains northwest of Fort Tejon State Historic Park, of which 0.6 acres (0.2 hectares) of this alliance occurs within anticipated work areas.

#### **4.2.11 Arroyo Willow Thickets (*Salix lasiolepis* Shrubland Alliance)**

Arroyo Willow Thickets are dominated by arroyo willow, a large shrub to small tree in the Willow Family (Salicaceae) that can reach 30 feet (10 meters) or more in height under favorable conditions. Shrublands dominated by arroyo willow occur primarily on the banks and benches of streams and rivers, as well as seeps along slopes and ephemeral drainages below 7,200 feet (2,170 meters) amsl if sufficient moisture is present at depth. It can be found throughout California and extends north to British Columbia and east from the western half of Idaho south to Texas and into Mexico.

Arroyo willow is a tall shrub to small tree that often grows on sites that are intermittently or seasonally flooded. Arroyo Willow Thickets consist of scattered multi-trunked arroyo willows with associated trees, shrubs, and herbaceous species in the Project area. Associated woody species occurring in Arroyo Willow Thickets in the Project area include Fremont cottonwood and shining willow, and associated herbaceous species include slender sedge (*Carex praegracilis*), alkali rye (*Elymus triticoides*), and Baltic rush. Arroyo Willow has a wetland indicator status of FACW (Lichvar et al. 2016).

Within the GKR alignment, Arroyo Willow Thickets are represented by the *Salix lasiolepis* Association and the *Salix lasiolepis* – *Salix lucida* Association. The *Salix lasiolepis* Association was observed in two general locations: near the Kern River Substation along the Kern River margins and in south-facing drainages below the crest of the southern Tehachapi Mountains in tributaries to Gorman Creek immediately north of the Gorman Substation. The *Salix lasiolepis* – *Salix lucida* Association was observed in one general location along Grapevine Creek between Fort Tejon State Historic Park and Lebec.

Arroyo Willow Thickets are characterized as the Great Valley Willow Scrub and Southern Willow Scrub in the CNDDB community classification system (Holland 1986), and as the *Salix lasiolepis* Shrubland

Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Salix lasiolepis* Shrubland Alliance has a G4 global rarity ranking (greater than 100 viable occurrences worldwide, and/or more than 32,000 acres [12,950 hectares]: apparently secure) and a S4 state rarity ranking (greater than 100 viable occurrences statewide, and/or more than 32,000 acres [12,950 hectares]: apparently secure), according to Sawyer et al. (2009). Arroyo Willow Thickets are not treated as sensitive by CDFW (2021a), but the *Salix lasiolepis* Association and the *Salix lasiolepis* – *Salix lucida* Association are included on the list of California Sensitive Natural Communities, with a S3? ranking for the *Salix lasiolepis* – *Salix lucida* Association (CDFW 2021b). Arroyo Willow Thickets occur within the GKR alignment near the Kern River 1 Hydroelectric Substation along the Kern River; along Grapevine Creek between Fort Tejon State Historic Park and Lebec; and in tributaries to Gorman Creek.

Arroyo Willow Thickets occupy approximately 1.1 acres (0.4 hectares) of the mapped area, of which 1.0 acres (0.4 hectares) of this alliance occurs within anticipated work areas.

The *Salix lasiolepis* Association and the *Salix lasiolepis* – *Salix lucida* Association of Arroyo Willow Thickets represent sensitive natural communities and sensitive associations.

#### **4.2.12 Tamarisk Thickets (*Tamarix* spp. Semi-Natural Stands)**

Tamarisk Thickets are dominated by tamarisk, a genus that includes highly invasive shrubs and trees in the Tamarisk Family (Tamaricaceae). Vegetation dominated by tamarisk occur primarily on arroyo and lake margins, ditches, washes, and rivers from 240 to 2,600 feet (75 to 800 meters) amsl throughout California.

Tamarisk Thickets produce an open to continuous canopy as a long-lived shrub or small tree with associated wash trees and shrubs. Saltcedar was observed within the GKR alignment; this shrub consumes large quantities of water and is highly tolerant of alkaline and saline habitats. Saltcedar lacks a wetland indicator status (Lichvar et al. 2016).

Within the GKR alignment Tamarisk Thickets are represented by the *Tamarix* spp. Association and occur in two locations: in a windrow along Caliente Creek and on the west side of Castac Lake.

Tamarisk Thickets are characterized as Tamarisk Scrub in the CNDDDB community classification system (Holland 1986), and as the *Tamarix* spp. Semi-Natural Stands in the CNPS Manual of California Vegetation (Sawyer et al. 2009). Saltcedar is a highly invasive non-native species; *Tamarix* spp. Semi-Natural Stands have no global or state rarity ranking according to Sawyer et al. (2009).

Tamarisk Thickets occupy approximately 3.5 acres (1.4 hectares) of the mapped area. The stands occur within the GKR alignment in a windrow along Caliente Creek and on the west side of Castac Lake, of which 1.3 acres (0.5 hectares) occurs within anticipated work areas.

### **4.3 Herbaceous Vegetation**

Vegetation dominated by herbaceous plants is most common within the GKR alignment on rock outcrops and slopes, on foothill slopes and valleys, in seasonal or permanent wetlands, and in areas disturbed by livestock or other human-related activities. Low cover by shrubs and proportionally higher cover by herbaceous species is typical.

Eleven herbaceous alliances occur within the GKR alignment: Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows, Salt Grass Flats, Baltic and Mexican Rush Marshes, Ashy Ryegrass - Creeping Rye Grass Turfs, Common Monkey Flower Seeps, Needle Grass – Melic Grass Grasslands, American Bulrush Marsh, Wild Oats and Annual Brome Grasslands, Red Brome or Mediterranean Grass Grassland, Cheatgrass – Medusahead Grassland, and Perennial Pepper Weed Patches.

Nine alliances occur within marshes, seeps, or along moist margins of wetlands: American Bulrush Marsh, Ashy Ryegrass – Creeping Ryegrass Turfs, Baltic and Mexican Rush Marshes, Common Monkey Flower Seeps, Salt Grass Flats, and Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows; the non-native Perennial Pepper Weed Patches also occurs in wetland areas.

One alliance represents native grasslands, Needle Grass – Melic Grass Grassland.

An additional three alliances are dominated by annual invasive grasses and occur in disturbed locations, including rangelands: Wild Oats and Annual Brome Grasslands, Cheatgrass – Medusahead Grassland, and Red Brome or Mediterranean Grass Grassland.

Thirteen associations were mapped within these herbaceous alliances.

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

Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows are dominated by three native herbaceous perennials: yerba mansa, Nuttall's sunflower, and Nevada goldenrod, also called showy goldenrod. Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows occur in California in the southern portion of the state, extending from the Mono Lake area south to Little Lake; from the Fresno region south in the Great Central Valley; from Ventura County to San Diego County along Coastal California; and from Death Valley south into San Bernardino County (<http://vegetation.cnps.org/alliance/319>). It also can be found in other western states, north to Oregon and east to Kansas and south to New Mexico and western Texas, as well as in northwest Mexico.

Yerba mansa forms large colonies in moist, often alkaline soils along the coast of California, as well as inland, below 6,000 feet (1,830 meters) amsl. Yerba mansa often grows with saltgrass, creeping ryegrass, slender sedge, and Baltic and Mexican rush in moist soils in alkaline or saline meadows or near the margins of marshes, floodplains and streams and was observed in several moist locations along the southern Tehachapi Mountains. Nuttall's sunflower was not observed within the GKR alignment. Nevada goldenrod was not observed within the GKR alignment, but southern goldenrod (*Solidago confinis*) was observed. Yerba mansa and southern goldenrod both have a wetland indicator status of obligate (OBL), meaning that they always occur in wetlands (Lichvar et al. 2016).

Within the GKR alignment, Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows is represented by the *Anemopsis californica* Provisional Association and the *Solidago (confinis, spectabilis)* Provisional Association. These associations were observed in seeps near the Gorman Substation, where yerba mansa, southern goldenrod, slender sedge, cottonbatting plant, and alkali rye predominated.

Yerba Mansa – Nuttall’s Sunflower – Nevada Goldenrod Alkaline Wet Meadows is characterized as Freshwater Seep or Alkali Meadow in the legacy CNDDDB community classification system (Holland 1986), and as the *Anemopsis californica* – *Helianthus nuttallii* – *Solidago spectabilis* Herbaceous Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Anemopsis californica* – *Helianthus nuttallii* – *Solidago spectabilis* Herbaceous Alliance has a G3 global rarity ranking (21-100 viable occurrences worldwide, and/or more 6,400-32,000 acres [2,590-12,950 hectares]) and a S2 state rarity ranking (6-20 viable occurrences statewide and/or more than 1,280-6,400 acres [518-2,590 hectares]), according to <http://vegetation.cnps.org/alliance/319>, which provides updates to Sawyer et al. (2009).

Yerba Mansa – Nuttall’s Sunflower – Nevada Goldenrod Alkaline Wet Meadows occupies approximately 0.1 acres (0.04 hectares) of the mapped area and occurs in a seep just east of the Gorman Substation, all of which occurs within anticipated work areas.

Yerba Mansa – Nuttall’s Sunflower – Nevada Goldenrod Alkaline Wet Meadows represent a sensitive natural community and a sensitive alliance.

#### **4.3.2 Salt Grass Flats (*Distichlis spicata* Herbaceous Alliance)**

Salt Grass Flats are dominated by saltgrass, a mat-forming perennial rhizomatous grass in the Grass Family (Poaceae). Habitats dominated by Salt Grass Flats occur along the intermittently-flooded margins of streams, rivers, lakes, ponds, sloughs and adjacent meadows and upland areas that are seasonally dry between 0 and 5,000 feet (0 and 1,500 meters) amsl throughout much of California where suitable habitat and moisture is present, extending across North America and south into South America.

Saltgrass is a relatively low-growing perennial, rhizomatous grass that can form large meadows. It produces short leaves that alternate in a distinctive two-ranked pattern up the stem; salt glands extrude salt to allow the plants to maintain osmotic balance in saline conditions. Salt Grass Flats often occur at the often alkaline or saline edges of many types of wetlands, especially meadows, marshes, sloughs, and playas, where saltgrass may predominate or be an associated species of other alliances. Within the GKR alignment, foxtail barley (*Hordeum murinum* subsp. *leporinum*) and Baltic and Mexican rushes are the primary associated species. Soils are often poorly drained, often with a well-developed organic layer, and they tend to be wet in spring and progressively dry as the warm season progresses. Saltgrass has a wetland indicator status of Facultative (FAC), a facultative species that is equally likely to occur in wetlands as in non-wetlands (Lichvar et al. 2016).

Within the GKR alignment, Saltgrass Flats are represented by the *Distichlis spicata* – *Hordeum murinum* Association one general location along Grapevine Creek in the Castac Valley between Fort Tejon State Historic Park and Lebec.

Salt Grass Flats are characterized as Alkali Meadow in the legacy CNDDDB community classification system (Holland 1986), and as the *Distichlis spicata* Herbaceous Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Distichlis spicata* Herbaceous Alliance lacks a current global ranking and has a S4 state rarity ranking (greater than 100 viable occurrences statewide, and/or more than 32,000 acres [12,950 hectares]), apparently secure), according to Sawyer et al. (2009). No state sensitive associations of Salt Grass Flats were observed within the GKR alignment (CDFW 2021b).



Salt Grass Flats occupy approximately 2.4 acres (1.0 hectare) of the mapped area, of which 0.9 acres (0.4 hectares) occurs within anticipated work areas.

#### **4.3.3 Baltic and Mexican Rush Marshes (*Juncus arcticus* [var. *balticus*, *mexicanus*] Herbaceous Alliance)**

Baltic and Mexican Rush Marshes are dominated by two closely related perennial species of rush, Baltic rush and Mexican rush; these species are also called wire rush and are in the Rush Family (Juncaceae). Taxonomists differ in their treatment of this widespread group, and we follow the Jepson Manual in this report, but others consider Baltic rush and Mexican rush to be varieties of Arctic rush, as the name of this vegetation type implies (Sawyer et al. 2009, Flora of North America 2000, USDA 2019). Wetland habitats dominated by Baltic and Mexican Rush Marshes occur along streams, rivers, lakes, ponds, sloughs and adjacent meadows and upland areas that are seasonally dry between sea level and 7,200 feet (2,200 meters) amsl throughout much of California where suitable habitat and moisture is present, extending across North America and into Eurasia.

Baltic and Mexican rush are perennial, rhizomatous herbs, with narrow wiry stems that can reach up to 3 feet (1 meter) in height, although they are often shorter; stems are round in cross-section and appear to extend beyond the small clusters of tiny greenish flowers. Baltic and Mexican Rush Marshes often occur in wet and mesic meadows, marshes, wetland margins, fens, and sloughs. Within the GKR alignment, the most common associates include saltgrass and slender sedge, along with other herbaceous species. Soils are poorly drained, often with a well-developed organic layer. Baltic and Mexican rush have a wetland indicator status of FACW, meaning that they usually occur in wetlands (67-99 percent of the time), but are occasionally found in non-wetlands (Lichvar et al. 2016).

Within the GKR alignment, Baltic and Mexican Rush Marshes are represented by the *Juncus arcticus* var. *balticus* Association. The *Juncus arcticus* var. *balticus* Association was observed in moist soils on either side of Chanac Creek in the Cummings Valley just east of the Horse Thief Country Club in Stallion Springs and in seasonally inundated soils between Fort Tejon State Historic Park and Castac Lake in Castac Valley.

Baltic and Mexican Rush Marshes are characterized as Coastal and Valley Freshwater Marsh in the CNDDB community classification system (Holland 1986), and as the *Juncus arcticus* [var. *balticus*, *mexicanus*] Herbaceous Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Juncus arcticus* [var. *balticus*, *mexicanus*] Herbaceous Alliance has a global rank of G5 (demonstrably secure because of its worldwide occurrence) and a S4 state rarity ranking (greater than 100 viable occurrences statewide, and/or more than 32,000 acres [12,950 hectares]); apparently secure), according to Sawyer et al. (2009). No state sensitive associations of Baltic and Mexican Rush Marshes were observed within the GKR alignment (CDFW 2021b).

Baltic and Mexican Rush Marshes occupy approximately 15.8 acres (6.4 hectares) of the mapped area and occur within the GKR alignment in moist soils on either side of Chanac Creek in the Cummings Valley and in the Castac Valley between Fort Tejon State Historic Park and Castac Lake, of which 8.8 acres (3.6 hectares) occur within anticipated work areas.

#### **4.3.4 Ashy Ryegrass - Creeping Ryegrass Turfs (*Leymus cinereus* – *Leymus triticoides* Herbaceous Alliance)**

Ashy Ryegrass – Creeping Ryegrass Turfs is dominated by ashy ryegrass, also known as Great Basin wild rye (*Leymus cinereus*), a tufted perennial grass in the Grass Family (Poaceae) that is also known as *Elymus cinereus*; and creeping ryegrass, also called alkali-rye, a rhizomatous perennial grass in the Grass Family (Poaceae) that is also classified as *Elymus triticoides*. Only creeping ryegrass was observed in this alliance within the GKR alignment. Herbaceous vegetation dominated by ashy ryegrass and creeping ryegrass occurs in a variety of mesic and wet habitats including playas, intermittent washes, valley bottoms and on the margins of marshes, floodplains, drainages below 9,800 feet (3,000 meters) amsl throughout much of California. Creeping ryegrass also extends north to British Columbia and east to Texas in appropriate habitats.

Ashy ryegrass is a tall, clumping perennial grass and was not observed within the GKR alignment. Creeping rye grass is a grayish perennial grass that spreads by rhizomes to form large colonies, with associated species such as slender sedge, yerba mansa, deergrass (*Muhlenbergia rigens*), Baltic rush, and wild tarragon. Soils may be clayey or loamy. Ashy ryegrass and creeping ryegrass have a wetland indicator status of FAC, a facultative species that is equally likely to occur in wetlands as in non-wetlands (Lichvar et al. 2016).

One association of Ashy Ryegrass - Creeping Ryegrass Turfs occurs within the GKR alignment, the *Leymus triticoides* – *Bromus spp.* – *Avena spp.* Association. The *Leymus triticoides* – *Bromus spp.* – *Avena spp.* Association was observed in two locations, one near the Gorman Substation and the other in moist soils to the west-northwest of Castac Lake.

Ashy Ryegrass - Creeping Ryegrass Turfs are characterized as the Valley Wildrye Grassland in the CNDDB community classification system (Holland 1986), and as the *Leymus cinereus* - *Leymus triticoides* Herbaceous Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Leymus cinereus* - *Leymus triticoides* Herbaceous Alliance has a G3 global rarity ranking (21-100 viable occurrences worldwide, and/or 6,400-32,000 acres [2,590-12,950 hectares]) and a S3 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]), according to Sawyer et al. (2009).

Ashy Ryegrass - Creeping Rye Grass Turfs occupy approximately 2.6 acres (1.1 hectares) of the mapped area and occur within the GKR alignment to the west of Castac Lake and at the southern base of the Tehachapi Mountains in tributaries to Gorman Creek, of which 0.9 acres (0.4 hectares) occur within anticipated work areas.

Ashy Ryegrass - Creeping Ryegrass Turfs represent a sensitive natural community and a sensitive alliance.

#### **4.3.5 Common Monkey Flower Seeps (*Mimulus [guttatus]* Herbaceous Alliance)**

Common Monkey Flower Seeps are dominated by common monkeyflower, a rhizomatous herbaceous perennial in the Lopseed Family (Phrymaceae) that is now classified as *Erythranthe guttata*. Common monkeyflower occurs in many parts of California below 8,200 feet (2,500 meters) amsl, often at the



margins of saturated, vernal moist streams, seeps, and meadows. Outside of California, common monkeyflower occurs in all states west of the Rocky Mountains, as well as isolated locations to the east.

Common monkeyflower has distinctive ovate, opposite leaves with slightly sunken veins and scalloped toothed margins. Terminal inflorescences bear many flowers in spring and early summer, with pedicels longer than the pleated, ribbed calyx. The conspicuous bilabiate yellow corollas have a closed throat and two hairy ridges on the lower lip that often have reddish spots. Common Monkey Flower Seeps support at least 50 percent relative cover by common monkeyflower. Common Monkey Flower Seeps often occur with other wetland species along streams and in seeps; within the GKR alignment it occurred with a non-blooming grass species. Soils tend to be sandy or coarse-grained. Common monkeyflower has a wetland indicator status of OBL, meaning that it always occurs in wetlands (Lichvar et al. 2016).

Common Monkey Flower Seeps are represented by the *Mimulus guttatus* Association within the GKR alignment in two nearby locations in a tributary to Gorman Creek near the Gorman Substation.

Common Monkey Flower Seeps are characterized as Freshwater Seeps in the legacy CNDDDB community classification system (Holland 1986), and as the *Mimulus (guttatus)* Herbaceous Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Mimulus (guttatus)* Herbaceous Alliance has a global rank of G4? global rarity ranking (greater than 100 viable occurrences worldwide, and/or more than 32,000 acres [12,950 hectares]: apparently secure) and a S3? state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]), according to Sawyer et al. (2009).

Common Monkey Flower Seeps occupy approximately 0.01 acres (0.004 hectares) within the GKR alignment and occur in a tributary to Gorman Creek near the Gorman Substation, all of which occur within anticipated work areas.

Common Monkey Flower Seeps represent a sensitive natural community and a sensitive alliance.

#### **4.3.6 Needle Grass – Melic Grass Grassland (*Nassella* spp. – *Melica* spp. Herbaceous Alliance)**

Needle Grass – Melic Grass Grassland is dominated by two genera of tufted perennial native grasses, needlegrass in the genus *Nassella*, now called *Stipa*, and melic grass in the genus *Melica*. Both nodding needlegrass (*Stipa [Nassella] cernua*) and purple needlegrass (*Stipa [Nassella] pulchra*) form associations in Needle Grass – Melic Grass Grassland within the GKR alignment; no grasslands are dominated by melic grass. Native grasslands dominated by needlegrass occur in upland locations in many parts of cismontane California below 5,600 feet (1,700 meters), especially in deep soils with low woody cover; both nodding needlegrass and purple needlegrass are restricted to California and Baja California. Nodding needlegrass is a tufted perennial bunchgrass with elongate arched inflorescences up to 3 feet (0.9 meters) in length. Although individual spikelets are one-flowered, there are many spikelets per inflorescence. The spindle-shaped spikelets are topped with a twice-bent awn approximately 2.5 to 4 inches (5 to 10 centimeters) in length that is wavy at the tip. Purple needlegrass has a similar tufted habit to nodding needlegrass but produces spikelets with lemmas that are topped with a sharply twice-bent awn approximately 1.5 to 4 inches (3.8 to 10 centimeters) in length and often have a maroon-purplish cast. Roots have been documented up to six feet (1.8 meters) below the ground surface.

Needle Grass – Melic Grass Grassland occurs in fine-textured soils that are moist during winter and often very dry in summer. Needlegrass generally has 10 percent cover in these perennial grassland stands, and often much higher. Associated species within the GKR alignment include onesided bluegrass, blue dicks, California poppy, miniature lupine, Bentham's lupine, and other native forbs and grasses. Nodding needlegrass and purple needlegrass lack any wetland indicator status (Lichvar et al. 2016).

Within the GKR alignment, Needle Grass – Melic Grass Grassland is represented by the *Nassella cernua* Association. The *Nassella cernua* Association was documented surrounding the Gorman Substation.

Needle Grass – Melic Grass Grassland is characterized as Valley Needlegrass Grassland in the CNDDDB community classification system (Holland 1986), and as the *Nassella* spp. – *Melica* spp. Herbaceous Alliance, according to <http://vegetation.cnps.org/alliance/536>, which provides updates to the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Nassella* spp. – *Melica* spp. Herbaceous Alliance has a G4 global rarity ranking (greater than 100 viable occurrences worldwide, and/or more than 32,000 acres [12,950 hectares]); apparently secure) and a S3S4 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]; threatened), according to Sawyer et al. (2009). The *Nassella cernua* Association is included on the list of California Sensitive Natural Communities (CDFW 2021b).

Needle Grass – Melic Grass Grassland occupy 0.2 acres (0.1 hectares) within the GKR alignment surrounding the Gorman Substation, of which 0.1 acres (0.04 hectares) occur within anticipated work areas.

The *Nassella cernua* Association within the Needle Grass – Melic Grass Grassland Alliance represents sensitive natural communities and sensitive associations.

#### **4.3.7 American Bulrush Marsh (*Schoenoplectus americanus* Herbaceous Alliance)**

American Bulrush Marsh is dominated by American bulrush, a perennial rhizomatous herb in the Sedge Family (Cyperaceae); marsh vegetation dominated by American bulrush occurs at the edges of streams, ponds, and lakes and within sloughs, swamps, marshes (fresh and brackish), and man-made ditches below 7,200 feet (2,200 meters) amsl. American bulrush occurs in the Great Central Valley and in wetlands and marshes across California, as well as throughout much of the United States, British Columbia, Nova Scotia, south through Mexico into South America.

American bulrush can form large patches from elongate stout rhizomes under favorable conditions. The triangular stems produce clusters of flowering structures a few inches from the stem tips. Associated species within the GKR alignment include yerba mansa and non-native perennial pepperweed. Soils are mucky and poorly drained, with high accumulations of organic matter. This herbaceous species has a wetland indicator status of OBL, meaning that it always occurs in wetlands (Lichvar et al. 2016).

American Bulrush Marsh is represented by the *Schoenoplectus americanus* / *Lepidium latifolium* Association in one location within the GKR alignment adjacent to Goodding's Willow - Red Willow Riparian Woodlands to the northwest of a retention basin associated with Grapevine Creek north of Fort Tejon State Historic Park.

American Bulrush Marsh is characterized as the Cismontane Freshwater Marsh in the CNDDDB community classification system (Holland 1986), and as the *Schoenoplectus americanus* Herbaceous Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Schoenoplectus americanus* Herbaceous Alliance has a G5 global rarity ranking (demonstrably secure because of its worldwide occurrence) and a S3.2 state rarity ranking (21-100 viable occurrences statewide, and/or 6,400-32,000 acres [2,590-12,950 hectares]; threatened), according to Sawyer et al. (2009).

American Bulrush Marsh occurs within the GKR alignment near Grapevine Creek north of Fort Tejon State Historic Park. American Bulrush Marsh occupies approximately 0.6 acres (0.2 hectares) of the mapped area, none of which occurs within anticipated work areas.

American Bulrush Marsh represents a sensitive natural community and a sensitive alliance.

#### **4.3.8 Wild Oats and Annual Brome Grasslands (*Avena* spp. – *Bromus* spp. Semi-Natural Herbaceous Alliance)**

Wild Oats and Annual Brome Grasslands are dominated by annual species of oats in the Grass Family (Poaceae). Wild Oats and Annual Brome Grasslands occur in full sun below 7,200 feet (2,200 meters) amsl and accounts for the largest acreage of grassland vegetation in cismontane California; it occurs in a variety of topographic conditions in foothills, rangelands, disturbed areas and opening in woodlands and savannas, generally where native vegetation has been previously removed and replaced with non-native grasses.

Wild Oats and Annual Brome Grasslands are most often found in open, disturbed areas within the GKR alignment. In some relatively flat or low-lying areas, slender wild oats may be the only species present or may be found with low cover of other species, especially non-natives such as ripgut brome (*Bromus diandrus*), summer mustard (*Hirschfeldia incana*), and prickly lettuce (*Lactuca serriola*). Ripgut brome commonly occurs with foxtail barley (*Hordeum murinum*) in low-lying areas and is found on a variety of slope aspects with filaree (*Erodium*), other non-native grasses, and native forbs such as California poppy, fiddleneck, lupine, owl's clover, and many others in a range of soil types, including clayey, sandy, or rocky substrates. Soft chess (*Bromus hordeaceus*) is more abundant in woodland vegetation along the alignment. Slender wild oats and annual bromes have no wetland indicator status (Lichvar et al. 2016).

Within the GKR alignment, Wild Oats and Annual Brome Grasslands include the *Bromus diandrus* – Mixed herbs Semi-Natural Association, which was observed in many locations within the GKR alignment, especially in rangelands and on open, disturbed, south-facing slopes and valleys; and the *Bromus hordeaceus* – *Amsinckia menziesii* – *Hordeum murinum* Semi-Natural Association, which was found in upland areas near Grapevine Creek in the Castac Valley between Fort Tejon State Historic Park and Lebec and in Crane Canyon on the north-facing slopes of the southern Tehachapi Mountains.

Wild Oats and Annual Brome Grasslands are characterized as Non-native Grassland in the CNDDDB community classification system (Holland 1986), and as the *Avena* spp. – *Bromus* spp. Semi-Natural Herbaceous Alliance according to <http://vegetation.cnps.org/alliance/535>, which provides updates to the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Avena* spp. – *Bromus* spp. Semi-Natural Herbaceous Alliance has no global or state rarity ranking, according to CDFW (2019d). However, wild oats and ripgut brome have California Invasive Plant Council invasiveness rankings of Moderate (Cal-IPC 2019).

Wild Oats and Annual Brome Grasslands comprise the largest vegetation type within the GKR alignment; they occur in the valleys and foothills of the Sierra Nevada and Tehachapi Mountains, occupying 248.5 acres (100.6 hectares) within the GKR alignment, of which 135.6 acres (54.9 hectares) occur within anticipated work areas.

#### **4.3.9 Red Brome or Mediterranean Grass Grasslands (*Bromus rubens* – *Schismus* [*arabicus*, *barbatus*] Semi-Natural Herbaceous Alliance)**

Red Brome or Mediterranean Grass Grasslands are dominated by red brome and Mediterranean grass in the Grass Family (Poaceae); grasslands dominated by red brome and Mediterranean grass are widespread below 7,000 feet (2,100 meters) amsl in arid areas of California, with distribution extending east to Texas and south into Mexico. Both red brome and Mediterranean grass are annuals that often exhibit high cover in open, disturbed areas, along with a range of other native and non-native herbaceous species. They can quickly outcompete native annuals and short-lived perennials throughout their range.

Both red brome and the two species of Mediterranean grass are tufted, cool-season, annual grasses from Eurasia that becomes highly flammable when dry. Red brome was observed within the GKR alignment with ripgut brome, slender wild oats, and cheat grass (*Bromus tectorum*), along with native forbs such as California poppy, lupines, fiddleneck, and others. Red brome and Mediterranean grass have no wetland indicator status (Lichvar et. al 2016).

Within the GKR alignment Red Brome or Mediterranean Grass Grasslands are represented by the *Bromus rubens* – Mixed herbs Semi-Natural Association. The *Bromus rubens* – Mixed herbs Semi-Natural Association was documented at the base of the Tehachapi Mountains southeast of Arvin and around Comanche Point; and in the San Joaquin Valley surrounding Grapevine and southeast of Wheeler Ridge.

Red Brome or Mediterranean Grass Grasslands are characterized as the Non-native Grassland in the CNDDDB community classification system (Holland 1986), and as the *Bromus rubens* - *Schismus* (*arabicus*, *barbatus*) Herbaceous Semi-Natural Alliance according to <http://vegetation.cnps.org/alliance/332>, which provides updates to the CNPS Manual of California Vegetation (Sawyer et al. 2009). Red Brome or Mediterranean Grass Grasslands have no global or state rarity ranking according to Sawyer et al. (2009) and the online update at <http://vegetation.cnps.org/alliance/332>. However, red brome has a California Invasive Plant Council invasiveness ranking of High (Cal-IPC 2019).

Red Brome or Mediterranean Grass Grasslands occur in disturbed mostly lowland areas at the base of the Tehachapi Mountains southeast of Arvin and around Comanche Point and in the San Joaquin Valley surrounding Grapevine and southeast of Wheeler Ridge.

Red Brome or Mediterranean Grass Grasslands occupy approximately 66 acres (26.7 hectares) of the mapped area, of which 31.1 acres (12.6 hectares) occur within anticipated work areas.

#### **4.3.10 Cheatgrass – Medusahead Grassland (*Bromus tectorum* – *Taeniatherum caput-medusae* Semi-Natural Herbaceous Alliance)**

Cheatgrass - Medusahead Grassland in the Proposed Project area is dominated by cheatgrass, an annual grass in the Grass Family (Poaceae). Grassland vegetation dominated by cheatgrass occurs throughout the Intermountain West, including northeastern California, portions of the Owens Valley, and desert areas, mostly below 7,200 feet (2,200 meters) amsl. No medusahead grass was observed within the GKR alignment.

Cheatgrass is an annual grass that often exhibits high cover in open, disturbed areas, along with a range of other native and non-native herbaceous species. It can quickly outcompete native annuals and short-lived perennials and has been associated with an increase in fire frequency in arid areas (Knapp 1996). Cheatgrass has no wetland indicator status (Lichvar et al. 2016).

Within the GKR alignment, Cheatgrass - Medusahead Grassland is represented by *Bromus tectorum* – *Bromus diandrus* Semi-Natural Association. Cheatgrass was observed with ripgut brome in several locations, including west of Castac Lake, and at the southern base of the Tehachapi Mountains near the Gorman Substation.

Cheatgrass - Medusahead Grassland is characterized as the Non-native Grassland or Great Basin Grassland in the legacy CNDDDB community classification system (Holland 1986), and as the *Bromus tectorum* - *Taeniatherum caput-medusae* Herbaceous Semi-Natural Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Bromus tectorum* - *Taeniatherum caput-medusae* Herbaceous Semi-Natural Alliance lacks global and state rarity rankings, according to Sawyer et al. (2009). However, cheatgrass has a California Invasive Plant Council invasiveness ranking of High (Cal-IPC 2019).

Cheatgrass - Medusahead Grassland occupies approximately 2.8 acres (1.1 hectares) within the GKR alignment west of Castac Lake and near the Gorman Substation, of which 1.9 acres (0.8 hectares) of this alliance occur within anticipated work areas.

#### **4.3.11 Perennial Pepper Weed - Prickly Lettuce Patches (*Lepidium latifolium* – [*Lactuca serriola*] Herbaceous Semi-Natural Alliance)**

Perennial Pepperweed Patches are dominated by perennial pepperweed, a highly invasive herbaceous perennial in the Mustard Family (Brassicaceae). Herbaceous vegetation dominated by perennial pepper weed occur primarily in riparian corridors and marshes that are seasonally flooded occurring below 6,250 feet (1,900 meters) amsl throughout California, with the exception of most of the Mojave and Sonoran deserts.

Perennial pepperweed is an invasive, rhizomatous, perennial forb that produces relatively large leaves and abundant white flowers in spring that set copious seed. Perennial pepperweed occurs in large spreading patches in moist soils with few woody species in the shrub or tree layer, such as willow; it is often found in seasonally flooded marshes. Where found, it often also occurs as an associated species in other wetland vegetation types. Soils are poorly drained with high organic matter; this species has a wetland indicator status of FACW (Lichvar et al. 2016).

Within the GKR alignment, Perennial Pepperweed Patches are represented by the *Lepidium latifolium* Semi-Natural Association and was observed in Grapevine Canyon in several places and west of Castac Lake.

Perennial Pepperweed Patches are characterized as the Coastal and Valley Freshwater Marsh in the CNDDDB community classification system (Holland 1986), and as the *Lepidium latifolium* Herbaceous Semi-Natural Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). The *Lepidium latifolium* Herbaceous Semi-Natural Alliance lacks global and state rarity rankings, according to Sawyer, Keeler-Wolf, and Evens (2009). Perennial pepperweed has a California Invasive Plant Council invasiveness ranking of High (Cal-IPC 2019).

Perennial Pepperweed Patches occupy approximately 8.6 acres (3.5 hectares) within the GKR alignment in Grapevine Canyon and west of Castac Lake, of which 5.5 acres (2.2 hectares) occur within anticipated work areas.

## 4.4 Disturbed and Developed Habitat

Disturbed and Developed areas are generally not vegetated due to human alterations, such as construction and development. These areas are identified and mapped for informational purposes.

### 4.4.1 Active Agriculture

Active agriculture includes areas with irrigated cropland, non-irrigated cropland, pastures, fallow lands, ranch and farm facilities, and windrows. Crops observed within the GKR alignment include grapes, almonds, alfalfa (*Medicago sativa*), and various other fruit, nut, vegetable, and graminoid species that likely serve as livestock feed. Active agriculture is not assigned a vegetation type within the CNDDDB community classification system (Holland 1986) or the CNPS Manual of California Vegetation (Sawyer et al. 2009).

Active agriculture areas occupy the largest area within the GKR alignment, approximately 407.2 acres (164.8 hectares).

### 4.4.2 Ornamental/Landscaped

Ornamental/Landscaped include areas landscaped with non-native ornamental trees and shrubs, especially non-native tree species planted in residential settings or in windrows or plants that have escaped and have become naturalized. Ornamental/Landscaped areas are dominated by non-native invasive species and are not assigned a vegetation type within the CNDDDB community classification system (Holland 1986) or the CNPS Manual of California Vegetation (Sawyer et al. 2009).

Ornamental/Landscaped areas occupy approximately 1.5 acres (0.6 hectares) of the mapped area within the GKR alignment.

### 4.4.3 Open Water

Open water includes areas containing bodies of water lacking vegetation. Areas encountered within the survey include lakes, rivers, detention basins, and reservoirs.

Open water areas occupy approximately 7.7 acres (3.1 hectares) of the mapped area within the GKR alignment.

#### **4.4.4 Developed**

Developed areas include roads, buildings, other infrastructure and development, and surrounding bare areas.

Developed areas occupy approximately 181.1 acres (73.3 hectares) of the mapped area within the GKR alignment.

#### **4.4.5 Disturbed Habitat**

Disturbed habitat is generally bare ground after disturbance until either natural succession or additional disturbance occurs. Habitat succession is a slow process of reestablishing original plant communities, but the initial stages of succession leave disturbed habitats open to invasion by non-native grass and forb species, often called ruderal vegetation.

Ruderal species in the Project area include weedy non-native forbs and grasses, such as knotweed (*Polygonum aviculare*) and others.

Disturbed habitat areas occupy approximately 36.7 acres (14.9 hectares) of the mapped area within the GKR alignment.



## 5 SENSITIVE BIOLOGICAL RESOURCES PRESENT OR POTENTIALLY PRESENT IN THE PROJECT AREA

The sections below describe the habitat and species-specific findings of the 2017 – 2019 biological surveys.

### 5.1 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 Natural Communities List (CDFW 2021a) and California Sensitive Natural Communities List (CDFW 2021b). 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 2021a). 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.

Of the 33 alliances and 44 associations observed within the GKR alignment, the following are designated as sensitive natural communities and are shown in Table 1 and Figure 4.

#### **Sensitive Woodland and Forest Alliances and Associations (7 sensitive alliances, 12 sensitive associations)**

##### Riparian woodland and forest alliances

California Sycamore – Coast Live Oak Riparian Woodlands (*Platanus racemosa* – *Quercus agrifolia* Woodland Alliance)

Fremont Cottonwood Forest and Woodland (*Populus fremontii* Forest Alliance)

Valley Oak Riparian Forest and Woodland (*Quercus lobata* Forest and Woodland Alliance)

Goodding’s Willow - Red Willow Riparian Woodlands (*Salix gooddingii* – *Salix laevigata* Woodland Alliance)

Shining Willow Groves (*Salix lucida* Woodland Alliance)

##### Upland woodland and forest alliances

Blue Oak Woodland (*Quercus douglasii* Woodland Alliance) – alliance not sensitive, one sensitive association observed: *Quercus douglasii* - *Quercus lobata* Association

California Buckeye Groves (*Aesculus californica* Woodland Alliance)

Valley Oak Woodland (*Quercus lobata* Woodland Alliance)

### **Sensitive Shrubland Alliances and Associations (2 sensitive alliances, 6 sensitive associations)**

#### Riparian shrubland and wash alliances

Arroyo Willow Thickets (*Salix lasiolepis* Shrubland Alliance) – alliance not sensitive, two sensitive associations observed: *Salix lasiolepis* Association and *Salix lasiolepis* – *Salix lucida* Association

Scalebroom Scrub (*Lepidospartum squamatum* Shrubland Alliance)

#### Upland alliances in rocky or well-drained substrates

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

California Joint-fir - Longleaf Joint-fir Scrub (*Ephedra californica* - *Ephedra trifurca* Shrubland Alliance) – alliance not sensitive, one sensitive association observed: *Ephedra californica* / annual – perennial herb Association

Narrowleaf Goldenbush – Bladderpod Scrub (*Ericameria linearifolia* – *Cleome isomeris* Shrubland Alliance) – alliance not sensitive, one sensitive association observed: *Cleome isomeris* Association

### **Sensitive Herbaceous Alliances and Associations**

#### Marshes, moist wetland margins, and seeps alliances

American Bulrush Marsh (*Schoenoplectus americanus* Herbaceous Alliance)

Ashy Ryegrass - Creeping Ryegrass Turfs (*Leymus cinereus* – *Leymus triticoides* Herbaceous Alliance)

Common Monkey Flower Seeps (*Mimulus [guttatus]* Herbaceous Alliance)

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

#### Native grasslands

Needle Grass – Melic Grass Grassland (*Nassella* spp. – *Melica* spp. Herbaceous Alliance)

## **5.2 Sensitive Plants Observed within the GKR Alignment**

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

- Federally-listed species (i.e., plants listed as threatened or endangered under the Federal Endangered Species Act [FESA])
- Species that are candidates for possible future listing as threatened or endangered under FESA

- State-listed species (i.e., plants listed as threatened or endangered under CESA)
- Plants identified under the CRPR as 1B or 2B Plants that meet the definition of rare or endangered under the California Environmental Quality Act (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)
- Species designated as Sensitive by the United States Forest Service (USFS S); the GKR alignment is located on portions of both the Los Padres National Forest (in the San Emigdio Mountains) and the Sequoia National Forest (in the southern Sierra Nevada).

The desktop review identified 32 special-status plant species that have the potential to occur within 10 miles (16 kilometers) of the GKR alignment (Table 2, Appendix A).

Two plant species were observed within the GKR alignment during the 2017 – 2019 surveys that are Federally Endangered: the Bakersfield cactus and Kern mallow (*Eremalche parryi* subsp. *kernensis*). The Bakersfield cactus is also California Endangered, whereas the Kern mallow is not listed by CDFW but has a CRPR of 1B.2.

No other Federally-listed or California-listed plant species were observed within the GKR alignment during the 2017 - 2019 surveys. Four non-listed sensitive plant species were observed along the alignment, including one herbaceous perennial and three annuals (Table 2, Figure 4). The discussion below addresses the sensitive plant species observed within the GKR alignment during the 2017 - 2019 surveys.

Sensitive plant species that were not observed on this alignment but have CNDDDB records within the GKR alignment, or were found on other alignments or at reference sites, are discussed in Appendix E. All sensitive plant species observed or that have been reported in the area using the CNDDDB and CNPS Electronic Inventory search are included in Table 2.

The GKR alignment intersects 11 U.S. Geological Survey 7.5-minute quadrangles, which were queried for sensitive resource data in CNDDDB: Arvin, Bear Mountain, Cummings Mountain, Edison, Frazier Mountain, Grapevine, Lebec, Pastoria Creek, Rio Bravo Ranch, Tejon Hills, and Tejon Ranch.

Sensitive plant species are presented below in order of listing status, beginning with Federally-listed species, followed by those with only CRPR status. Species within the same category and/or CRPR are listed in alphabetical order by scientific name.

Habitat quality is assessed for observed listed plant species and those with a CRPR of 1 or 2. Suitable habitat is defined as an area or areas that support known individuals of a given species (based on survey observations, CNDDDB records, and CCH records), suitable environmental conditions, and presence of the natural community or communities in which it normally occurs. A sensitive species is likely to occur in suitable habitat.

Potentially suitable habitat is defined as an area or areas that support similar natural communities, substrates, and elevations, and is within the known range of an observed plant species, but where no individuals were observed in surveys or reported by others. A sensitive species is unlikely to occur in potentially suitable habitat, depending on environmental variables and known species range.

Unsuitable habitat is defined as an area or areas where the species is absent and is unlikely to occur due to lack of suitable environmental conditions and because the area is outside the known range of the species. A sensitive species does not occur in unsuitable habitat.

## 5.2.1 Observed Federally-listed Species

Two observed plant species within the GKR alignment are Federally Endangered: Bakersfield cactus and Kern mallow. The Bakersfield cactus is also California Endangered, whereas the Kern mallow has a CRPR of 1B.2.

### 5.2.1.1 Bakersfield Cactus (*Opuntia basilaris* var. *treleasei*) – FE, CE, CRPR 1B.1

Bakersfield cactus is a spring-blooming perennial cactus in the Cactus Family (Cactaceae) that is Federally Endangered and California Endangered and has a CRPR of 1B.1; it is threatened by urbanization, agriculture, grazing, roads and vehicle use, energy development, and mining (CDFW 2021a). Bakersfield cactus produces jointed, flattened stems bearing clusters of small, barbed spines called glochids, along with longer straight yellowish spines; the stem joints are covered with a bluish wax and bear bright pink flowers at the tips from March to May.

Bakersfield cactus occurs in sandy to gravelly soils in arid shrublands, woodlands, and grasslands at elevations ranging from 400 to 4,750 feet (120 to 1,450 meters) amsl. It is endemic to California and to central Kern County near Bakersfield and south to Comanche Point and the Tehachapi Mountains near Oak Creek Pass (Moe 2016); it is also reported in the Tehachapi mountains near Gorman (CCH 2019).

**Presence in the Project Area:** Surveys for special-status plant species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. Bakersfield cactus was observed in two nearby locations that encompassed over 300 individuals within the GKR alignment. These observations were concentrated on the alignment along Caliente Creek Wash just east-northeast of Mountain View Road near its intersection with Towerline Road, northeast of the town of Lamont in California Joint-fir - Longleaf Joint-fir Scrub and Scalebroom Scrub.

CNDDDB Occurrence #3 extends from the observed Bakersfield cactus stand northeast of Mountain View Road to the northeast up Caliente Creek Wash, crossing Highway 58 to its northern extent near Bena Road; Occurrence #3 was initially mapped in 1986, with subsequent documentation in years up to 2011. A portion of Occurrence #3 outside of the GKR alignment occurs within the Sand Ridge Preserve, currently under the management of the Center for Natural Lands Management (CNLM 2019). Additional colonies of Bakersfield cactus occur to the immediate east of the Bena Road area along the slopes bordering Caliente Creek and Walker Basin Creek; these constitute Occurrence #25, which was initially mapped in 1989, with subsequent observations in various years up to 2015. A 2011 record (Occurrence #38) occurs on south-facing slopes on the west side of the Kern River approximately 0.1 mile (0.2 kilometers) west of the GKR alignment, which is located on the east side of the Kern River. A 2010 record (Occurrence #32) occurs 0.2 mile (0.3 kilometers) west of the GKR alignment along Cottonwood Creek just north of Breckenridge Road. There are numerous CNDDDB observations in the Comanche Point area as well, including a 1989 record (Occurrence #21) within 0.2 mile (0.3 kilometer) of the GKR alignment and a 2017 record (Occurrence #63) of numerous patches of Bakersfield cactus within 0.2 mile (0.3 kilometer) of the GKR alignment (CNDDDB 2019).

Suitable habitat for the Bakersfield cactus occurs in only one location within the GKR alignment, along Caliente Creek Wash just east-northeast of Mountain View Road near its intersection with Towerline Road, northeast of the town of Lamont. Bakersfield cactus does not occur elsewhere within the GKR alignment, because this species is a large, spreading, conspicuous cactus that can readily be observed and identified at any time of the year during botanical surveys.

#### 5.2.1.2 Kern Mallow (*Eremalche parryi* subsp. *kernensis*) – FE, CRPR 1B.2

Kern mallow is a spring-blooming herbaceous annual in the Mallow Family (Malvaceae) that is Federally Endangered and has a CRPR of 1B.2; it is threatened by oil development, road use and maintenance, agriculture, and grazing (CDFW 2021a).

There are two subspecies of *Eremalche parryi*, the more widespread and non-sensitive Parry's mallow (*Eremalche parryi* subsp. *parryi*) and the narrow endemic and Federally Endangered Kern mallow (*Eremalche parryi* subsp. *kernensis*). Both subspecies produce erect stems that bear alternate lobed leaves and petals at least 0.4 inches (10 millimeters) long. Parry's mallow occurs from Alameda and nearby counties south to Santa Barbara and Ventura Counties. It has larger flowers than the Kern mallow, with purplish petals and consistently bisexual flowers bearing fertile stamens and pistil. The Kern mallow often has smaller white to lavender petals and some flowers without stamens (Moe 2016).

Kern mallow occurs in dry, sandy to clay soils in pinyon juniper woodlands, foothill and valley grasslands, and at the edges of chenopod scrublands at elevations ranging from 330 to 3,300 feet (100 to 1,000 meters) amsl. It is endemic to western Kern County and nearby San Luis Obispo County, mostly west of Buttonwillow and along the McKittrick summit; populations occur in western Kern County, eastern San Luis Obispo County and northern Santa Barbara County (CDFW 2021a).

**Presence in the Project Area:** Surveys for special-status plant species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. Kern mallow was observed in two different locations during the sensitive plant surveys.

Location 1 – Approximately 150 individuals of Kern mallow occurred within the GKR alignment in 2018 along the only access road to a tower west of Mount Adelaide on the east side of the Kern River drainage in Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub; 13 individuals were observed in the same location in 2017.

Specimens of several 2018 individuals were sent to David Magney, CNPS Rare Plant Botanist, who identified them as Kern mallow and not Parry's mallow.

Location 2 – One individual was mapped as Kern mallow in 2017 at the base of the Tejon Hills northeast of Comanche Point and southeast of Arvin in Annual Brome Grassland. There are no specimens or photographs of this individual, so the subspecies remains unverified, although there are nearby confirmed observations of Kern mallow. SCE assumes presence of Kern mallow at this location; however, surveys conducted pre-construction and/or during construction may allow additional verification of presence of Kern mallow or Parry's mallow within the GKR alignment.

A 1988 CNDDDB record (Occurrence #148) is generally mapped on the slopes near the west side of the Kern River drainage approximately 3.6 miles (5.8 kilometers) west of the GKR alignment. A 2012 CNDDDB

record (Occurrence #115) occurs 0.5 mile (0.8 kilometer) east of the GKR alignment in the Tejon Hills; 160 plants were observed at the base of a slope in the Comanche Point area after the 2011 Comanche fire. A 2017 observation (Occurrence #188) occurs further east of Occurrence #115, less than 1.0 mile (1.6 kilometers) east of the GKR alignment. A 2012 observation (Occurrence #112) occurs within 0.25 mile (0.4 kilometer) of the GKR alignment to the south of the previous two CNDDDB records, near the tip of Comanche Point.

Suitable habitat for Kern mallow occurs within the GKR alignment in two locations, one on the eastern side of the Kern River drainage along an access road to a tower and the other near Comanche Point. Kern mallow is unlikely to occur within the GKR alignment in grasslands and arid shrublands on the southeastern slopes of the Kern River drainage northeast of Edison and in undeveloped (including agricultural lands) locations near Comanche Point and does not occur in other locations within the GKR alignment.

## **5.2.2 Observed Species with California Rare Plant Ranking**

### **5.2.2.1 Piute Mountains Navarretia (*Navarretia setiloba*) – CRPR 1B.1, USFS S**

Piute Mountains navarretia is a diminutive spring to early-summer blooming annual in the Phlox Family (Polemoniaceae) that has a CRPR of 1B.1 and is a USFS Sensitive species; it is threatened by urbanization, roads, and vehicle use (CDFW 2021a). Piute Mountains navarretia is a small upright glandular annual with distinctively lobed leaves bearing sharp prickles and heads of tubular blue flowers with white throats and blue, purple, or light pink lobes and surrounded by prickly bracts; flowers appear from April to July.

Piute Mountains navarretia occurs in depressions in gravelly loam to clay soils in valley and foothill grasslands, oak and foothill woodlands, and pinyon juniper woodlands at elevations ranging from 1,640 to 6,900 feet (500 to 2,100 meters) amsl. It is endemic to the general Project region from the southern Sierra Nevada (especially the Greenhorn Range), to Kern County in the Tehachapi and San Emigdio Mountains, with some observations reported from Los Angeles County near Forest Park (CCH 2019).

**Presence in the Project Area:** Surveys for special-status plant species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. Piute Mountains navarretia was observed in seven locations that included 313 individuals within the GKR alignment during the sensitive plant surveys. These observations were concentrated in three areas along the alignment. One area was located in the foothills of the Sierra Nevada south of Kern River Canyon in Cheesebush – Sweetbush Scrub vegetation. The second area was located in the Tehachapi Mountains west of Bear Valley Springs and east of Comanche Point in Blue Oak Woodland and Annual Brome Grasslands. The third area was located west of Interstate 5 in the San Emigdio Mountains northwest of Lebec in Annual Brome Grasslands.

A 2009 observation (Occurrence #16) overlaps the GKR alignment in Fort Tejon State Historic Park, where it was generally mapped; this location is approximately 0.5 mile (0.8 kilometer) south of one of the survey observations in the San Emigdio Mountains. A 2013 observation (Occurrence #19) occurred on the west side of Comanche Point within 0.2 miles (0.3 kilometers) of the GKR alignment. A 2011 observation (Occurrence #60) spanned both sides of General Beale Road 2.4 miles (3.9 kilometers) east



of the GKR alignment in the Tehachapi foothills. An extirpated 1937 CNDDDB observation (Occurrence #6) was reported 3 miles (4.8 kilometers) west of the GKR alignment.

Suitable habitat for the Piute Mountains navarretia occurs open grassy areas within the GKR alignment in mountain foothills. It is expected in three locations including the Sierra Nevada foothills, margins of the Tehachapi Mountains (e.g., west of Bear Valley Springs and east of Comanche Point), and the San Emigdio Mountains at Grapevine Pass. In addition, Piute Mountains navarretia has a potential to occur near Comanche Point and Digier Road and Fort Tejon State Historic Park in clay or gravelly loam substrates; it would be likely to occur at these additional locations even though no observations were made during surveys. It is unlikely to occur elsewhere within the GKR alignment, and does not occur in sandy substrates or washes, rocky substrates, agricultural areas, ruderal areas, inundated substrates, or developed areas.

#### 5.2.2.2 Calico Monkeyflower (*Mimulus [Diplacus] pictus*) – CRPR 1B.2

Calico monkeyflower is a small spring-blooming herbaceous annual in the Lopseed Family (Phrymaceae) that has a CRPR of 1B.2; it is threatened by habitat loss from non-native species and animal grazing (CDFW 2021a). Calico monkeyflower produces square hairy stems bearing opposite leaves that are widest in the middle and narrow at the tip. The five-petaled flowers appear from March to May, with distinctive patterns of maroon markings on white to creamy petal lobes radiating from the maroon throat.

Calico monkeyflower occurs in open areas in granitic soils at elevations ranging from 440 to 4,100 feet (135 to 1,250 meters) amsl, often with blue oak and oak gooseberry nearby. It is endemic to Kern and Tulare counties in the foothills of the Tehachapi Mountains and Sierra Nevada (CCH 2019).

**Presence in the Project Area:** Surveys for special-status plant species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. Calico monkeyflower was observed in seven locations that encompassed 15 individuals within a 4-mile (6.4-kilometer) stretch of the GKR alignment during the sensitive plant surveys. These observations were concentrated along the alignment in the Tehachapi Mountains northwest of Stallion Springs in Blue Oak Woodland.

A 1930 CNDDDB record (Occurrence #31) was reported 3.3 miles (5.3 kilometers) from the northern end of the GKR alignment. A 1978 CNDDDB record (Occurrence #37) was reported from the Tejon Hills approximately 0.6 mile (1.0 kilometer) southwest of the GKR alignment along “Powerline Access Road” 1 mile (1.6 kilometer) “off Comanche Point Road;” one location for observed calico monkeyflower during the sensitive plant surveys occurred within 1 mile (1.6 kilometers) of this location. A 2013 record (Occurrence #48) was observed 1.2 miles (2 kilometers) east of the GKR alignment near Grapevine in an area underlain by the Tecuya granitic conglomerate formation (California Geological Survey 2014).

Suitable habitat for the calico monkeyflower includes granitic soils between 440 and 4,100 feet (135 and 1,250 meters) amsl; it was observed within the GKR alignment along a four-mile (6.4-kilometers) portion of the GKR alignment northwest of Stallion Springs in Blue Oak Woodland. Calico monkeyflower is expected anywhere within the Tehachapi Mountains where granitic soils and Blue Oak Woodlands occur together, which includes locations observed during surveys and also additional locations where it is likely to occur but was not observed. Calico monkeyflower is not expected (i.e., unlikely) to occur within the GKR alignment on the lower slopes of Grapevine Mountain, based on a single CNDDDB record; granitic soils in this area are limited to a few locations, including where the 2013 CNDDDB record was reported.



Calico monkeyflower could also occur in the Sierra Nevada foothills between Highway 58 and the northern terminus of the alignment at the Kern River 1 Hydroelectric Substation; granitic soils in this area occur in the Sierra Nevada between the Kern River 1 Hydroelectric Substation and where the Kern River canyon narrows (California Geological Survey 2011), a distance of approximately 1.5 miles (2.4 kilometers). Calico monkeyflower does not occur in grasslands dominated by dense stands of non-native species of *Bromus*, nor does it occur on agricultural lands or in wetlands or riparian areas.

### 5.2.3 Observed Species with California Rare Plant Rankings (CRPR 4)

Plants with a rank of CRPR 4 are considered as needing avoidance or mitigation under CEQA if, and only if, the population represents a unique local resource. These are included for informational purposes because they were observed, but habitat quality was not assessed. We observed the following CRPR 4 species:

- San Joaquin Bluecurls (*Trichostema ovatum*) – CRPR 4.2
- Adobe Yampah (*Perideridia pringlei*) – CRPR 4.3

San Joaquin bluecurls is a summer to fall-blooming annual in the Mint Family (Lamiaceae) that produces soft, densely hairy stems and ovate leaves with a strong odor and bilateral purple to blue flowers that curve upwards and bear 4 long arched stamens when plants bloom from July to October. San Joaquin bluecurls occurs in valley and foothill grasslands and in Chenopod scrub at elevations below 1,000 feet (300 meters) amsl, primarily in the San Joaquin Valley in Kern County, with limited observations in interior Santa Barbara, Ventura, Kings, Tulare, and Fresno counties (CCH 2019). Over 7,500 individuals were observed in 17 locations during the sensitive plant surveys, with 10 individuals near the Kern River drainage in the foothills of the Piute Mountains and over 7,000 individuals near Comanche Point in Annual Brome Grassland and Cheesebush – Sweetbush Scrub vegetation. It does not represent a locally unique resource in the Project area because the observations and habitat documented were within the expected range and location.

Adobe yampah, a spring-blooming perennial herb in the Carrot Family (Apiaceae), produces an upright stem with tuberous, clustered roots, from which arise basal leaves with divided into a few narrow leaflets. Clusters of white flowers occur from April to June. Adobe yampah occurs mostly in clay soils or serpentinite substrate and grows on grassy slopes in pinyon juniper woodlands, coastal scrub, cismontane woodlands, and chaparral at elevations ranging from 1,000 to 5,900 feet (300 to 1,800 meters) amsl in Kern, Los Angeles, and Ventura counties in the Tehachapi Mountains and northern Los Padres Mountains, and along the coast into Monterey County (CCH 2019). Fifty individuals of adobe yampah were observed in three locations in Blue Oak Woodland in the Tehachapi Mountains during the surveys. It does not represent a locally unique resource in the Project area because the observations and habitat documented were within the expected range and location.

Sensitive plant species that were *not observed* within the GKR alignment are discussed in Appendix E.

## 5.3 Sensitive Wildlife Species Observed

For the purposes of this Habitat Assessment, special-status wildlife species are defined as:

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

- CDFW Fully Protected species
- Species designated as a California Species of Special Concern (CSC) by the CDFW
- Species designated as Sensitive by the United States Forest Service (USFS S)
- Migratory birds and any of their parts, eggs, and nests, as protected by the Migratory Bird Treaty Act (MBTA)

Sixty special-status wildlife species that were observed or with the potential to occur within 10 miles (16 kilometers) of the proposed GKR alignment are included in Table 3 and shown in Appendix H. One Federally-listed species, the San Joaquin kit fox (*Vulpes macrotis mutica*), and two California-listed species, the San Joaquin kit fox and tricolored blackbird (*Agelaius tricolor*), or their sign were observed within the GKR alignment during the special-status wildlife surveys.

In total, eighteen special-status species were observed along the alignment, including one amphibian species, fifteen bird species, and two mammal species (Table 3, Figure 4). Twelve species meet the criteria above and six additional observed wildlife species are designated by the USFWS as being a Bird of Conservation Concern (BCC) and/or by CDFW as being on a Watch List (WL); the BCC and WL species that were observed are discussed in Appendix F.

Section 5.4 addresses listed species that have the potential to occur along the alignment but were not observed. Other special-status wildlife species that were not observed but that are known from the general area are discussed in Appendix F.

Sensitive wildlife species are presented by listing status, beginning with federally-listed species, followed by California-listed species, and then other designations. Species within the same category are listed in alphabetical order by scientific name. Table 3 presents sensitive species based on taxonomic groupings (invertebrates, fish, amphibians, reptiles, birds, mammals). All observed sensitive wildlife species locations are shown on Figure 4. Critical habitat for Federally-listed species is shown on Figure 5.

Habitat quality is assessed for observed federal and state-listed species, CDFW Fully Protected wildlife species, and CDFW Species of Special Concern. Suitable habitat is defined as an area or areas that support known individuals of a given species (based on survey observations, CNDDDB records, and CCH records), suitable environmental conditions, and presence of the natural community or communities in which it normally occurs. A sensitive species is likely to occur in suitable habitat.

Potentially suitable habitat is defined as an area or areas that support similar natural communities, substrates, and elevations, and is within the known range of an observed wildlife species, but where no individuals were observed in surveys or reported by others. A sensitive species unlikely to occur in potentially suitable habitat, depending on environmental variables and known species range.

Unsuitable habitat is defined as an area or areas where the species is absent and is unlikely to occur due to lack of suitable environmental conditions and because the area is outside the known range of the species. A sensitive species does not occur in unsuitable habitat.

### 5.3.1 Federally Listed Species

One Federally-listed species or their sign was observed within the GKR alignment, the San Joaquin kit fox.

#### 5.3.1.1 San Joaquin Kit Fox (*Vulpes macrotis mutica*) - FE, CT

The San Joaquin kit fox is a Federally Endangered and California Threatened (CT) species. No critical habitat rules have been published for the San Joaquin kit fox.

The San Joaquin kit fox is delicate and cat-sized, with large, conspicuous ears, longish legs, and a bushy, black-tipped tail that often extends almost horizontally behind its body. It is light-bellied but otherwise almost uniformly pale gray in winter and tan in summer (Crabtree and Thelander 1994). The San Joaquin kit fox stands 9 to 12 inches (22 to 30 centimeters) at the shoulder and averages about 20 inches (51 centimeters) in length; fully grown, the San Joaquin kit fox weighs about 5 pounds (2.3 kilograms). San Joaquin kit fox pups are born February through April, following a gestation period of 49 to 55 days (Egoscue 1962). San Joaquin kit fox typically have one litter per year of between one and four pups with litters of up to seven pups less common (McGrew 1979). Pups are weaned at about 4 to 5 months.

The San Joaquin kit fox is active year-round and occupies perennial and annual grasslands or grassy open habitats supporting scattered shrubby vegetation in the San Joaquin Valley. Historically, its range extended from eastern Contra Costa County and Stanislaus County in the north to southern Kern County, but currently occurs in the western and southern San Joaquin Valley and associated foothills. This non-migratory mammal may construct its own den in loose-textured sandy soils for burrowing or may enlarge pre-existing burrows in other substrates. They may also utilize artificial structures such as culverts and abandoned pipes. One kit fox may use several dens, especially during the summer months, and females may change natal dens more than once a month. San Joaquin kit foxes require a suitable prey base, such as black-tailed jackrabbits and desert cottontails, rodents (especially kangaroo rats and ground squirrels), insects, reptiles, and some birds and bird eggs (CDFW 2019b).

Portions of the GKR alignment occur within the breeding range of the San Joaquin kit fox.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No live San Joaquin kit foxes were observed during the special-status wildlife surveys. A potential active San Joaquin kit fox burrow was observed within the GKR alignment in Red Brome Grassland at the base of the western foothills of the Tehachapi Mountains just north of Comanche Point and south of Arvin (east of Teale Road); the burrow was several inches wide (> 4 inches in diameter), with an apron of dirt and tracks at the entrance that were consistent with those found at other kit fox dens previously observed by the same field biologists in other locations outside of the Project area.

Twenty-two CNDDDB occurrences have been reported within or near the GKR alignment in the southern San Joaquin Valley (Figure 6). Three CNDDDB occurrences recorded in the past 10 years have been reported in the western foothills of the Tehachapi Mountains to the north and south of the potential kit fox burrow location described above. A 2012 record (Occurrence #1137) was reported in open annual grassland habitat approximately 4.5 miles (7.2 kilometers) to the northwest of the potential San Joaquin kit fox burrow and north of Comanche Point, about 1.4 miles (2.2 kilometers) east of the alignment and 2.5 miles (4.0 kilometers) east of Arvin. Two records were reported in grassland south of Comanche Point, south of El Paso Creek, and east of Mettler: a 2012 record (Occurrence #1136) was located 2.5 miles (4.0 kilometers) east of the GKR alignment, and a 2010 record (Occurrence #1139) was located 3 miles (4.8 kilometers) east of the GKR alignment; the 2010 record included a note that this was the same location as a potentially active den reported in 2009 by a Tejon Ranch employee. Additional records in

this general area include a 1975 record (Occurrence #722) was reported approximately 0.8 miles (1.2 kilometers) east of the alignment in the western foothills of the Tehachapi Mountains to the south of El Paso Creek and Comanche Point. A second 1975 record (Occurrence #726) was reported 1.8 miles (2.9 kilometers) east of the alignment in agricultural land to the north of Comanche Point and about 3.5 miles (5.6 kilometers) east northeast of Arvin; three dens were observed between 1972 and 1975.

CNDDDB observations with inexact location data that broadly overlap the GKR alignment include a 1981 record (Occurrence # 219) of a kit fox den south of the California aqueduct approximately 1.6 miles (2.6 kilometers) northeast of Grapevine and a 1975 record (Occurrence #242) in the foothills of the southern Sierra Nevada near the confluence of Cottonwood Creek with the Kern River.

Towards the north end of the GKR alignment, three records (Occurrences #217, 1110, and 1111) were reported in 2010, 2006, and 2007 respectively at the Bena Landfill approximately 2.0 miles (3.2 kilometers) east of the GKR alignment northeast of Edison. South of Grapevine, a 1975 record (Occurrence #719) of a kit fox den was located 0.75 miles (1.2 kilometers) west of the GKR alignment and 0.8 mile (1.2 kilometers) south of Grapevine (CNDDDB 2019).

The GKR alignment is shown on Figure 6, which also includes locations of CNDDDB observations of the San Joaquin kit fox in the mapped area as well as the probability of San Joaquin kit fox occurrence (from databasin.org). The alignment traverses habitat described in records as supporting the San Joaquin kit fox in the southern San Joaquin Valley, including grassland, fallow agricultural land, and other open vegetation with loose-textured substrates or active burrows, especially in the foothills of the Sierra Nevada south of the Kern River and in and near the foothills of the western Tehachapi Mountains between Arvin and the grasslands south of Comanche Point to the south of El Paso Creek. The species historically occurred between the California aqueduct and Grapevine, but there are no recent observations in this area. The San Joaquin kit fox is likely to occur within the GKR alignment in suitable habitat while hunting and roaming in and near the San Joaquin Valley and associated foothills of the southern Sierra Nevada and the margins of the Tehachapi Mountains. The San Joaquin kit fox is unlikely to establish an active den within the GKR alignment in low-elevation habitat within the San Joaquin Valley and nearby foothills of the southern Sierra Nevada and Tehachapi Mountains except in the one location, where a potential active kit fox den was observed at the base of the Tehachapi Mountains near Comanche Point. The San Joaquin kit fox is unlikely to establish active dens in dense woody vegetation, rocky substrates, mountainous areas, riparian woodlands and forests, seasonally inundated soils, areas under active agricultural production, and developed areas.

### **5.3.2 California-listed Species**

In addition to the San Joaquin kit fox, one additional California-listed species was observed during the special-status wildlife surveys, the tricolored blackbird (*Agelaius tricolor*).

#### **5.3.2.1 Tricolored Blackbird (*Agelaius tricolor*) - CT, CSC**

The tricolored blackbird is a California Threatened species and CDFW Species of Special Concern. The tricolored blackbird is a medium-sized bird; its length measures from 7 to 9.5 inches (18 to 24 centimeters), with a wingspan of 14 inches (35 centimeters, Beedy et al.1999). Adult males are typically larger than females and are black with bright red and white plumage on the wing shoulder, whereas adult

females have sooty brown-black plumage with distinct grayish streaks, a whitish-gray chin and throat, and a smaller reddish shoulder-patch (Cornell 2019).

Tricolored blackbirds prefer wetlands, swamps, and cattail or tule marshes and commonly forage in fields and farms. Nests are placed in marsh habitats in bulrushes, willows, or other riparian vegetation at the water's edge, sometimes in tall growth in drier fields (CDFW 2019b). A typical clutch contains three to five eggs that hatch after 11 days, with young fledging at 11 to 14 days.

The geographic range of the tricolored blackbird is restricted to California's Central Valley and surrounding foothills, coastal and inland localities in southern and central California, scattered sites in northeastern California, Oregon, and central Washington, a single site in western Nevada, and locally in northwestern Baja California (Cornell 2019).

Portions of the GKR alignment in the San Joaquin Valley and wetlands near Castac and Lebec occur within the breeding range of the tricolored blackbird.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. A small group of tricolored blackbirds was observed within the GKR alignment at the time of the special-status wildlife surveys. A group of eight individuals was observed in Salt Grass Flats and Baltic and Mexican Rush Marshes along Grapevine Creek in the Castac Valley between Fort Tejon State Historic Park and Lebec, north of Bear Trap Road.

A 2011 CNDDDB record (Occurrence #453) was reported in a hardstem bulrush marsh surrounded by willows located in a tributary to Gorman Creek 1.2 miles (1.8 kilometers) east of the Gorman Substation; this record spans several years and includes nesting 1998 and 2011.

One undated CNDDDB probable nesting occurrence (Occurrence #454) for the tricolored blackbird was reported 0.1 mile (0.2 kilometers) northeast of the GKR alignment at the southern end of Castac Lake. A 1991 nesting colony record (Occurrence #179) of between 700 and 1,000 birds was reported from an artificial lake at the Rio Bravo County Club located approximately 1.8 miles (2.9 kilometers) west of the GKR alignment, east of Bakersfield; there were no birds observed at this location during subsequent surveys in 1992, 1994, and 2014. A 1992 nesting record (#208) was reported east of the GKR alignment where it intersects Caliente Creek; this location was associated with agricultural operations, including an irrigation sump. A 2015 record (Occurrence #947) was located 4.2 miles (6.8 kilometers) east of the Gorman Substation on the northwest shore of Quail Lake, where five distinct colonies located in bulrush encompassed over 1,000 tricolored blackbirds and nesting individuals. A nearby colony (Occurrence #399) was also observed in 2015 on the south side of Quail Lake (CNDDDB 2019).

There are approximately 15 eBird records for the tricolored blackbird in the vicinity of the GKR alignment, including a 1988 eBird record of a probable nesting colony near Laval Road, approximately 1.4 mile (2.2 kilometers) west of the GKR alignment and east of Wheeler Ridge. There are eBird sightings of greater than 80 birds at Brite Lake east of the GKR alignment in the Brite Valley west of Tehachapi in March 2018 and over 100 birds at Quail Lake 4.2 miles (6.8 kilometers) east of the Gorman Substation in April 2017 (eBird 2019).

Potentially suitable nesting habitat is present within the wetland areas containing cattails, tules, and bulrush within the GKR alignment near Castac Lake. In addition, any unlined agricultural or stock ponds supporting emergent aquatic vegetation such as cattails or bulrush within the GKR alignment may provide

potentially suitable nesting habitat for the tricolored blackbird. Unsuitable habitat includes all upland habitats and developed areas, as well as dense riparian shrublands and woodlands.

The tricolored blackbird is likely to nest within the GKR alignment at Castac Lake and in nearby marsh vegetation.

### 5.3.3 CDFW Fully Protected Species

The golden eagle was observed within the GKR alignment and is listed as Fully Protected in California by CDFW.

#### 5.3.3.1 Golden Eagle (*Aquila chrysaetos*) - FP

The golden eagle is a CDFW Fully Protected species. The golden eagle is a large, dark-brown raptor with a relatively small head, large feet, and golden colored nape. While hunting, these raptors soar high in the air, contour the terrain at low levels, and hunt from prominent stationary perches. A golden eagle's diet consists primarily of rabbits, hares, and ground squirrels (Cornell 2019). Golden eagles typically construct stick nests on steep cliffs and ledges; less often, they will nest in medium to tall trees adjacent to open country. Golden eagles usually lay two eggs that hatch after approximately 44 days of incubation. Nestlings fledge after approximately 70 days (Cornell 2019).

The golden eagle inhabits a wide range of habitats in the northern hemisphere, especially in mountainous areas; however, they can also be observed foraging in open woodlands, grasslands, and deserts. They typically nest on steep cliffs and ledges; less often, they will nest in medium to tall trees adjacent to open country or in utility towers (Cornell 2019).

Portions of the GKR alignment occur within the breeding range of the golden eagle.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. One golden eagle and one active nest with one eaglet were observed on two occasions within the GKR alignment at the time of the special-status wildlife surveys. The eagle and nest were observed in a tower located on an adjacent alignment within 0.1 mile (0.2 kilometer) of the GKR alignment; this tower occurs on a ridgetop at 3,200 feet (975 meters) amsl within open Blue Oak Woodland approximately six miles (9.6 kilometers) northwest of Stallion Springs. A golden eagle was also observed perching on a pole and flying over Annual Brome Grassland within the GKR alignment southeast of Arvin and the California aqueduct at 600 feet (183 meters) amsl, but no other nesting golden eagles were observed.

A 2004 record (Occurrence #87) of a golden eagle in a pine "nest tree" was reported approximately 1.8 miles (2.9 kilometers) east of the Gorman Substation (CNDDDB 2019). A 1941 egg collection record (Occurrence #319) was reported 3.7 miles (6 kilometers) south of the alignment on Tehachapi Mountain.

There are more than 20 eBird records for the golden eagle in the vicinity of the GKR alignment, especially in mountainous areas between Grapevine and Quail Lake and in the vicinity of Stallion Springs; however, none of these are nesting records (eBird 2019).

Suitable foraging habitat for the golden eagle within the GKR alignment occurs in open woodlands and grasslands. Known suitable nesting habitat for the golden eagle occurs in one locations, based on the



special-status wildlife surveys and the 2004 CNDDB record (Occurrence #87): on ridgetops at 3,200 feet (975 meters) amsl or above within oak woodland vegetation between Stallion Springs and Towerline Road in the Tehachapi Mountains. Potentially suitable habitat includes areas with steep cliffs and ledges, tall trees, and utility structures in Kern Canyon, in the San Joaquin, Tehachapi, and Cummings valleys and environs, and in the Tehachapi Mountains between Grapevine and the Gorman Substation at the southeastern end of the GKR alignment. Unsuitable nesting habitat includes lowland vegetation lacking potential nesting structures and other areas lacking trees and rocky outcrops and cliff faces, and all developed areas.

The golden eagle is likely to forage within the GKR alignment and is also likely to nest in the location reported in this survey above 3,000 feet (914 meters) amsl in the Tehachapi Mountains between Stallion Springs and Towerline Road as well as north of Gorman Creek in the Tehachapi Mountains within a mile (1.6 kilometers) of the Gorman Substation. The golden eagle could nest elsewhere within the GKR alignment, especially in trees and on utility structures, but is unlikely to do so, based on existing nesting data.

### 5.3.4 CDFW Species of Special Concern

Ten wildlife species observed on the alignment are designated as California Species of Special Concern by CDFW, including the tricolored blackbird, discussed above, and nine other species: western spadefoot, burrowing owl, Vaux's swift, northern harrier, loggerhead shrike, Oregon vesper sparrow, purple martin, yellow warbler, and the American badger.

#### 5.3.4.1 Western Spadefoot (*Spea hammondi*) – CSC

The western spadefoot is a CDFW Species of Special Concern. Western spadefoots are a small, stout-bodied toad with short legs, warty skin, and wide-set eyes with vertical pupils and a glossy black spade shaped like a wedge or teardrop on each hind foot (Calherps 2019). Vernal pools are essential for breeding and egg-laying and breeding is successful in pools that do not contain bullfrogs, fish, or crayfish (Jennings and Hayes 1994, CDFW 2019b). Breeding and egg laying normally occur from late winter to the end of March. Females lay numerous small, irregular clusters containing 10 to 42 eggs and can lay more than 500 eggs in one season (Zeiner 1988). Eggs normally hatch within two weeks.

The western spadefoot is endemic to California and northern Baja California, where it occurs in the Central Valley and associated foothills into the Transverse and western Peninsular ranges of southern California. The western spadefoot occurs primarily in grassland habitats in open areas within woodlands, shrublands, and washes and floodplains in sandy or gravelly soils.

Portions of the GKR alignment occur within the breeding range of the western spadefoot.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. Two western spadefoots were observed during the special-status wildlife surveys. The two western spadefoots were located under a tire at the edge of a stock pond located within 0.01 mile (0.02 kilometer) of the GKR alignment; this pond occurs just south of the alignment near a ridgetop at 3,200 feet (975 meters) amsl within a grassy opening in Blue Oak Woodland approximately six miles (9.6



kilometers) northwest of Stallion Springs on the northern portion of the Tejon Ranch property. Due to pond water turbidity, tadpoles observed swimming in the nearby pond could not be identified.

A 2010 record (Occurrence #439) of many western spadefoots was reported in a broad valley south of Tejon Creek at the western base of the Tehachapi Mountains, approximately 4.8 miles (7.7 kilometers) southwest of the alignment and about 1 mile (1.6 kilometers) north of Tejon Reservoir Number 2 at approximately 1,600 feet (488 meters) amsl. A 2013 CNDDDB record (Occurrence # 438) of an adult western spadefoot was reported approximately 3.7 miles (5.9 kilometers) southeast of the alignment at the southern end of the San Joaquin Valley east of Grapevine near the intersection of Pastoria Creek and Edmonston Pumping Plant Road (CNDDDB 2019).

Suitable breeding habitat for the western spadefoot is present in grasslands and grassy openings in oak woodlands with associated ponds or vernal pools in the Tehachapi Mountains northwest of Stallion Springs; one location where the western spadefoot was observed during the special-status wildlife surveys provides suitable habitat for this species. Potentially suitable breeding habitat is located in valleys and on lower slopes of the Tehachapi Mountains between Comanche Point and Grapevine where suitable pools and ponds are present and possibly in wetland areas associated with tributaries to Gorman Creek at the southern base of the Tehachapi Mountains. Unsuitable breeding habitat includes steep rocky cliffs, dense wooded vegetation, areas lacking suitable pools and ponds, and developed areas.

The western spadefoot is likely to occur within the alignment where a stock pond is located south of the GKR alignment near a ridgetop at 3,200 feet (975 meters) amsl approximately six miles (9.6 kilometers) northwest of Stallion Springs; it is unlikely to occur within the alignment in valleys and on lower slopes of the Tehachapi Mountains or in other seasonal wetlands in grassy areas, based on the lack of records documenting presence. It does not occur where ponds and seasonal wetlands are absent, in developed areas, in rocky soils, and in dense vegetation.

#### 5.3.4.2 Burrowing Owl (*Athene cunicularia*) – CSC

The burrowing owl is a CDFW Species of Special Concern. Burrowing owls are small (length 9.5 inches [24.1 centimeters], wingspan 21 inches [53.3 centimeters]), long-legged, ground-dwelling, diurnal owls with a rounded head that lacks ear tufts, brown and whitish markings, with a whitish eyebrow and lemon-yellow eyes. The breeding season for the burrowing owl can begin as early as late February and typically ends by late August. Up to nine eggs are laid and incubation is complete in 28 to 30 days. Young owls fledge in 44 days.

The burrowing owl occurs in arid regions of western North America, Florida, and the Caribbean and in portions of Central and South America. They winter in the southern latitudes, and many remain as year-long residents in southern California. In California, high-density burrowing owl populations have been documented in agricultural areas in the San Joaquin and Imperial valleys.

Portions of the GKR alignment occur within the breeding range of the burrowing owl.

Burrowing owls occur in a variety of habitat types throughout California, including annual and perennial grasslands, agricultural fields, deserts, and scrublands characterized by low-growing vegetation (California Burrowing Owl Consortium 1997). Suitable burrowing owl habitat may also include areas with trees and shrubs where canopies cover less than 30 percent of the ground surface. Burrowing owls may occupy both artificial and natural burrows that provide shelter from the elements as well as protection

from predators. Burrowing owls also use burrows for nesting during spring and early summer months. California ground squirrel (*Otospermophilus beecheyi*) burrows are used, though inactive coyote, kit fox, badger, and desert tortoise burrows may also be utilized. Burrowing owls can also create and/or modify existing owl burrows. Artificial burrows may include culverts, concrete pipes, irrigation boxes, wood debris piles, and openings beneath cement or asphalt. They are also found along washes and wash banks where small mammals and invertebrates are more abundant.

**Presence in the Project Area:** Surveys for burrowing owls within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. A single burrowing owl and two active burrows were observed within the GKR alignment at the time of the special-status wildlife surveys. The burrows were observed in Annual Brome Grassland within the GKR alignment southeast of Arvin and east of the California aqueduct at 600 feet (183 meters) amsl.

There are 14 CNDDDB burrowing owl records within 3 miles (4.8 kilometers) of the alignment. Towards the north end of the GKR alignment, an April 1987 record (Occurrences #37) was reported for three individuals east of the Bena Landfill approximately 2.0 miles (3.2 kilometers) east of the GKR alignment northeast of Edison. A 1990 record (Occurrence #1918) was reported two miles (3.2 kilometers) east of the alignment in an area that currently supports an orchard just to the east of Caliente Wash; two breeding pairs were observed in the location between 1981 and 1990. Four 1990 records (Occurrences #123-126) were reported approximately 1.7 to 2.8 miles (2.7 to 4.5 kilometers) east of the GKR alignment, north of Comanche Point, and 2.8 miles (4.5 kilometers) east southeast of Arvin in grassland with scattered shrubs; each location marked a wintering burrow with one adult. A 2012 record (Occurrence #1913) was reported approximately 1.8 miles (1.9 kilometers) east of the GKR alignment in a broad valley south of Tejon Creek at the western base of the Tehachapi Mountains and south of Comanche Point. A 2013 CNDDDB record (Occurrence #1909) was reported approximately 3.2 miles (5.0 kilometers) east of the GKR alignment at the western base of the Tehachapi Mountains, 2.2 miles (3.5 kilometers) north northeast of the Edmonston Pumping Plant and east of Wheeler Ridge. An 1891 record (Occurrence #1761) was generally described as near Gorman. Most of these observations were recorded in grassland vegetation or agricultural areas (CNDDDB 2019).

There are seven eBird records for the burrowing owl in the vicinity of the GKR alignment from Arvin south to Grapevine and Lebec, including a June 1979 observation of six individuals in a grassland-agricultural transition area along the “road to Edmonston Pumping Station” near or overlapping the GKR alignment that may have represented a nesting group; a 1983 observation within Grapevine Canyon near Grapevine, and two 2014 observations within the general GKR alignment area near Lebec (eBird 2019).

Suitable nesting and foraging habitat for the burrowing owl is generally characterized by gently sloping to flat, open terrain with sparse low-growing vegetation, often in association with burrowing mammals (Cornell 2019). Observations of the burrowing owl within the past 20 years occur in only two locations, the 2017 observations from the special-status wildlife surveys southeast of Arvin and east of the California aqueduct at 600 feet (183 meters) amsl at the base of the western foothills of the Tehachapi Mountains and the 2014 eBird observations near Lebec. Potentially suitable nesting habitat within the GKR alignment includes grassland, fallow agricultural land, and open shrubland vegetation in areas that contain small mammal burrows, adequate openings in native vegetation, and/or hillocks that enhance potential visibility for the burrowing owl, such as in the foothills and valleys of the southern Sierra Nevada, in western foothills and valleys of the Tehachapi Mountains, the southern San Joaquin Valley between

Highway 58 and Grapevine, and near Gorman. Unsuitable habitat includes portions of the GKR alignment that support shrub or tree cover that is too dense (>30 percent cover), too tall, or that lack existing burrows (often in rocky substrates), such as on the upper slopes of the Tehachapi Mountains in many areas, as well as in riparian woodlands and forests, and seasonally inundated soils. The burrowing owl was not observed or reported from rocky or mountainous areas or from developed areas along the GKR alignment, either during the surveys or in CNDDDB and eBird records.

The burrowing owl is likely to occur within the GKR alignment in suitable habitat in one location - at the base of the western foothills of the Tehachapi Mountains northeast of Comanche Point and southeast of Arvin. The burrowing owl could occur elsewhere within the GKR alignment in suitable habitat but is unlikely to do so, based on existing observation and nesting data. It is unlikely to nest within the GKR alignment in dense woody vegetation, rocky substrates, mountainous areas, riparian woodlands and forests, seasonally inundated soils, areas under active agricultural production, and developed areas.

#### 5.3.4.3 Vaux's Swift (*Chaetura vauxi*) – CSC

The Vaux's swift is a CDFW Species of Special Concern. It is a small dark gray-brown bird (length 4.3 inches [11 centimeters], wingspan 12 inches [30 centimeters]) with swept back wings that are long and pointed, a short beak, and a square tail (Cornell 2019). Breeding occurs from early May to mid-August, with typical clutch sizes of between three and seven eggs; incubation lasts 18 to 20 days, with young leaving the nesting tree at about 28 days (CDFW 2019b).

The Vaux's swift migrates from northern Venezuela and Central America through Mexico and the western United States to southwestern Canada. The Vaux's swift is a summer resident of California that typically nests in coniferous or mixed hardwood forest and forages in forest openings, especially above streams and in old growth stands in hollow trees and snags. The GKR alignment is located south of the known breeding range of the Vaux's swift.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. The Vaux's swift was observed within the GKR alignment at the time of the special-status wildlife surveys. One individual was observed foraging with a mixed flock of swallows on the west side of Castac Lake.

No CNDDDB records occur within the GKR alignment (CNDDDB 2019).

There are seven eBird records in the vicinity of the GKR alignment, including in the Kern River canyon, the western foothills of the Tehachapi Mountains, Brite Lake, and Lebec; none of these are nesting records (eBird 2019).

The Vaux's swift is likely to occur as a transient within the GKR alignment while foraging or during migration but does not nest within the alignment, since the GKR alignment occurs south of the breeding range for this species and no suitable nesting habitat is present.

#### 5.3.4.4 Northern Harrier (*Circus hudsonius*) – CSC

The northern harrier is a CDFW Species of Special Concern; the scientific name was previously described as *Circus cyaneus*. The northern harrier is a slender, medium-sized raptor with long wings and

a long, rounded tail (length 18.1 to 19.7 inches [46 to 50 centimeters], wingspan 40.2 to 46.5 inches [102 to 118 centimeters]). It has a flat, owl-like face and a small, sharply hooked bill. Male harriers are gray above and white below, with black wingtips and a black-banded tail. Females and juvenile northern harriers are brown, with black bands on the tail (Cornell 2019). Northern harriers build a stick nest on or near the ground. A normal clutch consists of four to five eggs incubated for 28 to 36 days, with young fledging after 14 days (Cornell 2019).

Northern harriers inhabit freshwater and coastal salt marshes, as well as grasslands and open scrub habitats. The northern harrier breeds throughout North America and Eurasia. In the Central Valley, northern harrier nesting generally occurs below 5,700 feet (1,737 meters) amsl (Cornell 2019).

Portions of the GKR alignment occur within the breeding range of the northern harrier.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. One northern harrier was observed foraging along the GKR alignment west of Castac Lake in Baltic and Mexican Rush Marshes.

There are no CNDDDB occurrences of the northern harrier near the GKR alignment (CNDDDB 2019).

There are at least 15 eBird records for the species within or near the GKR alignment, including in the Kern River drainage, Cottonwood Creek, Caliente Creek, western foothills of the Tehachapi Mountains, southern San Joaquin Valley, Fort Tejon State Historic Park, Lebec, and Gorman, and marshes within two miles (3.2 kilometers) east of the Gorman Substation; none of these observations represented nesting records for this species (eBird 2019).

There is suitable foraging habitat for the species present within the GKR alignment; however, suitable nesting habitat is limited to relatively undisturbed wetlands and marshes, grasslands, and agricultural areas within the GKR alignment, particularly in lowland areas that support this type of vegetation such as near Castac Lake. Potentially suitable nesting habitat for this species within the GKR alignment may exist where grasslands, open shrublands, and wetlands occur in the creeks and valleys of the southern Sierra Nevada and Tehachapi Mountains where individuals have been observed but not nesting. Other potential nesting habitat for this species, if present, would be expected around the extended perimeter of reservoirs and lakes supporting marsh and other wetland habitats in the Cummings and Tehachapi valleys.

Unsuitable nesting habitat within the GKR alignment includes arid and seasonally barren areas, densely wooded areas, and all developed areas.

The northern harrier is likely to occur within the GKR alignment for brief periods while hunting. Potentially suitable nesting habitat is present within the grassland and wetland areas present within the GKR alignment in the vicinity of Castac Lake, where the northern harrier is unlikely to nest, based on the lack of nesting records; the lack of nesting records for the northern harrier within the GKR alignment suggests that this species does not nest within the GKR alignment.

#### 5.3.4.5 Loggerhead Shrike (*Lanius ludovicianus*) – CSC

The loggerhead shrike is a CDFW Species of Special Concern. The loggerhead shrike is a relatively thick-bodied bird, with length measurements from 7.9 to 9.1 inches (20 to 23 centimeters) and a wingspan ranging from 11 to 12.6 inches (28 to 32 centimeters). Shrikes have large, blocky heads and a relatively

thick, slightly hooked bill. The loggerhead shrike is a gray bird with a black mask and white flashes in the black wings. The gray head contrasts with the wide, black mask, black bill, and white throat. Loggerhead shrike nests are typically found on stable branches of densely-foliaged shrubs or trees and are usually well-concealed. A normal clutch consists of three to eight eggs incubated for two weeks, with young fledging after 10 to 12 days (Cornell 2019).

Loggerhead shrikes are year-round residents that inhabit lowlands and foothills throughout much of California, although the ranges of the species extend across North America, especially the southern half and the high plateaus of the Intermountain West. They occupy open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches.

Portions of the GKR alignment occur within the breeding range of the loggerhead shrike (CDFW 2019b).

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. Two loggerhead shrikes were observed within the GKR alignment during the special-status wildlife surveys. One loggerhead shrike was observed foraging in Blue Oak Woodland above Little Sycamore Canyon in the western Tehachapi Mountains. One loggerhead shrike was observed foraging in a wash supporting Mulefat Thickets just southeast of Grapevine.

No CNDDDB occurrences exist within the GKR alignment (CNDDDB 2019).

There are over 20 eBird records for the loggerhead shrike in the vicinity of the GKR alignment, including in the Kern River drainage, Caliente Creek, the Cummings Valley, Brite Lake, several locations in the western Tehachapi Mountains and associated foothills, the southern San Joaquin Valley, Grapevine, Lebec, and Gorman Post Road; none of these represent nesting records (eBird 2019)

Suitable foraging habitat for the loggerhead shrike is present in the open fields and grasslands along and in the vicinity of the alignment in the southern Sierra Nevada, the Tehachapi Mountains and associated foothills, the Cummings Valley, Brite Lake, the southern San Joaquin Valley, and all habitat in the vicinity of the Gorman Substation. No loggerhead shrike nests were observed within the GKR alignment during the surveys. Potentially suitable nesting habitat for this species is present in association with large shrubs or trees with dense foliage that conceals the nest, including in riparian vegetation, foothill woodland (oak and California buckeye woodlands), and shrublands that occur within the GKR alignment below 7,500 feet (2,300 meters) amsl, especially in Blue Oak Woodland above Little Sycamore Canyon in the western Tehachapi Mountains, and in Mulefat Thickets just southeast of Grapevine. Poor-quality habitat for the loggerhead shrike includes urbanized and agricultural areas lacking shrubs, posts, fence lines, or other perches.

The loggerhead shrike is likely to forage within portions of the GKR alignment and could nest within the GKR alignment in shrublands and woodlands that provide suitable nesting sites for this species in Blue Oak Woodland above Little Sycamore Canyon in the western Tehachapi Mountains, and in Mulefat Thickets just southeast of Grapevine. Poor-quality habitat for the loggerhead shrike includes urbanized and agricultural areas lacking shrubs, posts, fence lines, or other perches.

#### 5.3.4.6 Oregon Vesper Sparrow (*Pooecetes gramineus affinis*) – CSC

The Oregon vesper sparrow is a CDFW Species of Special Concern while wintering; it is under review for listing by USFWS (ECOS 2019). Oregon vesper sparrows are a large sparrow (length 6.25 inches [16 centimeters]; wingspan 10 inches [25 centimeters]), that have a grayish brown, streaked chest and back, white eye ring and white outer tail feathers. Oregon vesper sparrows build a shallow cup nest of woven grasses that is placed on the ground, with a typical clutch containing two to six eggs, which are incubated for 11-13 days and hatchlings fledging after 20-22 days (Shuford and Gardali 2008).

The Oregon vesper sparrow is one of four subspecies of the vesper sparrow (*Pooecetes gramineus*); the vesper sparrow species has a broad distribution across North America, but the foraging range of the Oregon subspecies is confined to southwestern British Columbia south into northern Baja California. The breeding range of the Oregon vesper sparrow includes southwestern British Columbia, western Washington and Oregon, and northwestern California. Oregon vesper sparrows are a winter resident of California between September and April, primarily in lowlands south of San Francisco Bay and west of the Sierra Nevada, where it may be found in grasslands, meadows, pastures, and roadsides feeding on seeds and invertebrates (Shuford and Gardali 2008, Cornell 2019). Members of this sub-species have been known to remain in California throughout the year; however, there is potential overlap in the range of this subspecies with the western range of the Great Basin subspecies of vesper sparrow (subsp. *confinis*) in this region (Shuford and Gardali 2008, Altman 2017). The Great Basin vesper sparrow is not a sensitive wildlife species.

The GKR alignment occurs south of the breeding range of the Oregon vesper sparrow (Shuford and Gardali 2008, Altman 2017).

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. One Oregon vesper sparrow was observed within the GKR alignment at the time of the special-status wildlife surveys. An adult Oregon vesper sparrow was observed foraging in a mosaic of Annual Brome Grasslands and scattered bladderpod shrubs southeast of Grapevine at the base of the Tehachapi Mountains on May 17, 2017; generally, Oregon vesper sparrows are winter residents in the Project area, arriving by mid-September and departing by the end of April.

There are no recorded CNDDDB occurrences for this species within the GKR alignment (CNDDDB 2019). There are eight eBird records for the vesper sparrow within the GKR alignment (eBird does not separate vesper sparrow observations by subspecies), including in Cottonwood Creek, Caliente Creek, the western Tehachapi Mountains, Arvin, two observations near Grapevine, and Quail Lake; of these, two are near or overlap the GKR alignment, one near Cottonwood Creek and one on Rancho Road in the southern San Joaquin Valley (eBird 2019).

The Oregon vesper sparrow occupies grassland vegetation, including moist meadows and grassland stubble, open shrublands with expanses of grasses between shrubs, and weedy agricultural fields. Suitable wintering habitat for the Oregon vesper sparrow occurs in grasslands near Cottonwood Creek in the southern Sierra Nevada, in the western Tehachapi Mountains surrounding Comanche Point, in the grasslands and weedy agricultural fields of the southern San Joaquin Valley and nearby foothills of the Tehachapi Mountains. The Oregon vesper sparrow is likely to occur within the GKR alignment in suitable



wintering habitat, as described, but does not nest within the alignment, based on lack of nesting records within the Project area.

#### 5.3.4.7 Purple Martin (*Progne subis*) – CSC

The purple martin is a CDFW Species of Special Concern. Purple martins are very large (length 8 inches [20 centimeters]; wingspan 18 inches [46 centimeters]), broad-chested swallows with stout, slightly hooked bills, short, forked tails, and long, tapered wings. Adult males are iridescent, dark blue-purple overall with brown-black wings and tail. Females and immature purple martins are duller, with variable amounts of gray on the head and chest and a whitish lower belly (Cornell 2019). Purple martins usually nest in old woodpecker cavities, with a typical clutch of three to six eggs; incubation generally lasts 15 to 18 days, with hatchlings fledging after 27 to 36 days (Shuford and Gardali 2008).

Purple martins migrate from south and central America to North America to breed, with migration from mid-March to late September. They occur within the GKR alignment primarily as a summer resident and migrant, and most nesting records occur north of Stockton on the floor of the Central Valley (Shuford and Gardali 2008). There are, however, records of nesting purple martins in oak woodlands in the Tehachapi Mountains and the southern “Tejon Ranch/Grapevine” area in 1982 and in the Bear Mountain area east of Arvin in 2000 (Shuford and Gardali 2008). Twenty-three nesting pairs were reported in a 2010 purple martin study at Tejon Ranch, all in cavities in large valley oak trees at the tops of ridges in “open savanna settings”; the mean elevation for nesting cavities was 4,334 feet (1,321 meters) amsl and the lowest elevation was 3,166 feet (965 meters) amsl (White et al. 2011). The nearest purple martin nest to the GKR alignment was located near Grapevine Peak less than one mile (1.6 kilometers) east of the alignment at 4,800 feet (1,463 meters) amsl; the elevation of the GKR alignment in this area is below 3,000 feet (914 meters) amsl.

Nesting sites include a combination of available nesting cavities, aerial insect prey, open air space above nesting sites and low canopy cover at nest height, as well as low numbers of European starlings (Shuford 2008). Although nesting boxes are utilized for nesting by purple martins elsewhere in the United States, in the Tehachapi Mountains nesting sites are characterized as occurring in large oak trees in prominent positions at relatively high elevations (Williams 2002, Shuford and Gardali 2008, White et al. 2011). Digital files provided by CDFW encompass large areas of the Tehachapi Mountains outside of the GKR alignment, with the exception of the segment between Stallion Springs and the Banducci Substation (<https://data.cnra.ca.gov/dataset/purple-martin-range-cwhr-b338-ds1570>).

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. One purple martin was observed at the time of the special-status wildlife surveys sitting on a power line 2.4 miles (3.9 kilometers) southeast of Power Line Road in Arvin; this location occurs in the Tehachapi Mountains above Annual Brome Grassland and scattered bladderpod, downslope from oak woodland vegetation further east.

CNDDDB records within the Project area occur east of the alignment in the Tehachapi Mountains; the closest observation (Occurrence #48) was reported 4.5 miles (7 kilometers) east of the GKR alignment between El Paso Creek and Tejon Creek at 1,350 feet (411 meters) amsl (CNDDDB 2019).



There are three eBird observations of this species reported west of Stallion Springs and 0.5 to 0.7 mile (0.8 to 1 kilometer) south of the GKR alignment; these observations occurred between 2013 and 2019. There are two eBird observations to the northeast of the GKR alignment and to the west of Bear Valley within 5 miles (8 kilometers) of the alignment. Additional eBird observations are reported near the “old Valley Oaks” Tejon Ranch headquarters and further south, but these are more than 5 miles (8 kilometers) east or southeast of the alignment (eBird 2019). A nesting observation was recorded near Grapevine Peak east of the GKR alignment at an elevation 1,800 feet (549 meters) above the alignment in that area (White et al. 2011).

The purple martin may forage within the GKR alignment in the Tehachapi Mountains. Potential suitable habitat for nesting purple martins occur within the GKR alignment primarily above 4,000 feet (1,219 meters) in the Tehachapi Mountains in open oak woodland vegetation, although nests have been reported as low as 3,166 feet (965 meters) amsl (White et al. 2011). There are only two mountainous portions of the GKR alignment supporting oak woodland vegetation on ridges above 4,000 feet (1,219 meters) amsl, a 1 mile (1.6 kilometer) stretch northwest of Stallion Springs and a 0.8 mile (1.3 kilometer) stretch between Castac Lake and Gorman. Neither of these locations have purple martin nesting records. Unsuitable nesting habitat for the purple martin within the GKR alignment includes all portions of the alignment lacking mature oak woodland vegetation, especially large valley oaks; areas below 4,000 feet (1,219 meters) amsl (or 3,166 feet [965 meters] amsl to include the lower range of nesting observations in the White et al. 2011 study); and areas not located on prominent ridgetops and peaks.

The purple martin is likely to forage within the GKR alignment in the Tehachapi Mountains between Arvin and Stallion Springs; however, it is unlikely to nest within the alignment, based on lack of suitable nesting conditions.

#### 5.3.4.8 Yellow Warbler (*Setophaga petechia*) – CSC

The yellow warbler is a CDFW Species of Special Concern while nesting. The yellow warbler is a small songbird with a medium-length tail and round head (length: 4.7 to 5.1 inches [12 to 13 centimeters]; wingspan: 6.3 to 7.9 inches [16 to 20 centimeters]). Adult yellow warblers are generally yellow in color; males are a bright yellow with unmarked faces and reddish streaks on the chest (Cornell 2019). Yellow warblers lay one to seven eggs and incubate for approximately 10 to 13 days, with young fledging in 9 to 12 days (Cornell 2019).

The yellow warbler is a summer resident of California and winters in Central and South America. The yellow warbler forages in shrubby thickets and woodlands, particularly along watercourses and in wetlands where they commonly frequent trees including willows, alders, and cottonwoods up to elevations of 9,000 feet (2,700 meters) amsl in California, where it may nest (Shuford and Gardali 2008).

Portions of the GKR alignment occur within the breeding range of the yellow warbler.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. One yellow warbler was observed foraging in the Project area during the special-status wildlife surveys. An adult bird was observed in Fremont Cottonwood Forest on the west side of Castac Lake.

There are no CNDDDB records within the GKR alignment (CNDDDB 2019). There are 10 eBird records within and near the GKR alignment, including in the Kern River drainage, Brite Lake, drainages in the western Tehachapi Mountains, Fort Tejon State Historic Park, Lebec, west of Castac Lake, Gorman, and marshes located east of the Gorman Substation; none of these represent nesting observations (eBird 2019).

Suitable foraging habitat within the GKR alignment occurs where the alignment crosses rivers and streams supporting stands of willows and other riparian vegetation in the Kern River drainage and at Fort Tejon State Historic Park, and west of Castac Lake; these locations also represent potentially suitable nesting habitat. Upland habitats and developed areas are unlikely to support nesting yellow warblers and provide unsuitable nesting habitat for this species, based on the lack of survey and CNDDDB or other documented observations.

The yellow warbler is likely to occur within the GKR alignment in suitable habitat while foraging but is unlikely to nest within the alignment.

#### 5.3.4.9 American Badger (*Taxidea taxus*) – CSC

The American badger is a CDFW Species of Special Concern. The American badger has a flat body, short legs, and a triangular face. American Badgers have long brown fur with white stripes on their head. They have relatively small ears and long, sharp front claws. Female American badgers give birth in March to one to five cubs. The primary prey sources are ground squirrel and other burrowing rodents (CDFW 2019b).

American badgers are widely distributed in North America from central Alberta south to central Mexico, and from the Pacific coast east to the Great Lakes. Badgers are most abundant in drier open stages of shrub, forest, and herbaceous communities. American badgers require sufficient food, friable soils, and open, uncultivated landscapes.

Portions of the GKR alignment occur within the breeding range of the American badger.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No live American badgers were observed within the GKR alignment during the special-status wildlife surveys; however, three active American badger dens were observed within the GKR alignment, based on the shape and size of the den and the claw mark patterns. One den was located in Scalebroom Scrub at 1,000 feet (304 meters) amsl near a tributary to Cottonwood Creek in the southern Sierra Nevada between the Kern River 1 Hydroelectric Substation and Highway 58. Two American badger dens were located on the north-facing slopes of the Tehachapi Mountains between Castac Lake and the Gorman Substation; one was observed in a north-facing drainage in Annual Brome Grassland at 4,050 feet (1,234 meters) amsl, and the other was located in Crane Canyon in Valley Oak Woodland at 3,700 feet (1,128 meters) amsl.

There are no CNDDDB occurrences within or near the GKR alignment north of Arvin. An undated record (Occurrence #268) overlaps the GKR alignment at Fort Tejon State Historic Park. A 2012 record (Occurrence #475) was reported 0.6 mile (1 kilometer) north of the GKR alignment at 450 feet (137 meters) amsl and north of Comanche Point, east of Arvin, and near Sycamore Road. A 2012 record (Occurrence #474) was reported 0.7 mile (1.2 kilometers) southeast of the GKR alignment at 550 feet

(167 meters) amsl north of Comanche Point and Comanche Point Road and southeast of Arvin. A third 2012 record (Occurrence #476) was reported approximately 1.7 miles (2.7 kilometers) east of the GKR alignment and south of Comanche Point and Tejon Creek and 4.4 miles (7.1 kilometers) northwest of Tejon Reservoir No. 1.

Suitable habitat for the American badger includes arid open shrublands, woodlands and forests, and herbaceous communities with friable soils below 4,050 feet (1,234 meters) amsl in the foothills of the Sierra Nevada between the Kern River 1 Hydroelectric Substation and Highway 58 and on the north-facing slopes of the Tehachapi Mountains between Castac Lake and the Gorman Substation. Potentially suitable habitat includes other portions of the GKR alignment supporting open shrublands, woodlands and forests, and herbaceous communities with friable soils below 4,050 feet (1,234 meters) amsl in the Tehachapi Mountains. Unsuitable habitat includes dense woody vegetation, rocky substrates, riparian woodlands and forests and seasonally inundated soils, areas under active agricultural production, and developed areas. The American badger was not observed or reported from rocky areas or from developed areas within the GKR alignment.

The American badger is likely to occur within the GKR alignment while foraging, especially in the foothills of the Sierra Nevada between the Kern River 1 Hydroelectric Substation and Highway 58 and on the north-facing slopes of the Tehachapi Mountains between Castac Lake and the Gorman Substation; it could also have natal dens within the alignment in these areas. It is unlikely to have a natal den in other potentially suitable habitat in the Tehachapi Mountains and does not occur in dense woody vegetation, rocky substrates, riparian woodlands and forests and seasonally inundated soils, areas under active agricultural production, and developed areas.

## 5.4 Listed Sensitive Wildlife Species with Potential to Occur, but Not Observed

Several Federally-listed and/or California-listed wildlife species have the potential to occur within the GKR alignment but were not observed during the special-status wildlife surveys. These species have been reported as historic or extant occurrences (CDFW 2019b) in the Project region and are discussed here due to suitable habitat conditions along portions of the GKR alignment.

Other sensitive wildlife species that were *not observed* within the GKR alignment are discussed in Appendix F.

### 5.4.1 Federally-listed and California-listed Species

#### 5.4.1.1 Blunt-nosed Leopard Lizard (*Gambelia sila*) – FE, CE, FP

The blunt-nosed leopard lizard is a Federally Endangered, California Endangered, and CDFW Fully Protected species. No critical habitat rules have been published for the blunt-nosed leopard lizard.

The blunt-nosed leopard lizard is a relatively large lizard between 3 to 5 inches (7.6 to 12.7 centimeters) from snout to vent, with a regenerative tail that is longer than the body and a short blunt snout. Coloration for this species is variable, with a consistently whitish underside and upper gray to brown scales with cream to yellow-colored crossbands and alternating rows of dark spots. The blunt-nosed leopard lizard

hibernates in winter and becomes active in March or April, with breeding between late April and the end of June. Generally, one clutch to two to six eggs is laid each year in June and July, and the eggs hatch after two months of incubation.

Blunt-nosed leopard lizards inhabit the San Joaquin Valley and nearby valleys and foothills from southern Merced County south to Kern County and northeastern Santa Barbara County, generally below 2,400 feet (730 meters) amsl (Zeiner et al. 1988, USFWS 2010). The blunt-nosed leopard lizard uses rodent burrows for shelter and occurs in sparse vegetation in grassland and low scrub habitat with low topographic relief, often along washes and drainages in well-drained soils (CDFW 2019b). A 2015 study of blunt-nosed leopard lizard “patch size” was based on species presence correlated with the size of contiguous suitable habitat; no blunt-nosed leopard lizards were found in patches of less than 588 acres (238 hectares), and most were found on a minimum patch size of 988 acres (400 hectares, Bailey and Germano 2015).

The GKR alignment lies within the breeding range of the blunt-nosed leopard lizard between the Kern River 1 Hydroelectric Substation to just south of Grapevine.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No blunt-nosed leopard lizards were observed within the GKR alignment at the time of the special-status wildlife surveys.

There are numerous CNDDDB records for the blunt-nosed leopard lizard between the Kern River drainage and Grapevine Canyon, and five of these record locations generally intersect the GKR alignment (Figure 7). A 1990 record (Occurrence #427) was reported approximately 2.2 miles (3.5 kilometers) east of Arvin and touches the GKR alignment on the east side; it consisted of a blunt-nosed leopard lizard collection with 4 eggs. A 1991 record (Occurrence #426) overlaps the GKR alignment near the mouth of Little Sycamore Canyon and consisted of two blunt-nosed leopard lizard collections, one in 1991 and one in 1993. A 1991 record (Occurrence #425) overlaps the GKR alignment just south of Comanche Point where it intersects Tejon Creek, approximately 1.6 miles (2.6 kilometers) southwest of Comanche Spring. More recently, two nearby records of observations between 2011 and 2016 (Occurrences #423 and 424) were reported between one-half and one mile (0.8 to 1.6 kilometers) to the east of the alignment, southeast of Arvin and south of Bear Valley Road in the foothills of the Tehachapi Mountains. A 1994 record (Occurrence #419) overlaps the GKR alignment near the California aqueduct between Wheeler Ridge and Grapevine; a 1902 observation occurred in the same location, and 0.5 mile (0.8 kilometer) to the east of Occurrence #419 and the GKR alignment, there is a 1981 record (Occurrence #149) of 8 blunt-nosed leopard lizards and burrows in the same location as a 1914 observation. An 1863 record (Occurrence #430) was reported in Grapevine Canyon at 3,200 feet (975 meters) amsl in an area that generally overlaps the GKR alignment “about 2.5 miles northwest of old Fort Tejon, 2.7 miles south of Grapevine, Castac” (CNDDDB 2019).

To the north of California Highway 58, two records occur within 3 miles (4.8 kilometers) of the GKR alignment. A 1960 record (Occurrence #238) was reported 2 miles (3.2 kilometers) west of the GKR alignment at the Ant Hill Oil Field by California Highway 178. A 1989 record (Occurrence # 339) was reported 2.8 miles east of the GKR alignment in a narrow sandy wash in the Sierra Nevada foothills just northwest of the terminus of General Beale Road.

Potentially suitable habitat for blunt-nosed leopard lizards within the GKR alignment is characterized as sparsely vegetated scrub and grassland habitats in areas of low topographic relief in the southern San Joaquin Valley and surrounding foothills of the Sierra Nevada and Tehachapi Mountains (Figure 7); no observations of the blunt-nosed leopard lizard within the GKR alignment have been reported since 1994. Unsuitable habitat includes densely vegetated shrublands and woodlands, wetlands, croplands, developed areas, areas subject to seasonal flooding, steep slopes, and areas above 2,400 feet (730 meters) amsl.

The blunt-nosed leopard lizard is likely to occur in two areas within the GKR alignment - where the alignment crosses annual grassland and open scrub habitat in the San Joaquin Valley and nearby foothills of the Tehachapi Mountains north and south of Comanche Point southeast of Arvin and near the California aqueduct between Wheeler Ridge and Grapevine. All CNDDDB records are 25 years or older that overlap the alignment, although recent records (2011-2016) not on the alignment were reported southeast of Arvin within one-half to one mile (0.8 to 1.6 kilometers) of the alignment.

#### 5.4.1.2 California Condor (*Gymnogyps californianus*) - FE, CE, FP

The California condor is a Federally Endangered, California Endangered, and CDFW Fully Protected Species. Critical habitat was designated for the California condor in 1977 (42 FR 47840 47845) and overlaps the GKR alignment in the Tehachapi Mountains between Wheeler Ridge and Digier Road north of Fort Tejon State Historic Park.

California condors are the largest wild birds in North America (length 46.1-52.8 inches [117-134 centimeters]; wingspan 109 inches [277 centimeters]). The elongate black wings have contrasting white patches under the wings and separated primary feathers that give a fingered appearance near the wingtips. In flight, the head is smaller than the larger black body, with a short, wide, black tail. The naked head and neck are yellowish-orange on black. Immature condors are more gray than black, with mottled gray patches under the wings. Females generally lay one egg, which hatches in 53 to 60 days. Condor young are dependent on their parents for at least 6 months after fledging (Cornell 2019).

California condors are opportunistic scavengers that require large areas of open foothill grassland, oak savannas and woodlands, rocky shrublands, and coniferous forests below 9,000 feet (2,700 meters) amsl in the region surrounding the southern San Joaquin Valley and including the southern Sierra Nevada, the Tehachapi Mountains, Coast Ranges from Santa Clara County south to Los Angeles County and associated Transverse Ranges, northern Arizona, and southern Utah around the Grand Canyon area. They forage by soaring and gliding while looking for carrion and require open areas to land and take-off. They roost in large trees, snags, and on cliffs and rocky outcrops, often in large groups, and return to roosting sites in successive years (USFWS 1996). Roosting sites are generally located near foraging and nesting areas. California condors usually nest in caves or on ledges on steep cliffs. Individual birds have a large range and have been known to travel up to 160 miles (250 kilometers) in search of carrion (USFWS 1996).

Portions of the GKR alignment occur within the breeding range of the California condor.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15

and April 19, 2019. No California condors were observed within the GKR alignment at the time of the special-status wildlife surveys.

A 2013 CNDDDB record (Occurrence #12) of two soaring California condor individuals was reported 2.5 miles (4 kilometers) south of the GKR alignment in the Tehachapi Mountains above Tejon Creek Canyon and between Cedar and White Cow canyons; this location includes other observations as early as 1889. A 1976 record (Occurrence #2) was reported more than 6 miles (9.7 kilometers) east of the GKR alignment in a broad area encompassing Winters Ridge and El Paso Creek in the Tehachapi Mountains.

Several eBird observations span the general Project area from the Kern River south to near the alignment east of Arvin, with several observations in the Tehachapi Mountains east of Comanche Point, including a 2015 sighting of 19 California condors less than 0.6 miles (1 kilometer) south of the alignment near Stallion Springs, as well as in Grapevine Canyon (eBird 2019).

Potentially suitable roosting habitat for the California condor includes large trees, snags, and on cliffs and rocky outcrops, often in rugged mountainous habitat. Nesting habitat includes caves and ledges, often in deep canyons supporting cliffs. No suitable roosting or nesting habitat occurs within 2.5 miles (4 kilometers) of the GKR alignment. However, suitable foraging habitat is present within undeveloped areas in the Tehachapi Mountains.

The California condor is likely to occur briefly along the alignment; however, it does not roost or nest within 2.5 miles (4 kilometers) of the GKR alignment.

#### 5.4.1.3 Tipton Kangaroo Rat (*Dipodomys nitratoides nitratoides*) FE, CE

The Tipton kangaroo rat is a Federally Endangered and State Endangered Species. No critical habitat rules have been published for the Tipton kangaroo rat.

Tipton kangaroo rats are a small kangaroo rat with a body length averaging 3.9 to 4.3 inches (10.0 to 11.0 centimeters), a tail length of about 4.9 to 5.1 inches (12.5 to 13.0 centimeters), and a weight of 35 to 38 grams (USFWS 2010). Tipton kangaroo rats are one of three subspecies of the San Joaquin kangaroo rat and can be distinguished from other kangaroo rats within their range by the presence of four toes on the hind foot; other species have five toes. Mating occurs in winter and peaks in early spring (late March to early April). Females usually produce one litter per season, which stay in the burrow until they are fully furred and able to move about on their own, generally at about 6 weeks of age.

The Tipton kangaroo rat is endemic to the southern San Joaquin Valley and surrounding foothills below 1,800 feet (549 meters) amsl. They occur in grassland vegetation as well as valley scrub communities and require soft friable soils in areas not subject to seasonal flooding areas; grassland seeds provide a primary food source (CDFW 2019b). The historic range once encompassed about 1.7 million acres (695,000 hectares) from Tulare Lake to the foothills of the Tehachapi Mountains in the San Joaquin Valley in California but now occur in scattered isolated clusters, mostly to the west and north of the GKR alignment, including near the Kern National Wildlife Refuge, east of Maricopa, the western border of the Buena Vista Lakebed, Coles Levee Ecosystem Preserve, and near Lamont southeast of Bakersfield (USFWS 2010).



The GKR alignment lies within the breeding range of the Tipton kangaroo rat between the San Joaquin Valley east of Bakersfield and Edison south to Grapevine; however, none of the areas supporting current populations of this species occur within the GKR alignment.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No Tipton kangaroo rats, their sign, or burrows or burrow complexes were observed within the GKR alignment at the time of the special-status wildlife surveys.

A 1903 CNDDDB record (Occurrence #95) overlaps the GKR alignment approximately 1.5 mi (2.4 kilometers) north of Grapevine at Rose Station, Fort Tejon. A nearby 1976 record (Occurrence #97) was reported further west, 1.5 miles (2.4 kilometers) west of Mettler. A 1999 record (Occurrence #104) was reported less than 1 mile (1.6 kilometers) west of the alignment and approximately 1.5 miles (2.4 kilometers) east of the town of Edison and west of Bena; this record represents the capture and release of 12 Tipton kangaroo rats (CNDDDB 2019).

Potentially suitable habitat for the Tipton kangaroo rat within the GKR alignment includes stretches of natural undisturbed grasslands, open shrublands, or fallow lands in the southern San Joaquin Valley with soft friable soils that have supported the species in the past, such as in the foothills of the southern Sierra Nevada north of Highway 58 as well as in grasslands and fallow agricultural land east of Wheeler Ridge south to Grapevine; there is potential suitable habitat in the area surrounding Comanche Point as well (Figure 8). Low quality habitat includes all other portions of the GKR alignment in upland areas above 1,800 feet (meters) amsl, wetlands, dense shrublands and woodlands, croplands, and developed areas.

The Tipton kangaroo rat is likely to occur in two limited areas within the GKR alignment: in soft friable soils north of California Highway 58 and south of the foothills of the southern Sierra Nevada, where it was observed 20 years ago, as well as in grasslands and fallow agricultural land east of Wheeler Ridge south to Grapevine. Although the observations at the southern end of the San Joaquin Valley near Grapevine are more than 40 years old, conditions remain within 3 miles (4.8 kilometers) that could support this species. The Tipton kangaroo rat does not occur elsewhere within the GKR alignment.

#### 5.4.1.4 Least Bell's Vireo (*Vireo bellii pusillus*) – FE, CE

The least Bell's vireo is a Federally Endangered and California Endangered species. Critical habitat was designated for the least Bell's vireo in 1994 (59 FR 4845 4867). The GKR alignment does not lie within designated critical habitat for the least Bell's vireo.

The least Bell's vireo is a small (length 4.7 inches [12.1 centimeter]; wingspan 7 inches [17.8 centimeter]) mostly plain gray passerine with indistinct wing bars, relatively long tail, and faint broken eye-ring (Sibley 2000). A normal clutch consists of four eggs incubated for two weeks, with young fledging in 10 to 12 days (Franzreb 1987). Parasitism by the brown-headed cowbird and loss of riparian habitat are thought to be the major reasons for the decline of this species.

The least Bell's vireo is a migrant that typically arrives in southern and central California from Baja California, Mexico in early April and departs by late August (Lehman 1982). Historically, the least Bell's vireo nested as far north as Red Bluff in Tehama County south through the San Joaquin Valley and into the riparian corridors of southern California, the Coast Ranges, the southern Sierra Nevada, the Owens

Valley, and portions of the Mojave Desert. This species generally nests in extensive, undisturbed, multi-layered riparian forests, especially those dominated by willow and/or cottonwood trees.

Portions of the GKR alignment occur within the historic breeding range of the least Bell's vireo but outside of critical habitat for this species (59 FR 4845 4867).

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. The least Bell's vireo was not observed during the special-status wildlife surveys.

A single CNDDDB record (Occurrence #138) has been reported within 5 miles (8 kilometers) of the GKR alignment; this 1973 observation of a potentially nesting, singing male Bell's vireo was reported from Arvin, approximately 0.5 mile (0.8 kilometer) west of the GKR alignment; this location previously supported other nesting individuals.

There are no eBird records in the vicinity of the GKR alignment.

Potentially suitable nesting habitat for least Bell's vireo includes extensive multi-layered riparian forests, especially those dominated by willow and/or cottonwood trees; although there are a few locations supporting riparian forests within the GKR alignment, none are undisturbed, extensive, and multi-layered. Potentially suitable riparian habitat capable of supporting breeding conditions for the least Bell's vireo does not occur within the GKR alignment.

Based on the lack of observations and fragmentation and disturbance of riparian habitat within the GKR alignment, the least Bell's vireo does not nest within the GKR alignment.

#### 5.4.2 Federally-listed Invertebrate Species

Two Federally-listed invertebrate species have been reported within the GKR alignment area, and these species also have CDFW State Rankings of S1, S1S2, and S2. State Rankings refer to imperilment status within California state boundaries, as follows: S1—Critically imperiled in California because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state. S2—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 state (CNDDDB 2019).

One of these two invertebrate species, the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) had been reported from Kern County and elsewhere in the southern San Joaquin Valley but is now thought to occur only between Shasta and Madera counties. Previous observations of the valley elderberry longhorn beetle based on females and exit holes are considered unreliable (USFWS 2019b). Therefore, the valley elderberry longhorn beetle does not occur within the Project area and is not discussed further in this report.

##### 5.4.2.1 Conservancy Fairy Shrimp (*Branchinecta conservatio*) – FE, S2

The conservancy fairy shrimp is a Federally Endangered species and has a S2 CDFW State Ranking. Designated critical habitat for this species was established in 2003 (68 FR 46684) but does not overlap the GKR alignment.

The one CNDDDB record (Occurrence #46) within the Project region is thought to have been inaccurately reported in a 1992 thesis (CNDDDB 2019).

The conservancy fairy shrimp is a small crustacean in the Branchinectidae Family. It ranges in size from about ½ to 1 inch (1.3 to 2.5 centimeters) long. Fairy shrimp feed on algae, bacteria, protozoa, rotifers and bits of detritus.

The conservancy fairy shrimp inhabits rather large vernal pools that may contain turbid water during the rainy season and dry by late spring. The conservancy fairy shrimp is active from early November to early April (USFWS 2005). There are currently eight locations known to support the conservancy fairy shrimp according to the USFWS; none of these locations occur within Kern or Los Angeles counties. The GKR alignment is outside of the known range of the conservancy fairy shrimp.

**Presence in the Project Area:** No conservancy fairy shrimp were observed within the GKR alignment at the time of the special-status wildlife surveys as there are no vernal pools within the alignment.

The one CNDDDB record (Occurrence #46) within the Project region is thought to have been inaccurately reported in a 1992 thesis. This observation was reported 8 miles (12.9 kilometers) west of the GKR alignment near the intersection of Lockwood Valley Road and Frazier Mountain Road (CNDDDB 2019).

Potentially suitable vernal pool habitat for the conservancy fairy shrimp does not occur in the vicinity of the GKR alignment and the alignment is outside of the known range of this species. The conservancy fairy shrimp does not occur within the GKR alignment.

### 5.4.3 California-listed Species

#### 5.4.3.1 Bald Eagle (*Haliaeetus leucocephalus*) - CE, FP, USFS S

The bald eagle is a California Endangered and CDFW Fully Protected species.

The bald eagle has a heavy body, large head, and stout hooked bill. Adult bald eagles have white heads and tails with dark brown bodies and wings. Their legs and bills are bright yellow. Immature birds have mostly dark heads and tails; their brown wings and bodies are mottled with white in varying amounts (Cornell 2019). The female bald eagle lays 1 to 3 eggs that hatch after approximately 34 to 36 days of incubation. Nestlings fledge after approximately 56 to 98 days (Cornell 2019).

Bald eagles occur along ocean shores, lake margins, and rivers for both nesting and wintering (CDFW 2019b). The bald eagle has a large breeding range of 3,316,618 square miles (8,590,000 square kilometers), including much of Alaska, Canada, and many parts of the United States. Bald eagles construct a stick nest in large, old-growth mostly evergreen trees with open branches, especially ponderosa pine; they also nest on cliff faces. Nests tend to be located within one mile (1.6 kilometer) of water.

The GKR alignment is outside of the breeding range of the bald eagle; there are no nesting records within or near the GKR alignment.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No bald eagles or their nests were observed at the time of the special-status wildlife surveys.

A 2001 CNDDDB record (Occurrence #257) overlaps the GKR alignment near the California aqueduct, where a bald eagle was observed on the north side of Edmonston Pumping Plant Road east of Interstate 5; this record included wintering observations of an adult bald eagle perched on a dead tree snag; it was noted over a period of three months between 1995 and 2001 (CNDDDB 2019). Another individual was observed further east in February 2000 (Occurrence #258) within the Project alignment between Edmonson Pumping Plant Road and the California aqueduct.

There are numerous eBird observations of the bald eagle, including within Kern River canyon, Caliente Creek, Brite Lake, near the California aqueduct, near Grapevine Creek east of Grapevine, at the Tejon Ranch headquarters, Castac Lake, and Quail Lake to the east of the Gorman Substation (eBird 2019). No records of nesting bald eagles within the GKR alignment are reported.

Potentially suitable foraging habitat for the bald eagle encompasses areas within the GKR alignment near water, especially with nearby trees or snags, such as in the Kern River canyon, near the California aqueduct where it crosses the alignment, and at Castac Lake. Unsuitable foraging habitat within the GKR alignment includes upland habitats that are not contiguous with streams, lakes, rivers, and other bodies of water and all developed areas, except on a very occasional basis.

The bald eagle is likely to forage within the GKR alignment on an occasional basis in areas near water but does not nest within the alignment; there are no nesting records for this species in the Project area. Suitable wintering habitat within the GKR alignment is present between the California aqueduct and Grapevine Canyon. Potentially suitable wintering habitat may be present in the Kern River canyon, at Castac Lake, and at Quail Lake, which is east of the Gorman Substation.

#### 5.4.3.2 Swainson's Hawk (*Buteo swainsoni*) – CT

The Swainson's hawk is a California Threatened species and is a summer resident of California.

The Swainson's hawk has broad wings and a short tail (length 18.9 to 22 inches [48 to 56 centimeters], wingspan 51 inches [129.5 centimeters]). Swainson's hawks have two color morphologies (light morph and dark morph). Light morph Swainson's hawks have a white-colored belly and chin, with a dark or reddish-brown chest and brown or gray upperparts. They have distinctive underwings with white wing linings that contrast strongly with blackish flight feathers. Dark morph individuals are similar to light morph individuals, except dark morphs have a dark brown belly and chin. Breeding generally occurs from late March to late August, with peak activity from late May through July. Females lay one to five eggs which hatch in 34 to 35 days (CDFW 2019b). Nestlings fledge after 17 to 22 days (Cornell 2019).

Swainson's hawks forage in grasslands with scattered trees, riparian areas, savannas, and agricultural or ranch lands with groves or lines of trees adjacent to suitable foraging areas such as grasslands or alfalfa or grain fields that support rodent populations (CDFW 2019b). Nests are generally located in solitary trees or in a small grove of trees along a stream or field.

The Swainson's hawk winters in Argentina and migrates to Mexico and the United States west of the Mississippi River and Canada to breed. In the Central Valley of California, most breeding records have been reported between Butte and Merced counties; nest trees include valley oak, Fremont cottonwood, and willow, among others in the northern Central Valley (CDFW 2016).

The GKR alignment occurs within the foraging range of the Swainson's hawk between the Kern River drainage and the Grapevine (<https://data.ca.gov/dataset/swainsons-hawk-range-cwhr-b121-ds1447/resource/833e7fcc-602f-45ac-a50b-b6c638b8b07c>).

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No Swainson's hawks or their nests were observed within the GKR alignment at the time of the special-status wildlife surveys.

No CNDDDB occurrences have been reported within the GKR alignment (CNDDDB 2019). The nearest CNDDDB record is a 1935 nesting observation (Occurrence #2528) recorded at "Bakersfield" approximately 11 miles (17.7 kilometers) to the west.

There are numerous eBird records for the Swainson's hawk within the Project area, including by the Kern River 1 mile (1.6 kilometers) west of the GKR alignment, in agricultural fields north and south of California Highway 58, at Brite Lake, at the Stallion Springs Golf Course, near the California aqueduct, at Grapevine, in Grapevine Canyon, at Fort Tejon State Historic Park, near Lebec, Gorman, near marshes 1.8 miles (2.9 kilometers) east of the Gorman Substation, and near the east end of Gorman Post Road. A 2016 nesting observation reported in eBird was reported more than 6 miles (9.6 kilometers) west of the GKR alignment, 4.5 miles (7.2 kilometers) west of Arvin. An August 2019 observation stated "observed over 200 Swainson's hawks in several smaller groups of around 50 soaring over the fields on both sides of the highway north/northeast of Grapevine exit. Mostly light morphs with several dark; some appeared to be catching insects and eating on the wing. Each group eventually kettles and moved on to the south toward Tejon Pass" (eBird 2019).

The Swainson's hawk is likely to forage within the GKR alignment on an occasional basis during spring and summer months; it is unlikely to nest within the GKR alignment, based on the lack of nesting records within 5 miles (8 kilometers) of the alignment.

#### 5.4.3.3 Nelson's Antelope Ground Squirrel (*Ammospermophilus nelsoni*) – CT

The Nelson's antelope ground squirrel is a California Threatened species.

The Nelson's antelope ground squirrel ranges from 9 to 10 inches (22 to 24 centimeters) in length with yellowish, brown, or tan coloration on the upper head, neck, and body and a white lateral stripe on each side of the torso. The Nelson's antelope ground squirrel feeds primarily on insects, green vegetation, seeds, and fungi. Mating generally occurs from February into May, with a peak in April (CDFW 2019b).

The Nelson's antelope ground squirrel is a permanent resident of the San Joaquin Valley and surrounding foothills and valleys from 200 to 1,200 feet (61 to 366 meters) amsl, where it occupies grasslands, open shrublands, and alkali sink vegetation where there are widely scattered shrubs, forbs, and grasses in areas with gullies and washes (CDFW 2019b). The Nelson's antelope ground squirrel is endemic to the

floor of the southern San Joaquin Valley and the Cuyama and Panoche valleys and the Carrizo and Elkhorn Plains of eastern San Luis Obispo County.

Populations now exist primarily in marginal habitats of low foothills and mountains on the western edge of the San Joaquin Valley; significant populations occur only in western Kern County at Elk Hills and on portions of the Carrizo and Elkhorn plains. In the northern part of the range, low density populations occur in the Panoche and Kettleman hills (Koprowski 2017).

Portions of the GKR alignment in the San Joaquin Valley occur within the historic breeding range of the Nelson's antelope ground squirrel.

**Presence in the Survey Area.** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. The Nelson's antelope ground squirrel was not observed during the special-status wildlife surveys.

Two 1903 CNDDDB records (Occurrence # 74 and #258) were reported 0.24 miles (0.39 kilometers) northwest of the alignment at Rose Station along the California aqueduct about 1.5 miles (2.4 kilometers) southeast of the intersection between Interstate 5 and the California aqueduct, just north of Grapevine. A 1911 record (Occurrence #257) was generally reported approximately 5 miles (8 kilometers) west of the GKR alignment and was mapped about 8 miles (12.9 kilometers) northeast of Bakersfield in the vicinity of the Kern River in Hart Memorial Park (CNDDDB 2019). All other CNDDDB records occur more than 5 miles (8 kilometers) west and north of the GKR alignment.

The Nelson's antelope ground squirrel currently occurs primarily in marginal habitats of low foothills and mountains on the western edge of the San Joaquin Valley outside of the Project area; significant populations occur only in western Kern County at Elk Hills and on portions of the Carrizo and Elkhorn plains. Potentially suitable habitat along the Project alignment occurs in uncultivated grasslands and low shrublands between the California aqueduct east of Wheeler Ridge south to Grapevine at "Rose Station", where two 1903 CNDDDB records were reported over 100 years ago (Figure 9); these observations are "presumed extant" by CNDDDB (2019). However, there are no current records for the Nelson's antelope ground squirrel that overlap or occur within 5 miles (8 kilometers) of the GKR alignment. The Nelson's antelope ground squirrel is unlikely to occur within the GKR alignment in uncultivated grasslands and low shrublands between the California aqueduct east of Wheeler Ridge south to Grapevine and does not occur elsewhere, based on habitat fragmentation and the lack of current records for this species within 3 miles (4.8 kilometers) of the alignment.

#### 5.4.3.4 Tehachapi Slender Salamander (*Batrachoseps stebbinsi*) – CT

The Tehachapi slender salamander is a California Threatened species.

The Tehachapi slender salamander is three inches (7.3 centimeters) long and dark brown to reddish, with light silver, beige, black, and coppery patches forming a slight dorsal stripe. It is larger than most slender salamanders in the genus *Batrachoseps*, with long legs, broad feet, and toes that are more webbed than related species (Federal Register 2011). Tehachapi slender salamanders lay eggs on land during the rainy period (November to February) under rocks and logs where there is surface moisture and nighttime temperatures are above freezing; there is no aquatic larval stage, so the species is not dependent on water during its life cycle (Hansen 2009).



Tehachapi slender salamanders occur in small, localized populations in moist canyons and on north-facing slopes supporting woodlands and forests near and above streambanks and washes that are seasonally shaded; common overstory tree species include California buckeye, canyon live oak, interior live oak, blue oak, and valley oak. In Caliente Creek, they have also been observed in habitat supporting California juniper, yucca, and other shrubs (Dudek and ICF 2012). Their distribution is limited to a few locations from the intersection of the Sierra Nevada and Tehachapi Mountains in Caliente Creek and isolated locations on the north slopes of the Tehachapi Mountains near Tehachapi Pass, on Tejon Ranch in Tejon Canyon and in and near Bear Trap Canyon, and at Fort Tejon State Historic Park between 3,100 and 4,700 feet (945 and 1,430 meters) amsl.

The portion of the GKR alignment between Grapevine and Gorman lies within the mapped breeding range of the Tehachapi slender salamander (<https://data.ca.gov/dataset/tehachapi-slender-salamander-range-cwhr-a018-ds1147/resource/a8494c37-f556-49cc-a3b9-5e6f8f13098c>).

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No incidental observations of Tehachapi slender salamanders occurred within the GKR alignment at the time of the special-status wildlife surveys. Focused surveys would more adequately identify the species.

A 2009 record (Occurrence #20) was reported adjacent to the GKR alignment approximately 0.02 miles (0.03 kilometers) northeast of the GKR alignment at 2,700 feet (823 meters) amsl along Grapevine Creek under an overstory of Goodding's willow, box elder (*Acer negundo*), and mulefat; this location is approximately 0.7 miles (1 kilometer) north of Fort Tejon State Historic Park. A 1989 CNDDDB record (Occurrence #9) was reported within 0.1 mile (0.16 kilometer) east of the GKR alignment at Fort Tejon State Historic Park under blue oak and California buckeye trees at 3,350 feet (1,052 meters) amsl; it had been reported in the same location in 1973 and 1979. A 1990 record (Occurrence #19) was reported 0.5 miles (0.8 kilometers) southeast of the GKR alignment and west of Occurrence #9 in Johnson Canyon under blue oak and California buckeye trees at 3,450 feet (1,052 meters) amsl. There are additional observations in the Tehachapi Mountains further east along Tejon Creek as well as elsewhere more than five miles (8 kilometers) from the alignment (CNDDDB 2019).

Suitable habitat for the Tehachapi slender salamander within the GKR alignment includes moist canyons supporting woodlands and forests on north-facing slopes and near streambanks that are seasonally shaded and often located near canyon bottoms and streams between 3,100 and 4,700 feet (945 and 1,430 meters) amsl; known suitable habitat occurs along Grapevine Creek and in Johnson Canyon within Fort Tejon State Historic Park in California Buckeye Woodland, Blue Oak Woodland, and Black Willow Thickets in the Tehachapi Mountains (Figure 10). Although there are other locations within the GKR alignment that support oak woodland and riparian vegetation, there are no other locations with known observations of Tehachapi slender salamander and most other locations become seasonally dry in late summer and fall compared with the Grapevine and Johnson Canyon area. Unsuitable habitat for the Tehachapi slender salamander within the GKR alignment includes all shrublands and non-native grasslands, south-facing slopes, the area between the Kern River Canyon and Grapevine, all locations below 3,100 feet (945 meters) amsl, inundated marshes, croplands, and developed areas.

The Tehachapi slender salamander is likely to occur within the GKR alignment in one location - between Grapevine Creek and Fort Tejon State Historic Park in moist shaded woodlands and canyon bottoms

above 3,100 feet (945 meters) amsl. The Tehachapi slender salamander does not occur within other portions of the GKR alignment.

#### 5.4.3.5 Kern Canyon Slender Salamander (*Batrachoseps simatus*) – CT, USFS S

The Kern Canyon slender salamander is a California Threatened species and USFW Sensitive species.

The Kern Canyon slender salamander is dark brown with reddish to bronze-colored spots, 2 inches (5 centimeters) in length, with relative short legs, a narrow head, and a long tail; they have four toes on their hind feet. Kern Canyon slender salamanders lay eggs on land during the rainy period (November to February) under rocks and logs where there is surface moisture and nighttime temperatures are above freezing; there is no aquatic larval stage, so the species is not dependent of water during its life cycle (Zeiner et al. 1988, Calherps 2019).

Kern Canyon slender salamanders are endemic to the lower Kern River Canyon from Stork Creek at 1,476 feet (450 meters) to Erskine Creek (a tributary to the Kern River) at 3,937 feet (1,200 meters) amsl. They occur under rocks and logs or in moist litter in narrow to open canyons shaded with Fremont cottonwood, California sycamore, and species of willows as well as on north-facing slopes supporting woodlands dominated by California buckeye, interior live oak, canyon live oak, and gray pine, among others; they have also been observed near seeps and on talus in chaparral vegetation (USFWS 1987, Calherps 2019, AmphibiaWeb 2019). The GKR alignment lies outside the breeding range of the Kern Canyon slender salamander.

**Presence in the Project Area:** Surveys for Kern Canyon slender salamanders within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No incidental observations of Kern Canyon slender salamanders occurred within the GKR alignment during the special-status wildlife surveys.

No CNDDDB records occur within the GKR alignment. The nearest CNDDDB record (Occurrence #1) was reported more than 3 miles (4.8 kilometers) up-river to the northeast of the GKR alignment and the Kern River 1 Hydroelectric Substation at the confluence of Stark Creek and the Kern River at 1,515 feet (462 meters) amsl (CNDDDB 2019).

The GKR alignment occurs outside of the known range for this species. The Kern River 1 Hydroelectric Substation occurs at 960 feet (293 meters) amsl, below the minimum elevation for the closest observation of this species, and suitable moist woodland and riparian habitat on north-facing slopes is absent where the alignment overlaps the Kern River.

The Kern Canyon slender salamander does not occur within the GKR alignment.

#### 5.4.3.6 Townsend's Big-eared Bat (*Corynorhinus townsendii*) - CCT, CSC, USFS S

The Townsend's big-eared bat is a California Candidate Threatened (CCT) species, a CDFW Species of Special Concern, and a USFS Sensitive species.

Townsend's big-eared bat is a medium-sized bat with very long ears and a face that is marked by two large glandular lumps on either side of its nose (length of 1.5 inches [38 millimeters]). Their fur is pale gray or brown above and buff-colored on the underside. Maternity colonies form between March and

June, with pups born between May and July. Only one pup is born per female. Pups will begin to fly at about 3 weeks old (Arroyo-Cabrales 2008, CDFW 2019b).

The Townsend's big-eared bat occurs throughout California in all but subalpine and alpine habitats. During the winter, Townsend's big-eared bats primarily roost in mines or caves, whereas in the summer the species will roost in a wide variety of locations, including limestone caves, lava tubes, and human-made structures; in all cases, they tend to occupy spacious, cavern-like structures. Townsend's big-eared bats forage over a variety of habitats, almost always near caves or other roosting areas. They can be found in cultivated valleys, shrublands, woodlands, and forests in California (Gruver and Keinath 2006).

Portions of the GKR alignment occur within the breeding range of the Townsend's big-eared bat.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No Townsend's big-eared bats or their roosts were observed during the special-status wildlife surveys.

A 1945 CNDDDB record (Occurrence #31) was reported in an area broadly overlapping the GKR alignment near Lebec on the west side of Interstate 5, near the intersection of Lebec Road and Ridge Route Drive; annotations indicate a single specimen was collected from an old icehouse at the back corner of the Lebec Hotel; the Lebec Hotel was closed in 1968 and demolished in 1971. A 1938 record (Occurrence #311) was reported 4.5 miles (7.2 kilometers) west of the alignment at "Frazier Mountain Park" (CNDDDB 2019).

Although there is potentially suitable habitat for the Townsend's big-eared bat associated with rock outcroppings, canyon walls, and on cliff faces in Kern Canyon, there are no records for this species within 5 miles (8 kilometers) of the GKR alignment. There is also mountainous habitat in the Tehachapi Mountains but there are no records within the GKR alignment, with the exception of those from Lebec and Frazier Mountain. Mine shafts present potentially suitable roosting habitat for many bat species including the Townsends's Big-eared bat. There is one mine shaft located 0.5 miles (0.8 kilometers) south of the GKR alignment on a slope above Comanche Creek on Tejon Ranch, but there are no Townsend's big-eared bat observations in the area. The Kelso mine in the Tehachapi Mountains occurs 4.9 miles (7.9 kilometers) northeast of the Gorman Substation in the Tehachapi Mountains; there are no CNDDDB records for bats from this location. Unsuitable roosting habitat within the GKR alignment includes lowland grassland and agricultural areas, sandy areas, and relatively flat open terrain lacking rock outcrops, mines, man-made structures, and other potential roost sites that lack a water source, as well as all developed areas.

The Townsend's big-eared bat is likely to occur within the alignment while foraging or during dispersal but is unlikely to roost within the GKR alignment based upon the absence of suitable roosting sites or observations in the past 74 years.

#### 5.4.3.7 Southern Rubber Boa (*Charina umbratica*) – CT, USFS S

The southern rubber boa is a California Threatened species and USFS Sensitive species.

The southern rubber boa is a stout boa that can reach 22 inches in length (56 centimeters) with the head and tail resembling each other; the head contains large asymmetrical scales. The smooth shiny scales

are olive to pale yellow-brown on top with yellowish to cream undersides and the skin is often wrinkled. The southern rubber boa feeds on small mammals, birds, and lizards and breeds from April to June, bearing 2 to 8 live young in late summer or early autumn.

The southern rubber boa often inhabits oak woodlands and conifer forests between 5,000 to 8,200 feet (1,524 to 2,500 meters) amsl. It occurs amongst rocks and under logs and other debris, tends to occupy areas with moist soils, and hibernates below the frost line (Ellis 1987, CalHerps 2019). This species is known primarily from the San Bernardino and San Jacinto mountains, but a population occurs in the Tehachapi Mountains and near Mt. Pinos; the taxonomy of the Tehachapi Mountains/Mt. Pinos is unresolved, and some taxonomists argue that it should be lumped with the northern rubber boa, which is not sensitive (Ellis 1987, Stewart et al. 2005, CalHerps 2019).

**Presence in the Project Area:** Surveys for special-status wildlife surveys within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No incidental observations of southern rubber boa occurred during the special-status wildlife surveys.

The nearest CNDDDB records to the GKR alignment were reported more than 8 miles (kilometers) west of the alignment near Lake of the Woods.

The southern rubber boa occurs above 5,000 feet (1,524 meters) amsl in oak and conifer woodlands and forests, as well as in some shrublands. The highest elevation on the GKR alignment is 4,531 feet (1,381 meters) amsl.

There is no suitable habitat within the GKR alignment to support the southern rubber boa; this species does not occur within the GKR alignment because the alignment lies below the minimum elevation for the southern rubber boa (5,000 feet [1,524 meters] amsl) and occurs outside the range of this species.

#### 5.4.3.8 Foothill Yellow-legged Frog (*Rana boylei*) – CT, CSC, USFS S

The foothill yellow-legged frog is a California Candidate Threatened species, CDFW Species of Special Concern, and USFS Sensitive species.

The foothill yellow-legged frog is an olive to brownish-red colored frog with yellow on the undersides of the rear legs; it ranges between 1.5 and 3.2 inches (3.8 and 8.1 centimeters) in length and has grainy skin, a slender waist, long legs, and webbing on the hind feet. It lays eggs between April and early July in streams and rivers that are often wide and sun-lit, often near water bars or pool edges. They overwinter in smaller perennial tributaries and streams or in riparian habitat, often with woody debris or marsh vegetation (Zeiner et al. 1988, CDFW 2018).

Historically, foothill yellow-legged frogs ranged from southwestern Oregon south to Baja California west of the Cascade and Sierra Nevada axis, up to 6,365 feet (1,940 meters) amsl, but has disappeared throughout much of its range, especially in the southern part of California (CDFW 2018, CalHerps 2019).

**Presence in the Project Area:** Surveys for special-status wildlife surveys within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. The foothill yellow-legged frog was not observed during the special-status wildlife surveys.

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A 1940 CNDDDB record (Occurrence #2039) was reported at the Kern River more than 3 miles (4.8 kilometers) upstream and east of the Kern River 1 Hydroelectric Substation but has been extirpated from this location. A 1959 record (Occurrence #2051) was reported from Tehachapi Creek approximately 4.7 miles (7.5 kilometers) east of the GKR alignment but has been extirpated from this location. An 1875 record (Occurrence #2054) was reported approximately 4.5 miles (7.2 kilometers) west of the GKR alignment in Tejon Creek but has been extirpated from this location.

Potentially suitable habitat for the foothill yellow-legged frog within the Project alignment includes streams and rivers that are often wide and sun-lit, with overwintering sites in smaller perennial tributaries and streams or in riparian habitat with woody debris or marsh vegetation. Within the GKR alignment, such potential suitable habitat is limited to the Kern River canyon, based on a 79-year-old record more than 3 miles (4.8 kilometers) northeast of the GKR alignment. All other locations are more than 4 miles from the GKR alignment. Based upon the absence of observations of the foothill yellow-legged frog within 3 miles (4.8 kilometers) of the GKR alignment during the past 79 years, this species does not occur within the alignment.

## 6 SUMMARY OF FINDINGS

One Federally Endangered and California Threatened wildlife species, the San Joaquin kit fox, and an additional California Threatened species, the tricolored blackbird, were observed within the GKR alignment during the sensitive wildlife surveys. The Federal Endangered and California Endangered Bakersfield cactus and the Federal Endangered Kern mallow were observed within the GKR alignment.

No other Federally-listed or California-listed species were observed within the GKR alignment during the surveys.

Four unlisted sensitive plant species were observed along the alignment, including one herbaceous perennial and three annuals (Table 2, Figure 4). A total of 18 special-status wildlife species, including one amphibian species, 15 bird species, and two mammal species.

The total mapped vegetation within the GKR alignment encompasses 645.8 acres (261.3 hectares), including 175.6 acres (71.1 hectares) of woodland vegetation, 122.5 acres (49.6 hectares) of shrubland vegetation, and 347.7 acres (140.7 hectares) of herbaceous vegetation (Table 1). Within anticipated work areas, a total of 130.7 acres (52.9 hectares) of native vegetation was mapped.

Fourteen sensitive alliances were documented during surveys, along with ten sensitive associations in non-sensitive alliances, covering 128.3 acres (51.9 hectares). A total of 56.4 acres (22.8 hectares) of sensitive natural communities were mapped within anticipated work areas; see Section 6.1 below.

### 6.1 Natural Communities

A total of 1,279.9 acres (518 hectares) were mapped along the GKR alignment. Of that total area, 316.3 acres (128 hectares) of native vegetation and 329.5 acres (133.3 hectares) of non-native vegetation (Tamarisk Thickets, Wild Oats and Annual Brome Grasslands, Red Brome or Mediterranean Grass Grasslands, Cheatgrass – Medusahead Grassland, and Perennial Pepper Weed Patches) were mapped, along with 407.2 acres (164.8 hectares) of active agriculture, 33.4 acres (13.5 hectares) of disturbed habitat, 181.1 acres (73.3 hectares) of developed areas such as towers and roads, and 1.5 acres (0.6 hectares) of lawns and gardens (ornamental/landscaped). The remaining acres were mapped as 7.7 acres (3.1 hectares) of open water, which includes ponds, lakes, river, stream, and ditches. Vegetation acreage includes 175.6 acres (71.1 hectares) of woodland and forest vegetation, 122.5 acres (49.6 hectares) of shrubland vegetation, and 347.7 acres (140.7 hectares) of herbaceous vegetation (Table 1, Figure 3).

Of the 316.3 acres (128 hectares) of mapped native vegetation within the GKR alignment, fourteen sensitive alliances (with 18 sensitive associations) and an additional 5 sensitive associations within non-sensitive alliances were documented during surveys, covering 128.3 acres (51.9 hectares); see Figure 4. These include:

Sensitive woodland vegetation (7 sensitive natural community alliances, with 11 sensitive associations plus one sensitive association within a non-sensitive alliance) covering 48.3 acres [19.5 hectares], with 24.4 acres [9.9 hectares] within anticipated work areas: Fremont Cottonwood Forest and Woodland, Shining Willow Groves, California Buckeye Groves, California Sycamore – Coast Live Oak Riparian Woodlands, Valley Oak Woodland and Forest, Valley Oak Riparian Forest and Woodland, and



Goodding's Willow - Red Willow Riparian Woodland and Forest plus the *Quercus douglasii* - *Quercus lobata* Association within Blue Oak Woodland.

Sensitive shrubland vegetation (two sensitive natural community alliances, both with one sensitive association plus 4 sensitive associations within non-sensitive alliances) covering 76.5 acres [31 hectares], with 30.8 acres [12.5 hectares] within anticipated work areas: Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub and Scalebroom Scrub plus one sensitive association within Narrowleaf Goldenbush – Bladderpod Scrub, two sensitive associations within Arroyo Willow Thickets, and one sensitive association within California Joint-fir – Longleaf Joint-fir Scrub.

Sensitive herbaceous vegetation (five sensitive natural community alliances with a total of 6 sensitive associations) covering 3.5 acres [1.4 hectares], with 1.1 acres [0.4 hectares] within anticipated work areas: Yerba Mansa - Nuttall's Sunflower - Nevada Goldenrod Alkaline Wet Meadows, American Bulrush Marsh, Ashy Ryegrass – Creeping Rye Grass Turfs, Common Monkey Flower Seeps, and Needle Grass - Melic Grass Grassland.

A total of 56.4 acres (22.8 hectares) of sensitive natural communities were mapped within anticipated work areas.

## 6.2 Sensitive Plants

The Federal Endangered and California Endangered Bakersfield cactus and the Federal Endangered Kern mallow were observed within the GKR alignment.

A total of four unlisted sensitive plant species were observed along the alignment, including one herbaceous perennial and three annuals.

Observed sensitive plants included:

- Two species that are Federal Endangered: Bakersfield cactus and Kern mallow.
- One species that is California Endangered: Bakersfield cactus.
- Two species with a CNPS CRPR of 1B.1: Bakersfield cactus and Piute Mountains navarretia.
- Two observed sensitive plant species with a CRPR of 1B.2: Kern mallow and calico monkeyflower.
- One observed sensitive plant species that is designated as Sensitive by the USFS: Piute Mountains navarretia.

During the sensitive species surveys, four sensitive plant species and 19 sensitive plant observations were documented within the GKR alignment. Eight sensitive plant observations were recorded within anticipated work areas. Sensitive plant species within anticipated work areas include Bakersfield cactus and Piute Mountains navarretia (Figure 4). Calico monkeyflower and Kern mallow were not observed within anticipated work areas, however one observation of the Kern mallow occurred along both sides of an access road to the towers; this access road is the only point of access to numerous towers on the GKR alignment.

The two sensitive plants with a CRPR of 4.2 and 4.2 (San Joaquin bluecurls – CRPR 4.2 and adobe yampah - CRPR 4.3) also occurred in anticipated work areas but are not regionally rare and are not discussed further.

### 6.3 Sensitive Wildlife

One Federally Endangered and California Threatened wildlife species, the San Joaquin kit fox, and an additional California Threatened species, the tricolored blackbird, were observed within the GKR alignment during the special-status wildlife surveys.

Nearly all the observed and potentially occurring avian species are protected by the federal MBTA. The MBTA makes it unlawful, except as formally permitted, to “take” (pursue, hunt, take, capture, or kill) migratory birds except under permits for special situations such as imminent threat to human safety or scientific research. The law currently applies to more than 1,000 species, which includes those that are migratory as well as non-migratory. In addition to the CDFW Fully Protected status, the golden eagle is protected under the Bald and Golden Eagle Protection Act (U.S. Congress 1940; [BGEPA]). Sections 3503, 3503.5, 3505, 3513, 3800, 3801.6 of the California Fish and Game Code protect all birds, birds of prey, and all nongame birds, as well as their eggs and nests, for species that are not already listed as Fully Protected and that occur naturally within the state. Section 3503.5 specifically states that it is unlawful to take any raptors (e.g., hawks, owls, eagles, and falcons), or their nests and eggs.

A total of 18 wildlife observations representing 12 sensitive wildlife species were documented along the GKR alignment, including one amphibian species, two mammal species, and 9 bird species (Table 3, Figure 4).

Observed sensitive wildlife species included:

- One species that is Federally Endangered and California Threatened: San Joaquin kit fox.
- One species that is California Threatened: tricolored blackbird.
- Nine species that are listed as CSC: Western spadefoot, burrowing owl, Vaux’s swift, northern harrier, loggerhead shrike, Oregon vesper sparrow, purple martin, yellow warbler, and American badger.
- One species that is California FP: golden eagle.

Two sensitive wildlife observations representing two species were recorded within anticipated work areas: the American badger and purple martin.

Several additional wildlife species that are on the CDFW Watch List and/or the USFWS Bird of Special Concern List were also observed and are reported here for thoroughness. These include:

- Six species are on the CDFW WL: Cooper’s hawk, golden eagle, California horned lark, prairie falcon, double-crested cormorant, and the white-faced ibis.
- Eight species are listed as a USFWS Bird of Special Concern (BCC): tricolored blackbird, golden eagle, burrowing owl, Costa’s hummingbird, prairie falcon, loggerhead shrike, Oregon vesper sparrow, and yellow warbler.

Of these, Costa’s hummingbird and prairie falcon were observed passing over anticipated work areas.

A total of 60 sensitive wildlife species have been reported in CNDDDB as having a potential to occur within 10 miles (16 kilometers) of the proposed Project work areas, including 6 amphibian species, 12 reptile species, 21 bird species, 9 mammal species, and 12 invertebrate species (Table 3). There is no suitable breeding habitat for the California condor, least Bell’s vireo, bald eagle, Swainson’s hawk, conservancy

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fairy shrimp, southern rubber boa, or the foothill yellow-legged frog within the GKR alignment. CNDDDB records for the blunt-nosed leopard lizard, Tipton kangaroo rat, least Bell's vireo, conservancy fairy shrimp, Nelson's antelope ground squirrel, foothill yellow-legged frog, and Townsend's big-eared bat within 5 miles (8.1 kilometers) of the GKR alignment are 20 years or older.

Critical habitat designated for the California condor overlaps the GKR alignment in the Tehachapi Mountains between Wheeler Ridge and Digier Road north of Fort Tejon State Historic Park.

## 7 CONCLUSIONS

A total of 18 wildlife observations representing 12 sensitive wildlife species were documented within the GKR alignment during the sensitive wildlife surveys, including the Federally Endangered and California Threatened San Joaquin kit fox and the California Threatened tricolored blackbird. A total of 19 sensitive plant observations representing four sensitive plant species were observed within the GKR alignment during the sensitive plant surveys, including the Federal Endangered and California Endangered Bakersfield cactus and the Federal Endangered Kern mallow.

No other Federally-listed and/or California-listed species were observed within the GKR alignment during the sensitive species surveys.

The total mapped vegetation within the GKR alignment encompassed 645.8 acres (261.3 hectares), including 175.6 acres (71.1 hectares) of woodland vegetation, 122.5 acres (49.6 hectares) of shrubland vegetation, and 347.7 acres (140.7 hectares) of herbaceous vegetation (Table 1). Within anticipated work areas, a total of 130.7 acres (52.9 hectares) of native vegetation was mapped.

Fourteen sensitive alliances (with 18 sensitive associations) and an additional 5 sensitive associations within non-sensitive alliances) were documented during surveys, covering 128.3 acres (51.9 hectares). A total of 56.4 acres (22.8 hectares) of sensitive natural communities were mapped within anticipated work areas.

Four non-listed sensitive plant species were observed along the alignment, including one herbaceous perennial and three annuals. Observed sensitive plants included:

- Two species that are Federal Endangered: Bakersfield cactus and Kern mallow.
- One species that is California Endangered: Bakersfield cactus.
- Two species with a CNPS CRPR of 1B.1: Bakersfield cactus and Piute Mountains navarretia.
- Two observed sensitive plant species with a CRPR of 1B.2: Kern mallow and calico monkeyflower.
- One observed sensitive plant species that is designated as Sensitive by the USFS: Piute Mountains navarretia.

During the sensitive species surveys eight sensitive plant observations were recorded within anticipated work areas, one observation of Bakersfield cactus and seven observations of Piute Mountains navarretia.

One Federally Endangered and California Threatened species, the San Joaquin kit fox, and an additional California Threatened species, the tricolored blackbird, were observed within the GKR alignment during the sensitive wildlife surveys.

A total of 18 wildlife observations representing 12 sensitive wildlife species were documented along the GKR alignment, including one amphibian species, two mammal species, and 9 bird species. An additional 42 sensitive wildlife species have been reported in CNDDB as having a potential to occur within the proposed Project work areas, including 5 amphibian species, 12 reptile species, 6 bird species, 7 mammal species, and 12 invertebrate species (Table 3).

Observed sensitive wildlife species included:

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- One species that is Federally Endangered and California Threatened: San Joaquin kit fox.
- One species that is California Threatened: tricolored blackbird.
- Nine species that are listed as CSC: Western spadefoot, burrowing owl, Vaux's swift, northern harrier, loggerhead shrike, Oregon vesper sparrow, purple martin, yellow warbler, and the American badger.
- One species that is California FP: golden eagle

Two sensitive wildlife observations representing two species were recorded within anticipated work areas, one each of the American badger and purple martin.

Critical habitat for the California condor overlaps the GKR alignment in the Tehachapi Mountains between Wheeler Ridge and Digier Road north of Fort Tejon State Historic Park, although the potential for roosting or nesting is unlikely within the alignment.

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# TABLES



**Table 1. Vegetation Community Acres and Sensitivity Rankings**  
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**Gorman - Kern River 66 kV Subtransmission Line Project**  
**Southern California Edison**

Vegetation Alliance	Vegetation Association	Total Acres Mapped On GKR Alignment	Anticipated Temporary Impacts in Proposed Project Work Areas (acres) <sup>1</sup>	Anticipated Permanent Impacts in Proposed Project Work Areas (acres) <sup>1</sup>	Total Impacts (acres)	California State Rarity Ranking for Association
<b>Woodland and Forest Vegetation</b>						
Fremont cottonwood forest and woodland	<i>Populus fremontii</i> – <i>Salix lasiolepis</i> Association	2.6	1.9	0.0	1.9	<b>S3.2</b>
	<i>Populus fremontii</i> – <i>Salix</i> ( <i>laevigata</i> , <i>lasiolepis</i> , <i>lucida</i> subsp. <i>lasiandra</i> ) Association	1.2	0.9	0.0	0.9	<b>S3.2</b>
Shining willow groves	<i>Salix lucida</i> subsp. <i>lasiandra</i> Association	2.5	1.2	0.0	1.2	<b>S3.2</b>
	<i>Salix lucida</i> subsp. <i>lasiandra</i> / <i>Urtica urens</i> – <i>Urtica dioica</i> Association	0.1	0.1	0.0	0.1	<b>S3.2</b>
California buckeye groves	<i>Aesculus californica</i> Association	7.4	2.2	0.1	2.3	<b>S3</b>
California sycamore – coast live oak riparian woodlands	<i>Platanus racemosa</i> – <i>Salix laevigata</i> / <i>Salix lasiolepis</i> – <i>Baccharis salicifolia</i> Association	4.4	0.5	0.0	0.5	<b>S3</b>
Valley oak riparian forest and woodland	<i>Quercus lobata</i> – <i>Salix lasiolepis</i> Association	0.2	0.2	0.0	0.2	<b>S3</b>
	<i>Quercus lobata</i> – <i>Salix laevigata</i> Provisional Association	0.4	0.1	0.0	0.1	<b>S3</b>
Valley oak woodland and forest	<i>Quercus lobata</i> / grass Association	14.8	8.7	0.2	8.9	<b>S3</b>
Goodding's willow – red willow riparian woodland and forest	<i>Salix laevigata</i> Association	3.9	1.4	0.0	1.4	<b>S3</b>
	<i>Salix laevigata</i> / <i>Salix lasiolepis</i> Association	0.9	0.8	0.0	0.8	<b>S3</b>
Blue oak woodland and forest	<i>Quercus douglasii</i> – <i>Aesculus californica</i> / grass Association	6.0	2.1	0.0	2.1	S4
	<i>Quercus douglasii</i> – <i>Pinus sabiniana</i> Association	40.1	13.2	0.1	13.3	S4
	<i>Quercus douglasii</i> - <i>Quercus lobata</i> Association	10.0	6.0	0.1	6.1	<b>S4, Yes</b>
	<i>Quercus douglasii</i> / <i>Bromus</i> spp. – <i>Daucus pusillus</i> Association	56.3	14.1	0.2	14.3	S4
	<i>Quercus douglasii</i> / <i>Eriogonum fasciculatum</i> / herbaceous Association	2.5	1.2	0.0	1.2	S4
Mixed oak forest and woodland	Mixed oak – <i>Aesculus californica</i> / grass Association	20.0	5.4	0.2	5.6	S4
Canyon live oak forest and woodland	<i>Quercus chrysolepis</i> Association	2.3	0.6	0.0	0.6	S5
<b>Total Acres Woodland and Forest Vegetation</b>		<b>175.6</b>	<b>60.6</b>	<b>0.9</b>	<b>61.5</b>	
<b>Shrubland Vegetation</b>						
Scalebroom scrub	<i>Lepidospartum squamatum</i> / ephemeral annuals Association	24.5	13.5	0.2	13.7	<b>S3</b>
Acton's and Virgin River brittle brush – net-veined goldeneye scrub	<i>Encelia actonii</i> Association	16.4	4.5	0.0	4.5	<b>S3</b>
California joint-fir - longleaf joint-fir scrub	<i>Ephedra californica</i> / annual – perennial herb Association	4.0	2.1	0.1	2.2	<b>S3</b>
Arroyo willow thickets	<i>Salix lasiolepis</i> – <i>Salix lucida</i> Association	0.6	0.5	0.0	0.5	<b>S3?</b>
	<i>Salix lasiolepis</i> Association	0.5	0.5	0.0	0.5	<b>S4, Yes</b>
Narrowleaf goldenbush – bladderpod scrub	<i>Cleome isomeris</i> Association	30.5	9.2	0.2	9.4	<b>S4, Yes</b>
Cheesebush - sweetbush scrub	<i>Ambrosia salsola</i> Association	10.7	3.9	0.1	4.0	S4
Tucker oak chaparral	<i>Quercus john-tuckeri</i> Association	0.7	0.6	0.0	0.6	S4
Wedge-leaf ceanothus chaparral, buck brush chaparral	<i>Ceanothus cuneatus</i> Association	1.6	0.9	0.0	0.9	S4



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Mulefat thickets	<i>Baccharis salicifolia</i> Association	0.9	0.4	0.0	0.4	S5
California buckwheat scrub	<i>Eriogonum fasciculatum</i> Association	6.2	3.3	0.0	3.3	S5
Rubber rabbitbrush scrub	<i>Ericameria nauseosa</i> Association	22.4	16.1	0.3	16.4	S5
Tamarisk thickets	<i>Tamarix</i> spp. Association	3.5	1.3	0.0	1.3	None
<b>Total Acres Shrubland Vegetation</b>		<b>122.5</b>	<b>56.8</b>	<b>0.9</b>	<b>57.7</b>	
<b>Herbaceous Vegetation</b>						
Yerba mansa - Nuttall's sunflower - Nevada goldenrod alkaline wet meadows	<i>Anemopsis californica</i> Provisional Association	0.1	0.1	0.00	0.1	<b>S2</b>
	<i>Solidago (confinis, spectabilis)</i> Provisional Association	0.02	0.0	0.00	0.02	<b>S2</b>
American bulrush marsh	<i>Schoenoplectus americanus</i> / <i>Lepidium latifolium</i> Association	0.6	0.0	0.0	0.0	<b>S3.2</b>
Ashy ryegrass – creeping ryegrass turfs	<i>Leymus triticoides</i> – <i>Bromus</i> spp. – <i>Avena</i> spp. Association	2.6	0.9	0.0	0.9	<b>S3</b>
Common monkey flower seeps	<i>Mimulus guttatus</i> Association	0.01	0.01	0.00	0.01	<b>S3?</b>
Needle grass - melic grass grassland	<i>Nassella cernua</i> Association	0.2	0.1	0.0	0.1	<b>S3S4, Yes</b>
Baltic and Mexican rush marshes	<i>Juncus arcticus</i> var. <i>balticus</i> Association	15.8	8.7	0.1	8.8	S4
Saltgrass flats	<i>Distichlis spicata</i> – <i>Hordeum murinum</i> Association	2.4	0.9	0.0	0.9	S4
Wild oats and annual brome grasslands	<i>Bromus diandrus</i> - Mixed herbs Association	231.9	125.2	2.1	127.3	None
	<i>Bromus hordeaceus</i> – <i>Amsinckia menziesii</i> – <i>Hordeum murinum</i> Association	16.6	8.2	0.1	8.3	None
Red brome or Mediterranean grass grasslands	<i>Bromus rubens</i> – Mixed herbs Association	66.0	30.7	0.4	31.1	None
Cheatgrass – medusahead grassland	<i>Bromus tectorum</i> – <i>Bromus diandrus</i> Association	2.8	1.8	0.1	1.9	None
Perennial pepper weed – prickly lettuce patches	<i>Lepidium latifolium</i> Association	8.6	5.4	0.1	5.5	None
<b>Total Acres Herbaceous Vegetation</b>		<b>347.7</b>	<b>181.9</b>	<b>2.9</b>	<b>184.8</b>	
<b>Total acres Native Vegetation</b>		<b>316.3</b>	<b>126.9</b>	<b>1.9</b>	<b>128.8</b>	
<b>Total acres Non-native Vegetation</b>		<b>329.5</b>	<b>172.5</b>	<b>2.8</b>	<b>175.3</b>	
<b>Total Acres All Vegetation</b>		<b>645.8</b>	<b>299.4</b>	<b>4.7</b>	<b>304.1</b>	

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<b>Cultivated</b>						
Active Agriculture		407.2	127.1	1.3	128.4	None
Ornamental/Landscaped (lawns, windrows, landscaping)		1.5	0.4	0.0	0.4	None
<b>Open Water</b>						
Open Water (ponds, lakes, streams, rivers)		7.7	0.8	0.0	0.8	None
<b>Disturbed Habitat (Ruderal Vegetation)</b>						
Disturbed (cleared area supporting ruderal vegetation, if any)		33.4	17.0	0.2	17.2	None
Sparsely Vegetated Rock Outcrop		0.1	0.0	0.0	0.0	None
Sparsely Vegetated Streambed		3.2	1.3	0.0	1.3	None
<b>Developed</b>						
Developed (towers, roads, etc)		181.1	71.6	1.7	73.3	None
<b>Total Acres All Areas</b>		<b>1,279.9</b>	<b>517.7</b>	<b>7.9</b>	<b>525.6</b>	

**Alliance Rarity Rankings (CDFW 2018, Sawyer et. al 2009):**

- S1: Fewer than 6 viable occurrences statewide and/or up to 518 hectares
- S2: 6-20 viable occurrences statewide and/or 518-2,590 hectares
- S3: 21-100 viable occurrences statewide and/or 2,590-12,950 hectares
- S4: Greater than 100 viable occurrences statewide, and or more than 12,950 hectares
- S5: Demonstrably secure because of its statewide abundance

**Table 2. Present or CNDDDB Recorded Sensitive Plant Species for GKR Alignment**  
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Scientific Name	Common Name	Regulatory Status (Federal/ California/ CNPS ranking)	Habitat and Distribution
<b>Observed Sensitive Plants on the Gorman - Kern River 66 kV Alignment</b>			
<i>Eremalche parryi</i> subsp. <i>kernensis</i>	Kern mallow	FE / - / 1B.2	3 occurrences with 150 individuals. Observations located in rocky areas supporting Acton's goldenbush and grassland as well as near eroded hillsides with grassland and scrub vegetation. Recent CCH records are located south of Arvin and less than 1 mile from the alignment. Suitable habitat for Kern mallow occurs within the GKR alignment in two locations, one on the eastern side of the Kern River drainage along an access road to a tower and the other near Comanche Point. In addition to these two locations, Kern mallow has a low potential to occur within the GKR alignment in grasslands and arid shrublands on the southeastern slopes of the Kern River drainage northeast of Edison and a low to moderate potential to occur in undeveloped (including agricultural lands) locations near Comanche Point, but is unlikely to occur in other locations within the GKR alignment.
<i>Mimulus pictus</i>	calico monkeyflower	- / - / 1B.2	7 occurrences encompassing 15 individuals. Occurs in granitic soils and disturbed sites in broadleaf upland forest and cismontane woodland at elevations ranging from 100 to 1,430 meters amsl. There is an historic CNDDDB occurrence about 4 miles from the Project alignment located southeast of the Tejon Hills. Suitable habitat for the calico monkeyflower includes granitic soils between 440 and 4,100 feet (135 and 1,250 meters) amsl; it was observed within the GKR alignment along a four-mile (6.4-kilometers) portion of the GKR alignment northwest of Stallion Springs in Blue Oak Woodland. Calico monkeyflower is expected anywhere within the Tehachapi Mountains where granitic soils and Blue Oak Woodlands occur together, which includes locations observed during surveys and also additional locations where it is likely to occur but was not observed. Calico monkeyflower is not expected (i.e., unlikely) to occur within the GKR alignment on the lower slopes of Grapevine Mountain, based on a single CNDDDB record; granitic soils in this area are limited to a few locations, including where the 2013 CNDDDB record was reported. Calico monkeyflower could also occur in the Sierra Nevada foothills between Highway 58 and the northern terminus of the alignment at the Kern River Hydro Generation Facility; granitic soils in this area occur in the Sierra Nevada between the Kern River Hydrogeneration Facility and where the Kern River canyon narrows, a distance of approximately 1.5 miles (2.4 kilometers). Calico monkeyflower does not occur in grasslands dominated by dense stands of non-native species of Bromus, nor does it occur on agricultural lands or in wetlands or riparian areas.

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<i>Navarretia setiloba</i>	Piute Mountains navarretia	- /- / 1B.1	7 occurrences encompassing 313 individuals. Occurs in clayey or gravelly loam soil in cismontane woodland, pinyon juniper woodland, and valley and foothill grassland at elevations ranging from 285 to 2,100 meters amsl. Recent and historic CNDDDB occurrences and CCH records are present along the Project alignment. Suitable habitat for the Piute Mountains navarretia occurs open grassy areas within the GKR alignment in mountain foothills. It is expected in three locations including the Sierra Nevada foothills, margins of the Tehachapi Mountains (e.g., west of Bear Valley Springs and east of Comanche Point), and the San Emigdio Mountains at Grapevine Pass. In addition, Piute Mountains navarretia has a potential to occur near Comanche Point and Digier Road and Fort Tejon State Historic Park in clay or gravelly loam substrates; it would be likely to occur at these additional locations even though no observations were made during surveys. It is unlikely to occur elsewhere within the GKR alignment, and does not occur in sandy substrates or washes, rocky substrates, agricultural areas, ruderal areas, inundated substrates, or developed areas
<i>Opuntia basilaris</i> var. <i>treleasei</i>	Bakersfield cactus	FE/CE/ 1B.1	2 occurrences encompassing 301 individuals. These observations were concentrated on the alignment along Caliente Creek Wash just east-northeast of Mountain View Road near its intersection with Towerline Road, northeast of the town of Lamont in California Joint-fir - Longleaf Joint-fir Scrub and Scalebroom Scrub. Occurs in sandy or gravelly substrate in chenopod scrub, cismontane woodland, and valley and foothill grassland at elevations ranging from 120 to 1,450 meters amsl. Recent CNDDDB occurrences are present near the Project alignment on the west end of Tejon Hills. Suitable habitat for the Bakersfield cactus within the GKR alignment only in one location, along Caliente Creek Wash just east-northeast of Mountain View Road near its intersection with Towerline Road, northeast of the town of Lamont. Bakersfield cactus is absent elsewhere within the GKR alignment, because this species is a large, spreading, conspicuous cactus that can readily be observed and identified at any time of the year during botanical surveys.

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<i>Perideridia pringlei</i>	adobe yampah	- / - / 4.3	3 occurrences encompassing 50 individuals. Occurs in serpentinite soils in chaparral, cismontane woodland, coastal scrub, and pinyon juniper woodland at elevations ranging from 300 to 1,800 meters amsl. There are no CNDDDB occurrences available, however there are CCH records between 3 and 6 miles from the GKR alignment.
<i>Trichostema ovatum</i>	San Joaquin bluecurls	- / - / 4.2	18 occurrences encompassing 7,570 individuals. Occurs in disturbed sites in chenopod scrub and valley and foothill grassland at elevations above 300 meters amsl. There are no CNDDDB occurrences available, however there are CCH records 30 meters from the GKR alignment

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<b>Not Observed</b>			
<i>Allium howellii</i> var. <i>clokeyi</i>	Mt. Pinos onion	- / - / 1B.3	Mt. Pinos onion occurs in clay soils in Great Basin scrub, meadows and seeps, and pinyon and juniper woodland at elevations ranging from 4,260 to 6,070 feet (1,300 to 1,850 meters) amsl. The Mt. Pinos onion occurs mainly in the western transverse mountains in Ventura, Santa Barbara, and Kern Counties. Potentially suitable habitat for the Mt. Pinos onion includes areas with clay soils above 4,260 feet (1,300 meters) amsl in the Tehachapi Valley; however, no suitable habitat for Mt. Pinos onion remains within the GKR alignment. Unsuitable habitat includes sandy to rocky soils in grasslands, woodlands, forests, and riparian communities below 4,260 feet (1,300 meters) amsl and all croplands and developed areas. The Mt. Pinos onion does not occur within the GKR alignment, based on the absence of recent records within the alignment as well as the absence of suitable habitat.
<i>Astragalus hornii</i> var. <i>hornii</i>	Horn's milk-vetch	- / - / 1B.1	Horn's milk-vetch occupies salty flats and lake shores and margins of playas, meadows and seeps at elevation ranging from 200 to 1,000 feet (60 to 305 meters) amsl. Horn's milk-vetch occurs does not occur within the GKR alignment because there are no alkaline conditions favored by this species, such as near playas, seeps, and lake shores. Although there are ephemerally wet places near the Kern River, these locations are not alkaline. Horn's milk-vetch does not occur in upland grassland, and woodland areas above 1,000 feet (305 meters) amsl.
<i>California macrophylla</i>	round-leaved filaree	- / - / 1B.2	Round-leaved filaree occurs in clayey soils in cismontane woodlands and grasslands at elevations from 50 to 4,000 feet (15 to 1,200 meters) amsl throughout much of California. Potentially suitable habitat for round-leaved filaree within the GKR alignment includes clayey soils in cismontane woodlands and grasslands below 4,000 feet (1,200 meters) amsl in the Tehachapi Mountains between Stallion Springs and Arvin, although there are no records that overlap the alignment in this area. Unsuitable habitat includes sandy to rocky areas of riparian, chaparral, woodland and wetland communities and all croplands and developed areas. Round-leaved filaree is unlikely to occur within the GKR alignment and only between Stallion Springs and Arvin where there are grasslands underlain by clay soils below 4,000 feet (1,200 meters) amsl. It does not occur in riparian, chaparral, and wetland communities; in sandy to rocky soils; or in croplands and developed areas.



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<i>Calochortus palmeri</i> var. <i>palmeri</i>	Palmer's mariposa-lily	- / - / 1B.2	Palmer's mariposa lily is found in moist areas in chaparral, lower montane coniferous forest, and meadows and seeps at elevations from 2,330 to 7,200 feet (710 to 2,200 meters) amsl. A 2014 record (Occurrence #115) was reported approximately 0.75 miles (1.2 kilometers) southeast of the GKR alignment at Comanche Point in the Tehachapi Mountains. A 1964 record (Occurrence #55) was reported approximately 350 feet (106 meters) southwest of the GKR alignment in clay soils in oak woodland in the Castac Valley. A 2013 record (Occurrence #90) was reported 0.65 miles (1.0 kilometers) southwest of the GKR alignment in non-native grassland in the Hungry Valley State Vehicular Recreational Area. Palmer's mariposa lily is unlikely to occur in the Tehachapi Mountains and in isolated locations near Castac Lake and near the Gorman Substation. Although there is a recent record for it at Comanche Point, it occurs there in the hills above the alignment and not in the lowlands where the alignment crosses Comanche Point. Unsuitable habitat includes upland vegetation in dry soils, dense riparian vegetation and marshes, and all croplands and developed areas. Palmer's mariposa lily is unlikely to occur within the southern portions of the GKR alignment near Castac Lake. It does not occur within the alignment in other locations.
<i>Calochortus striatus</i>	alkali mariposa-lily	- / - / 1B.2	Alkali mariposa lily is found on alkali soils and wet locations in chaparral, chenopod scrub, Mojavean desert scrub, and in meadows and seeps at elevations from 2,600 to 4,600 feet (800 to 1,400 meters) amsl. A 2017 record (Occurrence #126) was reported 0.3 miles (0.5 kilometers) east of the GKR alignment in the Tehachapi Mountains near Comanche Point within Amargo Springs. Potentially suitable habitat for alkali mariposa lily within the GKR alignment includes moist alkaline meadows and springs; there are no moist springs within the GKR alignment but there are moist habitats with alkaline soils, although none are located near Comanche Point. Alkali mariposa lily does not occur within the GKR alignment based on the absence of moist alkaline springs and meadows in the vicinity of known locations.

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<i>Caulanthus californicus</i>	California jewelflower	FE / CE / 1B.1	<p>California jewelflower occurs in flats, slopes, and non-alkaline grasslands in chenopod scrub, valley and foothill grassland, and pinyon and juniper woodland at elevations from 230 to 3,300 feet (70 to 1,000 meters) amsl. A 1933 record (Occurrence #30) was reported 2 miles (3.2 kilometers) west of the GKR alignment along the Kern River. A 1940 record (Occurrence #20) was reported 4.75 miles (7.6 kilometers) north of the Kern River Hydro Generation Facility. A 1925 record (Occurrence #39) was reported approximately 1.2 miles (2 kilometers) east of the GKR alignment near Caliente Creek. A 1935 record (Occurrence #43) was reported 0.4 miles (0.6 kilometers) west of the GKR alignment south of Arvin. A 2015 CCH observation was reported approximately 3.2 miles (5.1 kilometers) southwest of the GKR alignment on a south-facing slope above Comanche Creek (CCH 2019).</p> <p>Potentially suitable habitat within the GKR alignment for California jewelflower includes sandy substrates in Caliente Creek and in washes and on slopes in the Tehachapi Mountains east of Arvin below 3,300 feet (1,000 meters) amsl, although there are no observations of this conspicuous plant in these areas in the past 80 years within 3 miles (5 kilometers) of the GKR alignment. Unsuitable habitat includes heavy soil textures, dense vegetation, elevations above 3,300 feet (1,000 meters), and all croplands and developed areas. The California jewelflower is unlikely to occur within the GKR alignment. This conspicuous plant has not been observed near the alignment in the past 80 years, populations near Caliente Creek and Arvin have been extirpated, and populations within the Tehachapi Mountains above Comanche Creek are more than 3.2 miles (5.1 kilometers) from the alignment</p>
<i>Caulanthus lemmonii</i>	Lemmon's jewelflower	- / - / 1B.2	<p>Lemmon's jewelflower occurs in grasslands and shrublands at elevations from 260 to 5,200 feet (80 to 1,580 meters) amsl. A 1991 record (Occurrence #6) is generally located 4.6 miles (7.4 kilometers) northwest of the GKR alignment near Wheeler Ridge. A 2015 record (Occurrence #63) was reported 6.8 miles (10.9 kilometers) west of the GKR alignment within Frazier Park at 5,200 feet (1,580 meters) amsl. The Lemmon's jewelflower does not occur within the alignment, because the range of this species occurs more than 4 miles (6.4 kilometers) from the GKR alignment.</p>

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<i>Clarkia tembloriensis</i> subsp. <i>calientensis</i>	Vasek's clarkia	- / - / 1B.1	Vasek's clarkia occurs in rocky areas in valley and foothill grassland habitats around 1,640 feet (500 meters) amsl. Vasek's clarkia is a highly restricted endemic, known only from Caliente Hills in the southern Sierra Nevada foothills in Kern County. There are only three CNDDDB records of Vasek's clarkia in Kern County, all within 5 miles (8 kilometers) of the GKR alignment located near Caliente Creek east of the GKR alignment. A 1986 record (Occurrence #3) reports 200 plants southwest of Bena, 2.9 miles (4.6 kilometers) from the GKR alignment. Another 1986 record (Occurrence #2) reports 100 plants in a steep rock ravine approximately 3.7 miles (5.9 kilometers) from the GKR alignment. A 1982 record (Occurrence #1) reports less than 100 plants located approximately 5.7 miles (9.1 kilometers) from the GKR alignment. This species does not occur within the GKR alignment, based on observations occurring more than 2.5 miles (4 kilometers) from the GKR alignment and the lack of recent records within the Project area.
<i>Delphinium purpusii</i>	rose-flowered larkspur	- / - / 1B.3	Occurs in rocky and carbonate soils in chaparral, pinyon juniper woodland, and cismontane woodland at elevations ranging from 300 to 1,340 meters amsl. The closest CNDDDB records for this species to the GKR alignment all occur in the Kern River drainage, with a 1996 record (Occurrence #4) on granitic sand on a north-facing slope immediately north of the Kern Canyon Hydro Generating Facility. Potentially suitable habitat for the rose-flowered larkspur occurs in one location: at the northern end of the GKR alignment on the slopes surrounding the Kern Canyon Hydro Generating Facility and on nearby slopes to the south for 0.25 mile (0.4 kilometer) before the alignment exits the Kern Canyon drainage. Suitable habitat for this species is lacking elsewhere within the alignment. Rose-flowered larkspur is unlikely to occur within the GKR alignment and only immediately adjacent to the Kern Canyon Hydro Generating Facility and on nearby slopes within 0.25 mile (0.4 kilometer) of this facility. This species does not occur elsewhere within the alignment, based on lack of suitable habitat and absence of recent CNDDDB or other documented observations.

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<i>Eriastrum tracyi</i>	Tracy's eriastrum	- / CR / 3.2	Tracy's eriastrum is a California endemic that occurs on rocky (shale) or clay soils in chaparral and woodlands at elevations between 1,310 and 5,840 feet (400 and 1,780 meters) amsl. Potentially suitable habitat for Tracy's eriastrum includes open wooded areas in rocky, gravelly clay soils near Castac Lake below 5,840 feet (1,780 meters) amsl. Unsuitable habitat includes sandy well-drained soils in grasslands, wetlands and marshes, riparian vegetation, and all croplands and developed areas outside of the Castac Lake area. Tracy's eriastrum is unlikely to occur within the GKR alignment near Castac Lake in open wooded areas in gravelly clay soils. It does not occur in other areas within the alignment.
<i>Eriogonum callistum</i>	Tehachapi buckwheat	- / - / 1B.1	Tehachapi buckwheat is endemic to limestone outcrops in chaparral at elevations ranging from 4,600 to 4,900 feet (1,400 to 1,500 meters) amsl. There are only six CNDDDB locations in Kern County in the Tehachapi Mountains all are east of the GKR alignment along ridges above 4,500 feet (1,370 meters), above the elevation of the alignment in this area. The GKR alignment outside of the elevational range for this species (i.e., alignment maximum elevation is 4,531 feet), and there are no limestone outcrops within the alignment. The lack of suitable habitat and observations of this species suggests that this species does not occur within the alignment.
<i>Eriophyllum lanatum</i> var. <i>hallii</i>	Fort Tejon woolly sunflower	- / - / 1B.1	Fort Tejon woolly sunflower occurs in rocky soils in foothill woodland and chaparral at elevations ranging from 3,500 to 4,670 feet (1,065 to 1,500 meters) amsl. A 1905 record (Occurrence #2) was reported 0.6 miles (1.0 kilometers) west of the GKR alignment in Johnson Canyon in Fort Tejon State Historic Park. A 1995 record (Occurrence #3) was reported 0.8 miles (1.3 kilometers) west of the GKR alignment in mixed oak woodland. A 2004 record (Occurrence #5) was reported 4.1 miles (6.6 kilometers) east of the alignment in the Tehachapi Mountains northeast of Castac Lake. Another 2004 record (Occurrence #6) was reported 5.2 miles (8.4 kilometers) east of the GKR alignment. Fort Tejon woolly sunflower is unlikely to occur within the GKR alignment open rocky areas in chaparral and open oak woodland vegetation between Fort Tejon State Historic Park and Grapevine above 3,500 feet (1,065 meters) amsl, based on the presence of potential habitat in these areas and does not occur elsewhere within the alignment.

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<i>Eschscholzia lemmonii</i> subsp. <i>kernensis</i>	Tejon poppy	- / - / 1B.1	Tejon poppy occurs in heavy clay soils in grasslands at elevations ranging from 650 to 3,300 feet (200 to 1,000 meters) amsl. Potentially suitable habitat for Tejon poppy within the GKR alignment occurs on clay, loam, and occasionally sandy substrates on steep grassy slopes near Comanche Point and Fort Tejon Historic State Park below 3,300 feet (1,005 meters) amsl. Unsuitable habitat includes all areas above 3,300 feet (1,005 meters) amsl, all portions of the alignment between the Kern River and Arvin and between El Paso Creek and Grapevine, as well as areas with rocky or gravelly substrates, riparian and wetland vegetation, active agricultural lands, and developed areas. The Tejon poppy is likely to occur within the GKR alignment in grassland vegetation in and near Fort Tejon State Historic Park and Comanche Point. This species is relatively prevalent in these areas, especially in close proximity to the GKR alignment and could easily be overlooked due to the high densities of California poppy ( <i>Eschscholzia californica</i> ) in the same area. It does not occur elsewhere within the alignment based on the lack of observations of this conspicuous species.

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<i>Fritillaria striata</i>	striped adobe-lily	- / CT / 1B.1	<p>Striped adobe lily occurs in heavy clay soil found in grassland and foothill woodlands below 3,280 feet (1,000 meters) amsl. Striped adobe lily is endemic to Tulare and Kern Counties in the foothills of the Sierra Nevada and the Tehachapi Mountains. A 1963 CNDDDB record (Occurrence #10) was reported 1.3 miles (2.1 kilometers) northwest of the GKR alignment near the mouth of the Kern River on the north side of the river. There are four records near Pyramid Hill north of the Kern River; the alignment remains on the south side of the Kern River drainage south of the Kern River Hydro Generating Facility. There are also records southwest of Stallion Springs at lower elevations in the Tehachapi Mountains, including a 1987 record (Occurrence #18) 2 miles (3.2 kilometers) south of the alignment at 2,400 feet (731 meters) amsl. Potential suitable habitat for striped adobe lily within the GKR alignment includes heavy clay adobe soils in grasslands and open woodlands below 3,280 feet (1,000 meters) amsl in the Tehachapi Mountains between Stallion Springs and Arvin. However, there are no records of striped adobe lilies that overlap the alignment in this area (or any other area); the alignment occurs at higher elevations to the north of known colonies of striped adobe lilies in the Tehachapi Mountains. The observations near the Kern River drainage are all north of the Kern River and the alignment is located south of the Kern River once it leaves the Kern River Hydro Generating Facility. The striped adobe lily does not occur within the GKR alignment, based on the lack of suitable habitat, including appropriate soils and elevations in proximity to known occurrences.</p>



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<i>Heterotheca shevockii</i>	Shevock's golden-aster	- / - / 1B.3	<p>Shevock's golden-aster occurs in sandy substrates in grassland habitats and adjacent open shrublands and woodlands at elevations ranging from 755 to 2,953 feet (230 to 900 meters) amsl. It is endemic to the lower Kern River Canyon in Kern County. There are two CNDDDB records within or near the GKR alignment. A 1996 record (Occurrence #7) was reported immediately north of the Kern Canyon Hydro Generating Facility. An additional 1996 record (Occurrence #8) was reported slightly up-river within the Kern River canyon. Potentially suitable habitat for the Shevock's golden-aster within the GKR alignment occurs in one location: immediately north of the Kern Canyon Hydro Generating Facility in sandy substrates at the base of the rocky cliffs nearby. Suitable habitat for this species is lacking elsewhere within the alignment. Shevock's golden-aster is unlikely to occur within the GKR alignment and only immediately adjacent to the Kern Canyon Hydro Generating Facility. This species is recognizable year-round, but may not have been documented in steep terrain within the Kern River canyon that overlaps the alignment. This species does not occur elsewhere within the alignment, based on lack of suitable habitat and absence of survey and CNDDDB or other documented observations.</p>
<i>Lasthenia glabrata</i> subsp. <i>coulteri</i>	Coulter's goldfields	- / - / 1B.1	<p>Coulter's goldfields occur in saline places, vernal pools, margins of coastal marshes and swamps, and playas at elevation less than 3,280 feet (less than 1,000 meters) amsl. There are eight occurrences in Kern County, only one, a 1905 record (Occurrence #2), occurs within 10 miles (16 kilometers) of the GKR alignment and it is considered 'possibly extirpated'; it was reported approximately 2 miles (3.2 kilometers) north of the alignment in Tehachapi. There is no suitable habitat for Coulter's goldfields because of the lack of coastal salt marshes, playas and vernal pools within the GKR alignment. Coulter's goldfields does not occur within the GKR alignment.</p>

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<i>Layia heterotricha</i>	pale-yellow layia	- / - / 1B.1	Pale-yellow layia occurs in alkaline or clay soils in cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill woodland habitats at elevation ranging from 650 to 5,900 feet (200 to 1,800 meters) amsl in coastal areas, the southern coast mountains, the southern Sierra Nevada, and the Tehachapi Mountains. Potential scrub habitat for pale-yellow layia occurs in the Tehachapi Valley within the GKR alignment, but these areas are not suitable due to the lack of alkaline soils under current conditions. All other areas within the alignment provide unsuitable habitat for this species, based on the lack of records and observations. This species does not occur within the GKR alignment in shrublands in the Tehachapi Valley; there are no alkaline soils within the alignment in this area. Pale-yellow layia does not occur elsewhere within the alignment.
<i>Layia leucopappa</i>	Comanche Point layia	- / - / 1B.1	Comanche Point layia occurs on vernal wet, whitish clay soils on flats in chenopod scrub and grassland vegetation at elevations ranging from 330 to 1,050 feet (100-350 meters) amsl. A 1935 record (Occurrence #5) overlaps the GKR alignment in the community of Edison. A 1935 (Occurrence #12) was reported 0.5 miles (0.8 kilometers) west of the GKR alignment in Arvin. A 2016 record (Occurrence #1) was reported as multiple colonies approximately 0.25 miles (0.4 kilometers) east of the alignment and west of Comanche Point. There are four 2013 records (Occurrences #3, #9, #10, #11) approximately 2 miles (3.8 kilometers) east of the GKR alignment and south of Comanche Point. A 1988 record (Occurrence #8) was reported 2 miles (3.8 kilometers) east of the alignment to the north of Comanche Creek. Comanche Point layia is unlikely to occur within the GKR alignment and only at Comanche Point in vernal wet, whitish clay soils in chenopod scrub and grassland vegetation below 1,000 feet (300 meters). The GKR alignment intersects the extreme margin of suitable habitat for the Comanche Point layia. Most of the alignment occurs in lowland areas below the hills at Comanche Point and the Comanche Point layia is expected only in the hills above the Project area. Comanche Point layia does not occur in areas above 1,100 feet (335 meters) amsl, nor does it occur in woodland, chaparral, and riparian communities with rocky or sandy soils or in agricultural and developed areas.

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<i>Layia munzii</i>	Munz's tidy-tips	- / - / 1B.2	Munz's tidy-tips occurs in chenopod scrub and valley and grassland habitat at elevation ranging from 160 to 2,620 feet (50 to 800 meters) amsl in the California Coast Ranges, Central Valley, and Tehachapi mountains from San Joaquin County south to Santa Barbara and Kern Counties. A 1935 CNDDDB record (Occurrence #30) was reported approximately 1.5 miles (2.4 kilometers) west of the GKR alignment around Arvin. Suitable habitat for Munz's tidy-tips includes alkaline white clay soils in chenopod scrub and valley and grassland habitat below 2,620 feet (800 meters) amsl, which are absent from the GKR alignment. The only observation of this species within the Project area is over 80 years old. Munz's tidy-tips does not occur within the GKR alignment due to lack of suitable habitat and recent records within the GKR alignment.
<i>Leptosiphon serrulatus</i>	Madera leptosiphon	- / - / 1B.2	Madera leptosiphon occurs in open cismontane woodland and lower montane coniferous forest vegetation at elevations ranging from 980 to 4,260 feet (300 and 1,300 meters) amsl. A 1935 CNDDDB record (Occurrence #22) was reported approximately 3.5 miles (5.6 kilometers) south of the GKR alignment in the Tehachapi Mountains. There are no other records near the alignment. Madera leptosiphon does not occur within the GKR alignment. There are no records within 3 miles (4.8 kilometers) of the GKR alignment.
<i>Monardella linoides</i> subsp. <i>oblonga</i>	Tehachapi monardella	- / - / 1B.3	Tehachapi monardella occurs in granitic soils on dry slopes in lower montane coniferous forest, upper montane coniferous forest, and pinyon and juniper woodlands from 2,952 to 8,500 feet (900 to 2,600 meters amsl). A 1889 record (Occurrence #35) was reported as generally overlapping the alignment in Tehachapi, but was reported amongst ponderosa pines, which occur at higher elevations in this area. A 1927 record (Occurrence #67) was reported approximately 1.5 miles (3.4 kilometers) west of the GKR alignment; the location was listed as "Chandler's." Suitable habitat for Tehachapi monardella, including open dry slopes of coniferous forest, is absent from the GKR alignment. Tehachapi monardella is conspicuous and observable year-round and does not occur within the GKR alignment.

**Table 2. Present or CNDDDB Recorded Sensitive Plant Species for GKR Alignment**  
**TLRR Sensitive Species and Habitat Report**  
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Scientific Name	Common Name	Regulatory Status (Federal/ California/ CNPS ranking)	Habitat and Distribution
<i>Monolopia congdonii</i>	San Joaquin woollythreads	FE / - / 1B.2	<p>San Joaquin woollythreads is found in sandy locations in grasslands and chenopod scrub from 295 to 2,300 feet (90 to 700 meters) amsl in the San Joaquin Valley, and is recorded as far north as San Joaquin County and Santa Barbara and Kern Counties. A 1988 record (Occurrence #103) overlaps the GKR alignment where it is generally mapped at the mouth of Kern Canyon; this occurrence may be extirpated. A 1987 record (Occurrence #19) was reported approximately 0.3 miles (0.4 kilometers) east of the GKR alignment in stabilized dunes at the mouth of Caliente Creek south of California Highway 58. A 1988 record (Occurrence #18) was reported 1.2 miles (1.9 kilometers) east of the GKR alignment in Caliente Creek north of California Highway 58. A 1935 record (Occurrence #102) was reported approximately 0.5 miles (0.8 kilometers) west of the GKR alignment in Arvin. Potential suitable habitat for San Joaquin woollythreads could be present at the mouth of Kern Canyon and in Caliente Creek; however, sandy locations in grasslands and chenopod scrub are absent where the alignment intercepts Kern River canyon. Unsuitable habitat includes woodlands, riparian areas, wetlands and vegetation above 2,300 feet (700 meters) amsl, and all croplands and developed areas.</p> <p>San Joaquin woollythreads is unlikely to occur within the GKR and only could occur where the alignment crosses Caliente Creek. It does not occur in woodlands, riparian areas, wetlands and in vegetation above 2,300 feet (700 meters) within the alignment, and all croplands and developed areas.</p>
<i>Nemacladus secundiflorus</i> var. <i>robbinsii</i>	Robbins' nemacladus	- / - / 1B.2	<p>Robbin's nemacladus occurs on dry gravelly, often slopes in chaparral and valley and foothill grasslands at elevations ranging from 1,150 to 5,580 feet (350 to 1,700 meters) amsl. A 1978 CNDDDB record (Occurrence #2) was reported 2.8 miles (5 kilometers) southwest of the Gorman Substation in Hungry Valley. Potentially suitable dry gravelly grassland and shrubland habitat within the GKR alignment occurs near the Gorman Substation, but the only observation in the area was reported 40 years ago 2.8 miles (5 kilometers) southwest of the alignment. Unsuitable habitat includes all other locations within the alignment. Robbin's nemacladus does not occur within the GKR alignment, based on the lack of recent observations within the Project area and lack of any observations within 2 miles (3.2 kilometers) of the alignment.</p>

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<i>Pseudobahia peirsonii</i>	San Joaquin adobe sunburst	FT /CE / 1B.1	San Joaquin adobe sunburst occurs in heavy clay soils in grasslands and woodlands along the eastern and southern margins of the San Joaquin Valley and adjacent foothills at elevations ranging from 320 to 3,000 feet (100 to 900 meters) amsl. There are two CNDDDB records within 10 miles (16 kilometers) of the GKR alignment. A 2016 record (Occurrence #53) was reported approximately 10 miles (16 kilometers) east of the GKR alignment in the foothills of the Sierra Nevada northeast of Caliente. A 2016 record (Occurrence #52) was reported 3 miles (4.8 kilometers) southeast of the alignment in the western Tehachapi Mountains east of Comanche Point. Potentially suitable habitat within the GKR alignment for San Joaquin adobe sunburst includes heavy clay soils in the western Tehachapi Mountains east of Comanche Point below 3,000 feet (900 meters) amsl. Unsuitable habitat includes heavy soil textures, dense vegetation, elevations above 3,300 feet (1,000 meters), and all croplands and developed areas. There are no observations of the San Joaquin adobe sunburst that overlap the GKR alignment, and this species is unlikely to occur in the western Tehachapi Mountains east of Comanche Point and is absent from all other portions of the alignment.
<i>Stylocline citroleum</i>	oil neststraw	- / - / 1B.1	Oil neststraw occurs in clay often crusted soils and dry drainage edges in chenopod scrub and valley and foothill grassland at elevations ranging from 197 to 984 feet (60 to 300 meters) amsl. One CNDDDB record was reported 2.5 miles (4.0 kilometers) west of the GKR alignment, a 1935 collection (Occurrence #2) described as 2 miles from (east of) Bakersfield, Kern River Canyon Road. However, the exact location of collection is not known and CDFW denotes more fieldwork is needed to verify the record. Except for this 1935 record, this species has never been documented anywhere other than the hills west of Tupman and north of Taft. Oil neststraw does not occur within the GKR alignment because its known range occurs outside of the Project area, suitable habitat is absent, and there are no reliable records documenting this species within the GKR alignment.

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<i>Symphyotrichum defoliatum</i>	San Bernardino aster	- / - / 1B.2	San Bernardino aster is a California endemic that occurs on moist or seasonally flooded soil found in meadows, seeps, marshes, swamps, grasslands and disturbed places in valley and foothill grassland, coastal scrub, cismontane woodland, and lower montane coniferous forest habitats at elevations below 6,725 feet (2,050 meters) amsl. A 1939 CNDDDB record (Occurrence #41) overlaps the GKR alignment near Lebec. Potentially suitable habitat consisting of marshy meadows and grasslands exists in several locations in the Lebec area, although many wetlands have been disturbed and infested with non-native perennial pepperweed ( <i>Lepidium latifolium</i> ). Unsuitable habitat includes dry grasslands, woodland, forests and shrublands, as well as croplands and developed areas. The San Bernardino aster does not occur within the GKR alignment, based on the absence of recent records and the primary range for this species outside of the Project area.

Based on CNDDDB (2019) review of the following quads along the Kern-Tehachapi 115kV alignment: Rio Bravo Ranch, Edison, Arvin, Bear Mountain, Tejon Ranch, Cummings Mountain, Tejon Hills, Pastoria Creek, Grapevine, Frazier Mountain, and Lebec.

Records from California Consortium of Herbaria (CCH) also reviewed

#### **Status Codes**

##### **United States Fish and**

FE Federal Endangered

FT Federal Threatened

##### **California Department of**

CE California Endangered

CT California Threatened

CR California Rare

##### **California Native Plant Society (CNPS)**

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

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

List 3: Plants About Which We Need More Information - A Review List

##### **Extensions to**

##### **List Categories**

- .1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of)
- .2 – Fairly endangered in California (20-80% occurrences threatened)
- .3 – Not very endangered in California (<20% of occurrences threatened or no current threats known)



Table 3. Present or CNDDDB Recorded Sensitive Wildlife Species for KR Alignment  
 TLRR Sensitive Species and Habitat Report  
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 Southern California Edison

Scientific Name	Common Name	Regulatory Status (Federal/ California/ USFS)	Habitat and Distribution
<b>Observed Sensitive Wildlife on Gorman - Kern River 66kV Alignment</b>			
<b>Amphibians</b>			
<i>Spea hammondi</i>	western spadefoot	- / CSC / -	Two adults were observed under a tire at the edge of a stock pond located within 0.01 mile (0.02 kilometer) of the GKR alignment; this pond occurs just south of the alignment near a ridgetop at 3,200 feet (975 meters) amsl within a grassy opening in Blue Oak Woodland. Occurs primarily in grassland habitats in open areas within woodlands, shrublands, and washes and floodplains in sandy or gravelly soils. Vernal pools and seasonal ponds are essential for breeding. The western spadefoot is likely to occur within the alignment where a stock pond is located south of the GKR alignment near a ridgetop at 3,200 feet (975 meters) amsl approximately six miles (9.6 kilometers) northwest of Stallion Springs; it is unlikely to occur within the alignment in valleys and on lower slopes of the Tehachapi Mountains, even where suitable pools and ponds are present between Comanche Point and Grapevine. It is unlikely to occur in other seasonal wetlands in grassy areas, based on the lack of records documenting presence. It does not occur where ponds and seasonal wetlands are absent, in developed areas, in rocky soils, and in dense vegetation.
<b>Birds</b>			
<i>Accipiter cooperii</i>	Cooper's hawk	- / WL / -	Two separate individuals were observed flying within the GKR alignment, one near Castac Lake, the other in the San Joaquin Valley at the base of the Grapevine. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks. Potentially suitable nesting habitat for the Cooper's hawk within the GKR alignment includes stands of mature deciduous trees along canyon bottoms and river floodplains; there is limited riparian habitat in the Kern River canyon and Grapevine Canyon for this species, but there are no known nesting records in these areas. Unsuitable habitat includes all upland habitat, all non-riparian vegetation, croplands, and developed areas. The Cooper's hawk is likely to occur as a transient during migration within the GKR alignment, but it is unlikely to nest within the alignment, based on limited suitable nesting habitat and the lack of nesting records.
<i>Agelaius tricolor</i>	tricolored blackbird	BCC / CT / -	A group of eight individuals was observed in Salt Grass Flats and Baltic and Mexican Rush Marshes along Grapevine Creek in the Castac Valley between Fort Tejon State Historic Park and Lebec, north of Bear Trap Road. A 2011 CNDDDB record (Occurrence #453) was reported in a hardstem bulrush marsh surrounded by willows located in a tributary to Gorman Creek 1.2 miles (1.8 kilometers) east of the Gorman Substation; this record spans several years and includes nesting 1998 and 2011. One undated CNDDDB probable nesting occurrence (Occurrence #454) for this species is present within the GKR alignment at the southern end of Castac Lake. There is also a 1990 nesting colony record (Occurrence #179) located approximately 1.8 miles (2.9 kilometers) west of the alignment, east of Bakersfield. A 2015 record (Occurrence #947) was located 4.2 miles (6.8 kilometers) east of the Gorman Substation on the northwest shore of Quail Lake, where five distinct colonies located in bulrush encompassed over 1,000 tricolored blackbirds and nesting individuals. A nearby colony (Occurrence #399) was also observed in 2015 on the south side of Quail Lake (CNDDDB 2019). Potentially suitable nesting habitat is present within the wetland areas containing cattails, tules, and bulrush within the GKR alignment, including near Castac Lake. In addition, any unlined agricultural or stock ponds supporting emergent aquatic vegetation such as cattails or bulrush within the GKR alignment provides potentially suitable nesting habitat for the tricolored blackbird. The tricolored blackbird is likely to nest within the GKR alignment at Castac Lake and in nearby marsh vegetation.



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TLRR Sensitive Species and Habitat Report  
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Scientific Name	Common Name	Regulatory Status (Federal/ California/ USFS)	Habitat and Distribution
<i>Aquila chrysaetos</i>	golden eagle	BCC / FP, WL / -	One golden eagle and one active nest with one eaglet were observed within the survey area. The eagle and nest were observed in a tower located on an adjacent alignment within 0.1 mile (0.2 kilometer) of the GKR alignment; this tower occurs on a ridgetop at 3,200 feet (975 meters) amsl within open Blue Oak Woodland approximately six miles (9.6 kilometers) northwest of Stallion Springs. A golden eagle was also observed perching on a pole and flying over Annual Brome Grassland within the GKR alignment southeast of Arvin and the California aqueduct at 600 feet (183 meters) amsl, but no other nesting golden eagles were observed. A 2004 record (Occurrence #87) of a golden eagle in a pine “nest tree” was reported approximately 1.8 miles (2.9 kilometers) east of the Gorman Substation (CNDDDB 2019). Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas. The golden eagle is likely to forage within the GKR alignment and is also likely to nest above 3,000 feet (914 meters) amsl in the Tehachapi Mountains northeast of Stallion Springs. The golden eagle is likely to forage within the GKR alignment and is also likely to nest in the known location above 3,000 feet (914 meters) amsl in the Tehachapi Mountains between Stallion Springs and Towerline Road as well as north of Gorman Creek in the Tehachapi Mountains two miles (3.2 kilometers) east of the Gorman Substation. The golden eagle could nest elsewhere within the GKR alignment, especially in trees and on utility structures, but is unlikely to do so, based on existing nesting data.
<i>Athene cunicularia</i>	burrowing owl	BCC / CSC / -	A single burrowing owl and two active burrows were observed within the GKR alignment at the time of the special-status wildlife surveys. The burrows were observed in Annual Brome Grassland within the GKR alignment southeast of Arvin and east of the California aqueduct at 600 feet (183 meters) amsl. There are 14 CNDDDB burrowing owl records within 3 miles (4.8 kilometers) of the alignment. Suitable nesting and foraging habitat for the burrowing owl is generally characterized by gently sloping to flat, open terrain with sparse low-growing vegetation, often in association with burrowing mammals. The burrowing owl is likely to occur within the GKR alignment in suitable habitat in one location - at the base of the western foothills of the Tehachapi Mountains northeast of Comanche Point and southeast of Arvin. The burrowing owl could occur elsewhere within the GKR alignment in suitable habitat but is unlikely to do so, based on existing observation and nesting data. It is unlikely to nest within the GKR alignment in dense woody vegetation, rocky substrates, mountainous areas, riparian woodlands and forests, seasonally inundated soils, areas under active agricultural production, and developed areas.
<i>Calypte costae</i>	Costa's hummingbird	BCC / - / -	A single Costa's hummingbird was observed in an open area in mixed oak woodland within the GKR alignment north of Fort Tejon State Historic Park. Costa's hummingbirds may forage within the GKR alignment, but potentially suitable nesting habitat is restricted to desert washes, desert riparian vegetation, and desert scrub habitats in this area. Unsuitable nesting habitat includes all areas north of Gorman, as well as dense woody vegetation, rocky substrates, mountainous areas, areas under active agricultural production, and developed areas. The Costa's hummingbird is likely to occur on an occasional basis within the GKR alignment. It is unlikely to nest within the GKR alignment.
<i>Chaetura vauxi</i>	Vaux's swift	- / CSC / -	One individual was observed foraging with a mixed flock of swallows on the west side of Castac Lake. No CNDDDB records occur within the GKR alignment. Vaux's swift is a summer resident of California that typically nests in coniferous or mixed hardwood forest and forages in forest openings, especially above streams and in old growth stands, especially in large hollow trees and snags. The Vaux's swift is likely occur as a transient within the GKR alignment while foraging or during migration but does not nest within the alignment, since the GKR alignment occurs south of the breeding range for this species and no suitable nesting habitat is present.

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<i>Circus hudsonius</i>	northern harrier	- / CSC / -	One northern harrier was observed foraging along the GKR alignment west of Castac Lake in Baltic and Mexican Rush Marshes. There are no CNDDDB occurrences of the species near the GKR alignment. Frequents freshwater and coastal salt marshes, as well as grasslands and open scrub habitats. The northern harrier is likely to occur within the GKR alignment for brief periods while hunting. Potentially suitable nesting habitat is present within the grassland and wetland areas present within the GKR alignment in the vicinity of Castac Lake, where the northern harrier is unlikely to nest, based on the lack of nesting records; the lack of nesting records for the northern harrier within the GKR alignment suggests that this species does not nest within the GKR alignment.
<i>Eremophila alpestris actia</i>	California horned lark	- / WL / -	There was one observation within the alignment in an agricultural field north of the California aqueduct at the southern end of the San Joaquin Valley. Inhabits open grassland or herbaceous dominated vegetation areas or within scattered low shrubs. Nests for the California horned lark are generally found on the ground in depressional areas. Suitable habitat for the California horned lark can be found in agricultural fields in the Tehachapi Valley and in the San Joaquin Valley within the GKR alignment. Potentially suitable habitat includes open habitats that are generally devoid of trees or large shrubs. Unsuitable habitat includes coniferous and chaparral habitats, mountainous regions, and developed areas. The California horned lark is likely to occur in agricultural fields in the Tehachapi Valley and in the San Joaquin Valley within the GKR alignment. The California horned lark is unlikely to occur in other agricultural areas within the GKR alignment, and does not occur in mountainous or developed areas.
<i>Falco mexicanus</i>	prairie falcon	BCC / WL / -	Four prairie falcons were observed flying over the GKR alignment during the survey. Two prairie falcons were observed south of the Kern River and northeast of Edison. One was observed southeast of Arvin and west of Bear Valley Springs. Another was observed near Grapevine. Inhabits a wide variety of habitats including perennial grasslands, savannahs, rangeland, some agricultural fields, and desert areas. Prairie falcons require sheltered cliff ledges for cover and will usually nest in scrapes on sheltered cliff ledges that overlook large, open areas. The prairie falcon is likely to occur within the GKR alignment on an occasional basis but is unlikely to nest within the GKR alignment except where tall cliff faces occur within or immediately adjacent to the alignment, such in the Kern River canyon area. It is unlikely to nest elsewhere, but foraging individuals may be observed on occasion.
<i>Lanius ludovicianus</i>	loggerhead shrike	BCC / CSC / -	Two loggerhead shrikes were observed within the GKR alignment during the special-status wildlife surveys. One loggerhead shrike was observed foraging in Blue Oak Woodland above Little Sycamore Canyon in the western Tehachapi Mountains. One loggerhead shrike was observed foraging in a wash supporting Mulefat Thickets just southeast of Grapevine. Loggerhead shrikes are year-round residents that inhabit lowlands and foothills throughout much of California, although the ranges of the species extends across North America, especially the southern half and the high plateaus of the Intermountain West. They occupy open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. The loggerhead shrike is likely to forage within portions of the GKR alignment and could nest within the GKR alignment in shrublands and woodlands that provide suitable nesting sites for this species in Blue Oak Woodland above Little Sycamore Canyon in the western Tehachapi Mountains and in Mulefat Thickets just southeast of Grapevine. Poor-quality habitat for the loggerhead shrike includes urbanized and agricultural areas lacking shrubs, posts, fence lines, or other perches.
<i>Phalacrocorax auritus</i>	double-crested cormorant	- / WL / -	A single double-crested cormorant was observed foraging along the Kern River northeast of Bakersfield, California in the San Joaquin Valley. This species can be found within inland lakes, in fresh, salt or estuarine waters and is a year-long resident (CDFW 2019). Double-crested cormorant nests consist of rocks or reefs with no vegetation, on top of a tree or on the ground; the GKR alignment generally lies outside of the breeding range for this species. Suitable nesting habitat includes large trees near the Kern River and aqueducts. The double-crested cormorant is likely to occur as a transient within the GKR alignment but is unlikely to nest in the alignment.

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<i>Plegadis chihi</i>	white-faced ibis	- / WL / -	A single white-faced ibis was observed within Baltic and Mexican Rush Marshes north of Castac Lake. No nests were observed. It forages in shallow water and occurs in dense tule thickets for nesting. Suitable nesting habitat for the white-faced ibis includes marsh habitats and wet agricultural fields. The white-faced ibis is likely to occur on an occasional basis within the GKR alignment and could nest in discrete and dense marsh vegetation in the San Joaquin Valley and between Lebec and the Gorman Substation.
<i>Pooecetes gramineus affinis</i>	Oregon vesper sparrow	BCC / CSC / -	An adult Oregon vesper sparrow was observed foraging in a mosaic of Annual Brome Grasslands and scattered bladderpod shrubs southeast of Grapevine at the base of the Tehachapi Mountains. Oregon vesper sparrows are a winter resident of California between September and April, primarily in lowlands south of San Francisco Bay and west of the Sierra Nevada, where it may be found in grasslands, meadows, pastures, and roadsides feeding on seeds and invertebrates. There are no recorded CNDDDB occurrences for this species within the GKR alignment (CNDDDB 2019). Suitable wintering habitat for the Oregon vesper sparrow occurs in grasslands near Cottonwood Creek in the southern Sierra Nevada, in the western Tehachapi Mountains surrounding Comanche Point, in the grasslands and weedy agricultural fields of the southern San Joaquin Valley and nearby foothills of the Tehachapi Mountains. The Oregon vesper sparrow is likely to occur within the GKR alignment in suitable wintering habitat, as described, but does not nest within the alignment, based on lack of nesting records within the Project area.
<i>Progne subis</i>	purple martin	- / CSC / -	One individual observed sitting on a power line 2.4 miles (3.9 kilometers) southeast of Power Line Road in Arvin; this location occurs in the Tehachapi Mountains above Annual Brome Grassland and scattered bladderpod, downslope from oak woodland vegetation further east. There are numerous records of nesting purple martins in oak woodlands in the Tehachapi Mountains; a 2010 purple martin study at Tejon Ranch indicates all nesting individuals nested in cavities in large valley oak trees at the tops of ridges in “open savanna settings” above 3,166 feet (965 meters) with the mean elevation for nesting cavities at 4,334 feet (1,321 meters) amsl. The nearest purple martin nest to the GKR alignment was located near Grapevine Peak less than one mile (1.6 kilometers) east of the alignment at 4,800 feet (1,463 meters) amsl; the elevation of the GKR alignment in this area is below 3,000 feet (914 meters) amsl. Nesting sites include a combination of available nesting cavities, aerial insect prey, open air space above nesting sites and low canopy cover at nest height, as well as low numbers of European starlings. The purple martin is likely to forage within the GKR alignment in the Tehachapi Mountains between Arvin and Stallion Springs; however it is unlikely to nest within the alignment, based on lack of suitable nesting conditions.
<i>Setophaga petechia</i>	yellow warbler	BCC / CSC / -	One yellow warbler was observed foraging in the Project area during the special-status wildlife surveys. An adult bird was observed in Fremont Cottonwood Forest on the west side of Castac Lake. No CNDDDB records were reported within the GKR alignment or nearby. The yellow warbler is a summer resident of California and winters in Central and South America. The yellow warbler forages in shrubby thickets and woodlands, particularly along watercourses and in wetlands where they commonly frequent trees including willows, alders, and cottonwoods up to elevations of 9,000 feet (2,700 meters) amsl in California, where it may nest. The yellow warbler is likely to occur within the GKR alignment in suitable habitat while foraging where the alignment crosses rivers and streams supporting stands of willows and other riparian vegetation in the Kern River drainage and at Fort Tejon State Historic Park, west of Castac Lake, and marshes less than two miles east of the Gorman Substation, but is unlikely to nest within the alignment.

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<b>Mammals</b>			
<i>Taxidea taxus</i>	American badger	- / CSC / -	No live American badgers were observed within the GKR alignment, however, three active American badger dens were observed within the GKR alignment, based on the shape and size of the den and the claw mark patterns. One den was located in Scalebroom Scrub at 1,000 feet (304 meters) amsl near a tributary to Cottonwood Creek in the southern Sierra Nevada between the Kern River Hydro Generation Facility and Highway 58. Two American badger dens were located on the north-facing slopes of the Tehachapi Mountains between Castac Lake and the Gorman Substation; one was observed in a north-facing drainage in Annual Brome Grassland at 4,050 feet (1,234 meters) amsl, and the other was located in Crane Canyon in Valley Oak Woodland at 3,700 feet (1,128 meters) amsl. There are no CNDDB occurrences within or near the GKR alignment north of Arvin. CNDDB records have been reported in the western foothills of the Tehachapi Mountains between Arvin and Tejon Creek, near the Fort Tejon State Historic Park, and east of the Gorman Substation. Suitable habitat for the American badger includes arid open shrublands, woodlands and forests, and herbaceous communities with friable soils below 4,050 feet (1,234 meters) amsl in the foothills of the Sierra Nevada between the Kern River Hydro Generation Facility and Highway 58 and on the north-facing slopes of the Tehachapi Mountains between Castac Lake and the Gorman Substation. The American badger is likely to occur within the GKR alignment while foraging, especially in the foothills of the Sierra Nevada between the Kern River Hydro Generation Facility and Highway 58 and on the north-facing slopes of the Tehachapi Mountains between Castac Lake and the Gorman Substation; it could also have natal dens within the alignment in these areas. It is unlikely to have a natal den in other potentially suitable habitat in the Tehachapi Mountains and does not occur in dense woody vegetation, rocky substrates, riparian woodlands and forests and seasonally inundated soils, areas under active agricultural production, and developed areas.
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	FE / CT / -	A potential active San Joaquin kit fox burrow was observed within the GKR alignment in Red Brome Grassland at the base of the western foothills of the Tehachapi Mountains just north of Comanche Point and south of Arvin (east of Teale Road). Three CNDDB occurrences recorded in the past 10 years have been reported in the western foothills of the Tehachapi Mountains to the north and south of the potential kit fox burrow location described above. Three records were reported in 2010, 2006, and 2007 respectively at the Bena Landfill approximately 2.0 miles (3.2 kilometers) east of the GKR alignment northeast of Edison. In addition, records were reported west of the alignment near Grapevine and south of the California aqueduct and northeast of Grapevine. The alignment traverses habitat described in records as supporting the San Joaquin kit fox in the southern San Joaquin Valley, including grassland, fallow agricultural land, and other open vegetation with loose-textured substrates or active burrows, especially in the foothills of the Sierra Nevada south of the Kern River and in and near the foothills of the western Tehachapi Mountains between Arvin and the grasslands south of Comanche Point to the south of El Paso Creek. The species historically occurred between the California aqueduct and Grapevine, but there are no recent observations in this area. The San Joaquin kit fox is likely to occur within the GKR alignment in suitable habitat while hunting and roaming in and near the San Joaquin Valley and associated foothills of the southern Sierra Nevada and the margins of the Tehachapi Mountains. The San Joaquin kit fox is unlikely to establish an active den within the GKR alignment in low-elevation habitat within the San Joaquin Valley and nearby foothills of the southern Sierra Nevada and Tehachapi Mountains except in the one location, where a potential active kit fox den was observed at the base of the Tehachapi Mountains near Comanche Point. The San Joaquin kit fox is unlikely to establish active dens in dense woody vegetation, rocky substrates, mountainous areas, riparian woodlands and forests, seasonally inundated soils, areas under active agricultural production, and developed areas.



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Scientific Name	Common Name	Regulatory Status (Federal/ California/ USFS)	Habitat and Distribution
<b>Not Observed</b>			
<b>Amphibians</b>			
<i>Batrachoseps relictus</i>	relictual slender salamander	- / CSC / USFS S	The relictual slender salamander occurs near surface water and is associated with rocky areas with springs and minimal cover by oaks, pines, buckeyes, and sycamores. Historically, salamanders now known as <i>B. relictus</i> occurred only in a small range from the south side of the Kern River in the Lower Kern River Canyon, to a few locations on Breckenridge Mountain. The lower Kern River Canyon populations have been extirpated; the species is now restricted to Breckenridge Mountain. Potentially suitable habitat for the relictual slender salamander containing streams with running surface water, seepages, and springs occurs at the extreme northern end of the GKR alignment in the lower Kern Canyon, but the species is extirpated from this area. Unsuitable habitat includes all other portions of the GKR alignment. The relictual slender salamander does not occur within the GKR alignment; it is extirpated from all portions of its historic range except at Breckenridge Mountain in the southern Sierra Nevada east of the GKR alignment
<i>Batrachoseps simatus</i>	Kern Canyon slender salamander	- / CT / USFS S	This species occurs under rocks and logs or in moist litter in narrow to open canyons shaded with riparian trees as well as on north-facing slopes supporting woodland vegetation; they have also been observed near seeps and on talus in chaparral vegetation. No CNDDDB records occur within the GKR alignment. The nearest CNDDDB record (Occurrence #1) was reported more than 3 miles (4.8 kilometers) up-river to the northeast of the GKR alignment and the Kern River Hydro Generation Facility at the confluence of Stark Creek and the Kern River at 1,515 feet (462 meters) amsl (CNDDDB 2019). The GKR alignment occurs outside of the known range for this species. The Kern River Hydro Generation Facility occurs at 960 feet (293 meters) amsl, below the minimum elevation for the closest observation of this species, and suitable moist woodland and riparian habitat on north-facing slopes is absent where the alignment overlaps the Kern River. The Kern Canyon slender salamander does not occur within the GKR alignment.
<i>Batrachoseps stebbinsi</i>	Tehachapi slender salamander	- / CT / -	Tehachapi slender salamanders occur in small, localized populations in moist canyons supporting woodlands and forests on north-facing slopes and near streambanks that are seasonally shaded. A 2009 record (Occurrence #20) was reported approximately 0.02 miles (0.03 kilometers) northeast of the GKR alignment along Grapevine Creek under an overstory of Goodding's black willow, box elder, and mulefat. A 1989 CNDDDB record (Occurrence #9) was reported within 0.1 mile (0.16 kilometer) east of the GKR alignment at Fort Tejon State Historic Park. A 1990 record (Occurrence #19) was reported 0.5 miles (0.8 kilometers) southeast of the GKR alignment and west of Occurrence #9 in Johnson Canyon at 3,450 feet (1,052 meters) amsl. Suitable habitat for the Tehachapi slender salamander within the GKR alignment includes moist canyons supporting woodlands and forests on north-facing slopes and near streambanks that are seasonally shaded and often located near canyon bottoms and streams between 3,100 and 4,700 feet (945 and 1,430 meters) amsl; known suitable habitat occurs along Grapevine Creek and in Johnson Canyon within Fort Tejon State Historic Park in California Buckeye Woodland, Blue Oak Woodland, and Black Willow Thickets in the Tehachapi Mountains. Although there are other locations within the GKR alignment that support oak woodland and riparian vegetation, there are no other locations with known observations of Tehachapi slender salamander and most other locations become seasonally dry in late summer and fall compared with the Grapevine and Johnson Canyon area. Unsuitable habitat for the Tehachapi slender salamander within the GKR alignment includes all shrublands and non-native grasslands, south-facing slopes, the area between the Kern River Canyon and Grapevine, all locations below 3,100 feet (945 meters) amsl, inundated marshes, croplands, and developed areas. The Tehachapi slender salamander is likely to occur within the GKR alignment in one location: between Grapevine Creek and Fort Tejon State Historic Park in moist shaded woodlands and canyon bottoms above 3,100 feet (945 meters) amsl. The Tehachapi slender salamander does not occur within other portions of the GKR alignment.

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<i>Ensatina eschscholtzii croceater</i>	yellow-blotched salamander	- / WL / USFS S	This species occurs in evergreen and deciduous forests, under rocks, logs, and other surface debris, especially on shaded north-facing areas near creeks or streams. Portions of the GKR alignment are within the breeding range of the yellow-blotched salamander. A 2001 CNDDDB record (Occurrence #18) overlaps the alignment approximately within Fort Tejon State Historic Park; a nearby 1989 record (Occurrence #1) was reported approximately 0.2 miles (0.3 kilometers) southwest of the alignment within Fort Tejon State Historic Park; and a 2004 record (Occurrence #8) was reported approximately 0.8 miles (1.3 kilometers) west of the alignment approximately 2.0 miles (3.2 kilometers) northeast of Gorman. Potentially suitable habitat, including deciduous forest with decaying logs rocks and other surface debris, occurs along the GKR alignment between Fort Tejon State Historic Park and Gorman. The yellow-blotched salamander is likely to occur within the GKR alignment between Fort Tejon State Historic Park and Gorman but does not occur elsewhere within the alignment.
<i>Rana boylei</i>	foothill yellow-legged frog	- / CT, CSC / USFS S	The foothill yellow-legged frog overwinters in smaller perennial tributaries and streams or in riparian habitat, often with woody debris or marsh vegetation and lays eggs in spring in streams and rivers that are often wide and sun-lit, often near water bars or pool edges. There are 3 CNDDDB records that are 60 years old or older near the GKR alignment: in the Kern River, in Tehachapi Creek, and in Tejon Creek. Potentially suitable habitat for the foothill yellow-legged frog within the Project alignment includes streams and rivers that are often wide and sun-lit, with overwintering sites in smaller perennial tributaries and streams or in riparian habitat with woody debris or marsh vegetation. Within the GKR alignment, such potential suitable habitat is limited to the Kern River canyon, based on a 79-year-old record more than 3 miles (4.8 kilometers) northeast of the GKR alignment. All other locations are more than 4 miles from the GKR alignment. Based upon the absence of observations of the foothill yellow-legged frog within 3 miles (4.8 kilometers) of the GKR alignment during the past 79 years, this species does not occur within the alignment.

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<b>Reptiles</b>			
<i>Anniella sp.</i>	California legless lizard	- / CSC / -	California legless lizards occur in cool moist sandy or loamy substrates, especially with a layer of leaf litter, such as in open stream terraces and areas with an overstory of deciduous riparian trees or oaks. A 1956 CNDDB record (Occurrence #108) generally overlaps the GKR alignment but was reported on the north side of the Kern River in the area where the alignment occurs on the south side. An 1864 CNDDB record (Occurrence #105) generally overlaps the GKR alignment in Fort Tejon State Historic Park. A 1955 record (Occurrence #16) was reported approximately 1 miles (1.6 kilometers) northwest of the alignment northeast of Wheeler Ridge. A 2012 CNDDB record (Occurrence #92) was reported 1.8 miles east of the Gorman Substation; this individual was tentatively identified as <i>Anniella pulchra</i> , but field notes states identity is uncertain and needs study. Additional records were reported in 2006 and 2010 near Gorman. Potentially suitable habitat containing sparsely vegetated stream terraces with sycamores, cottonwoods, or oaks is present along the GKR alignment in the Tejon foothills and between Grapevine and Lebec. The California legless lizard is likely to occur within the GKR alignment near the Gorman Substation, based on a 2012 CNDDB record (Occurrence #92) but is unlikely to occur elsewhere within the alignment.
<i>Anniella grinnelli</i>	Bakersfield legless lizard	- / CSC / -	The Bakersfield legless lizard occurs in moist, loose soils within leaf litter and debris coverings. A 2007 CNDDB record (Occurrence #1) was reported approximately 0.2 miles (0.3 kilometers) east of the GKR alignment in Caliente Creek in the Sand Ridge Preserve. Caliente Creek is disturbed in the vicinity of the GKR alignment. A 2016 CNDDB record (Occurrence #10) was reported approximately 4.2 miles (6.7 kilometers) east of the GKR alignment along Bena Road where it crosses Caliente Creek. A 2017 record (Occurrence #12) was reported approximately 4.7 miles (7.5 kilometers) southwest of the GKR alignment along Tejon Creek in the foothills of the western Tehachapi Mountains. Potentially suitable habitat occurs in moist, loose soils with leaf litter and debris in chaparral, oak woodland, and riparian habitats near streams in the foothills of the Sierra Nevada east of Bakersfield, such as Cottonwood Creek and Caliente Creek, as well as near Tejon Creek in the foothills of the Tehachapi Mountains. Caliente Creek is disturbed in the vicinity of the GKR alignment and may not support high quality habitat for this species. The Bakersfield legless lizard is likely to occur within the GKR alignment in moist, loose soils with leaf litter and debris near streams in the foothills of the Sierra Nevada in one location, near or in Caliente Creek. It is unlikely to occur in Tejon Creek where it crosses the alignment, where it has been reported within 5 miles (8 kilometers) of the alignment. It does not occur elsewhere within the alignment.
<i>Arizona elegans occidentalis</i>	California glossy snake	- / CSC / -	The California glossy snake occurs in scrub and grassland habitats with friable soils between the San Francisco Bay area and Baja California. A 2013 CNDDB record (Occurrence #51) was reported approximately 2.9 miles (4.7 kilometers) east of the GKR alignment along Bena Road in the Sierra Nevada foothills. All other records within 5 miles (8 kilometers) of the GKR alignment are more than 70 years old. A 1946 record (Occurrence #250) was reported approximately 0.3 miles (0.5 kilometers) west of the GKR alignment in the vicinity of Grapevine, and a 1939 record of a road kill (Occurrence #249) was reported approximately 0.6 miles (1 kilometer) south of the GKR alignment, 3 miles (4.8 kilometers) southeast of Gorman. Potentially suitable habitat for the California glossy snake occurs in grassland and scrub habitats in the Sierra Nevada foothills, near Grapevine, and near Gorman. The California glossy snake is unlikely to occur within the GKR alignment in the Sierra Nevada foothills, but is unlikely to occur elsewhere within the alignment, based on the absence of recent records that overlap the alignment.



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<i>Aspidoscelis tigris stejnegeri</i>	coastal whiptail	- / CSC / -	Coastal whiptails occur from coastal southern California to Baja California in desert to semi-arid areas with sparse vegetation – including chaparral, woodland, and riparian habitats. The GKR alignment is located on the northern edge of the coastal whiptail range. The northernmost CNDDB record for this species was an adult reported within the GKR alignment in a mix of grassland and Rubber Rabbitbrush Scrub; this 2004 record (Occurrence #79) was reported approximately 1.8 miles (2.9 kilometers) east of the GKR alignment in the Tehachapi Mountains. Suitable grassland and scrub habitat is present near the Gorman Substation. The coastal whiptail is likely to occur within the GKR alignment in one location: in the southern Tehachapi Mountains near the Gorman Substation and is unlikely to occur elsewhere within the alignment.
<i>Charina umbratica</i>	southern rubber boa	- / CT / USFS S	The southern rubber boa occurs above 5,000 feet (1,524 meters) amsl in oak and conifer woodlands and forests, as well as some shrublands. The highest elevation on the GKR alignment is 4,531 feet (1,381 meters) amsl. The nearest CNDDB records to the GKR alignment were reported more than 8 miles (kilometers) west of the alignment near Lake of the Woods. There is no suitable habitat within the GKR alignment to support the southern rubber boa; this species does not occur within the GKR alignment because the alignment lies below the minimum elevation for the southern rubber boa (5,000 feet [1,524 meters] amsl) and occurs outside the range of this species.
<i>Diadophis punctatus modestus</i>	San Bernardino ringneck snake	- / - / USFS S	The San Bernardino ringneck snake occurs in relatively rocky areas, often with areas covered with litter or debris as well as moist areas near small streams. A 2000 CNDDB record (Occurrence #3) was reported 2.5 miles (4.0 kilometers) northeast of the alignment in Live Oak Canyon under blue oak and black oak trees, herbaceous species, and debris in the Tehachapi Mountains east of Fort Tejon State Historic Park. The San Bernardino ringneck snake is unlikely to occur within the GKR alignment east of Fort Tejon State Historic Park and does not occur elsewhere within or near the alignment.
<i>Emys marmorata</i>	western pond turtle	- / CSC / USFS S	The western pond turtle is an aquatic species that occurs in ponds, marshes, rivers, or streams below 6,000 feet (1,828 meters) amsl that often contain aquatic vegetation. Two undated CNDDB records include Occurrence #862 located 0.7 miles (1.1 kilometers) west of the alignment at Cottonwood Creek northeast of Bakersfield, and Occurrence #926 located approximately 0.1 miles (0.2 kilometers) north of the GKR alignment at the mouth of the Kern River Canyon. There is an undated CNDDB record (Occurrence #864) located approximately 0.3 miles (0.5 kilometers) south of the alignment in Fort Tejon State Historic Park. Potentially suitable habitat occurs along the alignment where it crosses or is in close proximity to the Kern River, Cottonwood Creek northeast of Bakersfield, and where perennial water bodies such as ponds and streams occur between Grapevine and the Gorman Substation. The western pond turtle is unlikely to occur within the GKR alignment as this species is highly aquatic, the locations where the alignment crosses potentially suitable aquatic habitat for the western pond turtle are limited, and there are no recent observations of this species within the alignment.

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<i>Gambelia sila</i>	blunt-nosed leopard lizard	FE / CE,FP / -	Blunt-nosed leopard lizards inhabit the San Joaquin Valley and nearby valleys and foothills from southern Merced County south to Kern County and northeastern Santa Barbara County, generally below 2,400 feet (730 meters) amsl. They utilize rodent burrows for shelter and forage in sparse vegetation in grassland and low scrub habitat with low topographic relief, often along washes and drainages in well-drained soils. There are numerous CNDDB records for the blunt-nosed leopard lizard between the Kern River drainage and Grapevine Canyon, and five of these record locations generally intersect the GKR alignment; all records are more than 25 years old. A 1990 record (Occurrence #427) was reported approximately 2.2 miles (3.5 kilometers) east of Arvin. A 1991 record (Occurrence #426) overlaps the GKR alignment near the mouth of Little Sycamore Canyon. A 1991 record (Occurrence #425) overlaps the GKR alignment just south of Comanche Point where it intersects Tejon Creek. A 1994 record (Occurrence #419) overlaps the GKR alignment near the California aqueduct between Wheeler Ridge and Grapevine; a 1902 observation occurred in the same location, and 0.5 mile (0.8 kilometer) to the east of Occurrence #419 and the GKR alignment, there is a 1981 record (Occurrence #149) of 8 blunt-nosed leopard lizards and burrows in the same location as a 1914 observation. A 1863 record (Occurrence #430) was reported in Grapevine Canyon at 3,200 feet (975 meters) amsl in an area that generally overlaps the GKR alignment “about 2.5 miles northwest of old Fort Tejon, 2.7 miles south of Grapevine, Castac”. The blunt-nosed leopard lizard is likely to occur in two areas within the GKR alignment where the alignment crosses annual grassland and open scrub habitat in the San Joaquin Valley and nearby foothills of the Tehachapi Mountains north and south of Comanche Point southeast of Arvin and near the California aqueduct between Wheeler Ridge and Grapevine. All CNDDB records are 25 years or older that overlap the alignment, although recent records (2011-2016) were reported southeast of Arvin within one-half to one mile (0.8 to 1.6 kilometers) of the alignment.
<i>Masticophis flagellum ruddocki</i>	San Joaquin coachwhip	- / CSC / -	The San Joaquin coachwhip was not observed during the Arcadis surveys. A 2012 CNDDB record (Occurrence #90) was reported approximately 1.4 miles (2.2 kilometers) west of the GKR alignment on the south side of Tejon Creek in the western Tehachapi Mountains. Another 2012 record (Occurrence #89) was reported approximately 4.0 miles (6.4 kilometers) southwest of the GKR alignment near Chanac Creek in the Tehachapi Mountains. A 2010 CNDDB record (Occurrence #91) was reported approximately 3.3 miles (5.3 kilometers) west of the GKR alignment, 2.2 miles (3.5 kilometers) southwest of Wheeler Ridge. Potentially suitable grassland habitat for the San Joaquin coachwhip occurs along the GKR alignment in the uncultivated land in the Tehachapi Mountains southeast of Arvin and north of Grapevine, but there are no records of this species within the GKR alignment. The San Joaquin coachwhip is likely to occur within the GKR alignment on the south side of Tejon Creek in the western Tehachapi Mountains, based on the 2012 CNDDB record (Occurrence #90), but is unlikely to occur elsewhere within the alignment, based on the lack of other records within 3 miles (4.8 kilometers) of the alignment.

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<i>Phrynosoma blainvillii</i>	coast horned lizard	- / CSC / -	The coast horned lizard occurs in sandy washes and friable soils in areas with scattered low shrubs in a variety of vegetation types, including grasslands, shrublands, and woodlands. A 2010 record (Occurrence #855) was reported 0.1 miles (0.2 kilometers) east of the alignment at the top of the ridge of the Tehachapi Mountains between Castac Lake and the Gorman Substation. A 2006 record (Occurrence #148) was reported on the alignment east of the Gorman Substation. Suitable grassland and open woody vegetation habitat for the coast horned lizard within the GKR alignment occurs in the Tehachapi Mountains above the Gorman Substation. The coast horned lizard is likely to occur within the GKR alignment in one location: on the slopes of the Tehachapi Mountains between Castac Lake and the Gorman Substation. It is unlikely to occur elsewhere within the alignment, and is absent from areas with only rocky bedrock substrates, dense forests and woodlands, inundated areas, and developed areas.
<i>Thamnophis hammondi</i>	two-striped gartersnake	- / CSC / USFS S	The two-striped garter snake is aquatic, found in or near permanent fresh water, and often along streams in freshwater marsh, wetlands, and riparian scrub and forest. There are two CNDDDB records, both from 1983, that occur near the GKR alignment near Gorman on the south side of the Tehachapi Mountains. CNDDDB Occurrence #149 was reported approximately 0.1 miles (0.2 kilometers) southwest of the GKR alignment near Gorman Creek east of the Gorman Substation. CNDDDB Occurrence #150 was reported approximately 1.6 miles (2.6 kilometers) west of the alignment and west of the Gorman Substation. Potentially suitable habitat for the two-striped garter snake is present within the GKR alignment where aquatic features such as ponds and stream channels occur on the south side of the Tehachapi Mountains near the Gorman Substation; however, CNDDDB observations are over 35 years old. All other areas within the alignment are unlikely to support this species. The two-striped garter snake is unlikely to occur in aquatic habitat on the south side of the Tehachapi Mountains near the Gorman Substation. It does not occur elsewhere within the alignment.
<i>Xantusia vigilis sierrae</i>	Sierra night lizard	- / CSC / USFS S	The Sierra night lizard inhabits rocky outcrops in a small portion of the Greenhorn Mountains within the southern Sierra Nevada in open grassland with scattered oak woodland, gray pine and low shrubs. All CNDDDB records are at higher elevations on the north side of the Kern River near the Kern River Hydro Generation Facility, and the closest observation is 2.3 miles (3.7 kilometers) north of the alignment and north of the Kern River. The Sierra night lizard does not occur within the GKR alignment, and its range is north of the Kern River canyon outside of the alignment.

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<b>Birds</b>			
<i>Asio otus</i>	long-eared owl	- / CSC / -	The long-eared owl is found from sea level to above 6,500 feet (1,981 meters) amsl and generally occur in dense tree stands such as riparian forests for roosting and nesting and open grassland and shrubland or open coniferous and deciduous woodlands for hunting. All observations near the GKR alignment are confined to the western Tehachapi Mountains north and south of Comanche Point. The GKR alignment does not support dense deciduous riparian woodland in the to the western Tehachapi Mountains north and south of Comanche Point where long-eared owl observations have been reported, but it does support suitable foraging habitat in this area. The long-eared owl is unlikely to occur while foraging within the GKR alignment in the western Tehachapi Mountains north and south of Comanche Point. However, it does not nest within the alignment, due to lack of suitable riparian habitat near observations of this species.
<i>Buteo swainsoni</i>	Swainson's hawk	- / CT / -	Swainson's hawks forage in grasslands with scattered trees, riparian areas, savannas, and agricultural or ranch lands with groves or lines of trees adjacent to suitable foraging areas such as grasslands or alfalfa or grain fields that support rodent populations. Nests are generally located in solitary trees or in a small grove of trees along a stream or field. No CNDDDB occurrences have been reported within the GKR alignment (CNDDDB 2019). The nearest CNDDDB record is a 1935 nesting observation (Occurrence #2528) recorded at "Bakersfield" approximately 11 miles (17.7 kilometers) to the west. There are several eBird observations for the species, including an August 2019 observation: "observed over 200 Swainson's hawks in several smaller groups of around 50 soaring over the fields on both sides of the highway north/northeast of Grapevine exit. The Swainson's hawk is likely to forage within the GKR alignment on an occasional basis during spring and summer months; it is unlikely to nest within the GKR alignment, based on the lack of nesting records within 5 miles (8 kilometers) of the alignment.
<i>Dendragapus fuliginosus howardi</i>	Mount Pinos sooty grouse	- / CSC / -	The Mount Pinos sooty grouse occurs in montane coniferous forests that support white fir and other conifers at or above 7,500 feet (2,286 meters) amsl. The two CNDDDB records occur more than 7 miles (12 kilometers) west of the GKR alignment in the vicinity of Frazier Mountain and Mount Pinos. Suitable habitat and elevations for the Mount Pinos sooty grouse are absent from the GKR alignment, and this species does not occur within the alignment.
<i>Gymnogyps californianus</i>	California condor	FE / CE,FP / -	California condors are opportunistic scavengers that require large areas of open foothill grassland, oak savannas and woodlands, rocky shrublands, and coniferous forests below 9,000 feet (2,700 meters) amsl in the region surrounding the southern San Joaquin Valley and including the southern Sierra Nevada, the Tehachapi Mountains, Coast Ranges from Santa Clara County south to Los Angeles County and associated Transverse Ranges, northern Arizona, and southern Utah around the Grand Canyon area. Individual birds have a large range and have been known to travel up to 160 miles (250 kilometers) in search of carrion. A 2013 CNDDDB record (Occurrence #12) of two soaring California condor individuals was reported 2.5 miles (4 kilometers) south of the GKR alignment in the Tehachapi Mountains above Tejon Creek Canyon and between Cedar and White Cow Canyons; this location includes other observations as early as 1889. A 1976 record (Occurrence #2) was reported more than 6 miles (9.7 kilometers) east of the GKR alignment in a broad area encompassing Winters Ridge and El Paso Creek in the Tehachapi Mountains. Several eBird observations span the general Project area from the Kern River south to near the alignment east of Arvin, with several observations in the Tehachapi Mountains east of Comanche Point, including a 2015 sighting of 19 California condors less than 0.6 miles (1 kilometer) south of the alignment near Stallion Springs, as well as in Grapevine Canyon (eBird 2019). Potentially suitable roosting habitat for the California condor includes large trees, snags, and on cliffs and rocky outcrops, often in rugged mountainous habitat. Nesting habitat includes caves and ledges, often in deep canyons supporting cliffs. No suitable roosting or nesting habitat occurs within 2.5 miles (4 kilometers) of the GKR alignment. However, suitable foraging habitat is present within undeveloped areas in the Tehachapi Mountains. The California condor is likely to occur briefly along the alignment; however, it does not roost or nest within 2.5 miles (4 kilometers) of the GKR alignment.

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Scientific Name	Common Name	Regulatory Status (Federal/ California/ USFS)	Habitat and Distribution
<i>Haliaeetus leucocephalus</i>	bald eagle	FD / CE, FP / USFS S	Bald eagles occur along ocean shores, lake margins, and rivers for both nesting and wintering. Bald eagles construct a stick nest in large, old-growth mostly evergreen trees with open branches, especially ponderosa pine; they also nest on cliff faces. Nests tend to be located within one mile (1.6 kilometer) of water. The GKR alignment is outside of the breeding range of the bald eagle; there are no nesting records within or near the GKR alignment. A 2001 CNDDDB record (Occurrence #257) overlaps the GKR alignment near the California aqueduct, where a bald eagle was observed on the north side of Edmonston Pumping Plant Road east of Interstate 5; this record included wintering observations of an adult bald eagle perched on a dead tree snag. Another individual was observed further east in February 2000 (Occurrence #258) within the Project alignment between Edmonson Pumping Plant Road and the California aqueduct. The bald eagle is likely forage within the GKR alignment on an occasional basis in areas near water, but does not nest within the alignment; there are no nesting records for this species in the Project area. Suitable wintering habitat within the GKR alignment is present between the California aqueduct and Grapevine Canyon. Potentially suitable wintering habitat may be present in the Kern River canyon, at Brite Lake, and at Castac Lake.
<i>Vireo bellii pusillus</i>	least Bell's vireo	FE / CE / -	The least Bell's vireo is a migrant that typically arrives in southern and central California from Baja California, Mexico in early April and departs by late August. Historically, the least Bell's vireo nested as far north as Red Bluff in Tehama County south through the San Joaquin Valley and into the riparian corridors of southern California, the Coast Ranges, the southern Sierra Nevada, the Owens Valley, and portions of the Mojave Desert. This species generally nests in extensive, undisturbed, multi-layered riparian forests, especially those dominated by willow and/or cottonwood trees. Portions of the GKR alignment occur within the historic breeding range of the least Bell's vireo but outside of critical habitat for this species. A single CNDDDB record (Occurrence #138) has been reported within 5 miles (8 kilometers) of the GKR alignment; this 1973 observation of a potentially nesting, singing male Bell's vireo was reported from Arvin, approximately 0.5 mile (0.8 kilometer) west of the GKR alignment. Potentially suitable nesting habitat for least Bell's vireo includes extensive multi-layered riparian forests, especially those dominated by willow and/or cottonwood trees; although there are a few locations supporting riparian forests within the GKR alignment, none are undisturbed, extensive, and multi-layered. Potentially suitable riparian habitat capable of supporting breeding conditions for the least Bell's vireo does not occur within the GKR alignment. Based on the lack of observations and fragmentation and disturbance of riparian habitat within the GKR alignment, the least Bell's vireo does not nest within the GKR alignment.



**Table 3. Present or CNDDDB Recorded Sensitive Wildlife Species for KR Alignment  
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Scientific Name	Common Name	Regulatory Status (Federal/ California/ USFS)	Habitat and Distribution
<b>Mammals</b>			
<i>Ammospermophilus nelsoni</i>	Nelson's antelope squirrel	- / CT / -	The Nelson's antelope ground squirrel is a permanent resident of the San Joaquin Valley and surrounding foothills and valleys from 200-1,200 feet (61-366 meters) amsl, where it occupies grasslands, open shrublands, and alkali sink vegetation where there are widely scattered shrubs, forbs, and grasses in areas with gullies and washes. Portions of the GKR alignment in the San Joaquin Valley occur within the historic breeding range of the Nelson's antelope ground squirrel. A 1903 CNDDDB record (Occurrence #258) was reported 0.24 miles (0.39 kilometers) northwest of the alignment at Rose Station along the California aqueduct about 1.5 miles (2.4 kilometers) southeast of the intersection between Interstate 5 and the California aqueduct, just north of Grapevine. A 1911 record (Occurrence #257) was generally reported approximately 5 miles (8 kilometers) west of the GKR alignment and was mapped about 8 miles (12.9 kilometers) northeast of Bakersfield in the vicinity of the Kern River in Hart Memorial Park (CNDDDB 2019). All other CNDDDB records occur more than 5 miles (8 kilometers) west and north of the GKR alignment. Potentially suitable habitat along the Project alignment occurs in the uncultivated grasslands and low shrublands between the California aqueduct east of Wheeler Ridge south to Grapevine, where it was observed over 100 years ago; however, there are no current records for the Nelson's antelope squirrel that overlap or occur within 5 miles (8 kilometers) of the GKR alignment, and this species does not occur within the GKR alignment, based on habitat fragmentation and the lack of current records for this species.
<i>Antrozous pallidus</i>	pallid bat	- / CSC / USFS S	Pallid bats inhabit rocky outcrop areas in open, desert, grassland, shrubland, woodland, and forest communities where they commonly roost in rock crevices, caves, and mine tunnels and man-made structures. A 1998 CNDDDB record (Occurrence #32) was reported approximately 2.9 miles (4.7 kilometers) east of the GKR alignment of a group of 20 bats roosting on a railroad trellis over Caliente Creek. CNDDDB Occurrences #173 and #177 both broadly overlap the alignment between Fort Tejon State Historic Park and Lebec, but both records are more than 70 years old. Potentially suitable roosting habitat for the pallid bat in the vicinity of the alignment includes rocky outcrops, caves, mines, and man-made structures, including railroad trellises. There is one mine shaft located 0.5 miles (0.8 kilometers) south of the GKR alignment on a slope above Comanche Creek on Tejon Ranch, but there are no pallid bat observations in the area. The Kelso mine in the Tehachapi Mountains is located 4.9 miles (7.9 kilometers) northeast of the Gorman Substation in the Tehachapi Mountains; there are no CNDDDB records for bats from this location. The pallid bat is likely to occur within the alignment while foraging or during dispersal but is unlikely to roost in the Caliente Creek and Kern Canyon areas in the foothills of the southern Sierra Nevada, based on a 1998 observation in Caliente Creek. It is also unlikely to roost within the GKR alignment between Fort Tejon State Historic Park and Lebec or elsewhere in the Tehachapi Mountains or San Joaquin Valley, based upon the absence of observations in the past 74 years.



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Scientific Name	Common Name	Regulatory Status (Federal/ California/ USFS)	Habitat and Distribution
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	- / CSC / USFS S	<p>The Townsend's big-eared bat occurs throughout California in all but subalpine and alpine habitats. During the winter, Townsend's big-eared bats primarily roost in mines or caves, whereas in the summer the species will roost in a wide variety of locations, including limestone caves, lava tubes, and human-made structures; in all cases, they tend to occupy spacious, cavern-like structures. Townsend's big-eared bats forage over a variety of habitats, almost always near caves or other roosting areas. They can be found in cultivated valleys, shrublands, woodlands, and forests in California. A 1945 CNDDDB record (Occurrence #31) was reported in an area broadly overlapping the GKR alignment near Lebec; annotations indicate a single specimen was collected from an old icehouse at the back corner of the Lebec Hotel, which was closed in 1968 and demolished in 1971. There is one mine shaft located 0.5 miles (0.8 kilometers) south of the GKR alignment on a slope above Comanche Creek on Tejon Ranch, but there are no Townsend's big-eared bat observations in the area. Kelso mine in the Tehachapi Mountains is located 4.9 miles (7.9 kilometers) northeast of the Gorman Substation in the Tehachapi Mountains; there are no CNDDDB records for bats from this location.</p> <p>Unsuitable roosting habitat within the GKR alignment includes lowland grassland and agricultural areas, sandy areas, and relatively flat open terrain lacking rock outcrops, mines, man-made structures, and other potential roost sites that lack a water source, as well as all developed areas. The Townsend's big-eared bat is likely to occur within the alignment while foraging or during dispersal but is unlikely to roost within the GKR alignment based upon the absence of suitable roosting sites or observations in the past 74 years.</p>
<i>Dipodomys nitratoides nitratoides</i>	Tipton kangaroo rat	FE / CE / -	<p>The Tipton kangaroo rat is endemic to the southern San Joaquin Valley and surrounding foothills below 1,800 feet (549 meters) amsl. They occur in grassland vegetation as well as valley scrub communities and require soft friable soils in areas not subject to seasonal flooding areas. A 1903 CNDDDB record (Occurrence #95) overlaps the GKR alignment approximately 1.5 mi (2.4 kilometers) north of Grapevine at Rose Station, Fort Tejon. A nearby 1976 record (Occurrence #97) was reported further west, 1.5 miles west of Mettler. A 1999 record (Occurrence #104) was reported less than 1 mile (1.6 kilometers) west of the alignment and approximately 1.5 miles (2.4 kilometers) east of the town of Edison and west of Bena; this record represents the capture and release of 12 Tipton kangaroo rats. Potentially suitable habitat for the Tipton kangaroo rat within the GKR alignment includes stretches of natural undisturbed grasslands, open shrublands, or fallow lands in the southern San Joaquin Valley with soft friable soils that have supported the species in the past, such as in the foothills of the southern Sierra Nevada north of Highway 58 as well as in grasslands and fallow agricultural land east of Wheeler Ridge south to Grapevine; there is potential suitable habitat in the area surrounding Comanche Point as well. Low quality habitat includes all other portions of the GKR alignment in upland areas above 1,800 feet (meters) amsl, wetlands, dense shrublands and woodlands, croplands, and developed areas. The Tipton kangaroo rat is likely to occur in two limited areas within the GKR alignment: in soft friable soils north of California Highway 58 and south of the foothills of the southern Sierra Nevada, where it was observed 20 years ago, as well as in grasslands and fallow agricultural land east of Wheeler Ridge south to Grapevine. Although the observations at the southern end of the San Joaquin Valley near Grapevine are more than 40 years old, conditions remain within 3 miles (4.8 kilometers) that could support this species. The Tipton kangaroo rat does not occur elsewhere within the GKR alignment.</p>

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Scientific Name	Common Name	Regulatory Status (Federal/ California/ USFS)	Habitat and Distribution
<i>Myotis thysanodes</i>	fringed myotis	- / - / USFS S	Fringed myotis occur in a variety of habitats including desert-scrub to fir-pine vegetation communities. Optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer, generally at 4,000 to 7,000 feet (1,300 to 2,200 meters) amsl. They are most commonly found in oak and pinyon woodlands. During summer months, roosting sites consist of abandoned mines, tree snags, rock outcrops, and natural caves, with the most common roosts including abandoned mines, caves, and buildings. Potentially suitable habitat for the fringed myotis includes natural caves, rock outcroppings with crevices, and abandoned mine shafts and buildings in mountainous areas within the GKR alignment, such as the San Emigdio Mountains above Fort Tejon State Historic Park near the single CNDDDB observations. Mine shafts do not occur along the alignment in this area. The fringed myotis is unlikely to roost within the GKR alignment based upon the absence of suitable roosting habitat occurring within the alignment; on occasion, it may forage within the alignment.
<i>Onychomys torridus tularensis</i>	Tulare grasshopper mouse	- / CSC / -	Tulare grasshopper mice occur in hot, arid valleys and scrub in the southern San Joaquin Valley. Their diet consists almost exclusively of arthropods, and this species requires an abundant supply of insects. Potentially suitable grassland and scrub habitat is present within the GKR alignment near Caliente Creek and the nearby low foothills of the southern Sierra Nevada; this species has not been reported in the San Joaquin Valley near the GKR alignment in other locations. Unsuitable habitat includes all other portions of the GKR alignment in cooler upland areas and in dense shrublands and woodlands, wetlands, croplands, and developed areas. Based upon the absence of recent CNDDDB records, the Tulare grasshopper mouse is unlikely to occur within the GKR alignment in Caliente Creek and is absent elsewhere within the alignment.
<i>Perognathus alticola inexpectatus</i>	Tehachapi pocket mouse	- / CSC / USFS S	The Tehachapi pocket mouse inhabits grasslands and open shrublands and woodlands in loose sandy soils between 3,500 and 6,000 feet (1,067 and 1,829 meters) amsl in the Tehachapi Mountains from Tehachapi Pass southwest towards Gorman, west to Cuddy Valley near Mount Pinos. There are two records that overlap the alignment near the Gorman Substation. These records are all more than 40 years old. Potentially suitable habitat within the GKR alignment is present within the annual grasslands and open shrublands near the Gorman Substation. Other locations within the alignment do not provide documented suitable habitat for this species, with confirmed observations within the past 20 years. The Tehachapi pocket mouse is unlikely to occur within the GKR alignment near the Gorman Substation ; it does not occur elsewhere within the alignment.

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Scientific Name	Common Name	Regulatory Status (Federal/ California/ USFS)	Habitat and Distribution
Invertebrates			
<i>Andrena macswaini</i>	An andrenid bee	- / S2 / -	This bee occurs in a few locations on the west- and south-facing slopes of the Sierra Nevada foothills from Madera County south to Kern County. It nests in deep sandy soils on morning-opening, yellow-flowered species of <i>Camissonia</i> . Potentially suitable habitat for this bee includes deep sandy soils for nesting and the presence of <i>Camissonia</i> in the foothills of the western and southern Sierra Nevada. Unsuitable habitat includes all locations south of the Sierra Nevada foothills and all locations within the southern Sierra Nevada foothills lacking deep sandy soils and <i>Camissonia</i> . There are no observations of this andrenid bee overlapping the GKR alignment and the single observation is almost 60 years old. This andrenid bee is unlikely to occur within the GKR alignment where there are deep sandy soils and Camissonia in the foothills of the southern Sierra Nevada. This bee is absent in all other locations within the alignment.
<i>Bombus caliginosus</i>	obscure bumble bee	- / S1S2 / -	The obscure bumble bee occurs in grasslands and shrublands from northern Washington to southern California. A 1988 CNDDDB record (Occurrence #172) was reported 5 miles (8 kilometers) to the west of the GKR alignment near Lebec in Frazier Park at 4,800 feet (1,463 meters) amsl. There are no other records for the species within 10 miles (16 kilometers) of the alignment. There is no suitable habitat for the obscure bumble bee within the GKR alignment. There are no records closer than 5 miles (8 kilometers) to the alignment, and the one CNDDDB observation is over 30 years old and at a higher elevation than the highest elevation within the alignment, 4,531 feet (1,380 meters) amsl. The obscure bumble does not occur within the GKR alignment.
<i>Bombus crotchii</i>	Crotch's bumble bee	- / S1S2 / -	The distribution of the Crotch's bumble bee ranges from the coast of California to the western flanks of the Cascade Range and Sierra Nevada, with uncommon occurrences in the margins of the Mojave and Sonoran deserts. Habitat requirements include pollen from up to 33 plant genera, including buckwheat ( <i>Eriogonum</i> ), milkweed ( <i>Asclepias</i> ), lupine ( <i>Lupinus</i> ), poppy ( <i>Eschscholzia</i> ), and pincushion ( <i>Chaenactis</i> ). There are several CNDDDB records for Crotch's bumble bee within or near the GKR alignment; all are over 40 years old. Suitable habitat for the Crotch's bumble bee includes grasslands and shrublands supporting their preferred pollinator plants. Historic locations (over 40 years in age) include the Cummings and Tehachapi Valleys, the area near Grapevine, Fort Tejon State Historic Park, and near the-Gorman Substation. The Crotch's is unlikely to occur within the GKR alignment in historic locations, including the Cummings and Tehachapi Valleys, the area near Grapevine, Fort Tejon State Historic Park, and near the Gorman Substation, but does not occur elsewhere within the alignment.

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<i>Branchinecta conservatio</i>	conservancy fairy shrimp	FE / S2 / -	Endemic to the grasslands of the northern two-thirds of the Central Valley. The conservancy fairy shrimp inhabits rather large vernal pools that may contain turbid water during the rainy season and dry by late spring. The one CNDDDB record (Occurrence #46) within the Project region is thought to have been inaccurately reported in a 1992 thesis. This observation was reported 8 miles (12.9 kilometers) west of the GKR alignment near the intersection of Lockwood Valley Road and Frazier Mountain Road. Potentially suitable vernal pool habitat for the conservancy fairy shrimp does not occur in the vicinity of the GKR alignment and the alignment is outside of the known range of this species. The conservancy fairy shrimp does not occur within the GKR alignment.
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	FT / - / -	Occurs only in the Central Valley of California, in association with blue elderberry ( <i>Sambucus nigra</i> ). Lays eggs in elderberries; some preference shown for "stressed" elderberries. Potentially suitable riparian forest supporting elderberry individuals and the valley elderberry longhorn beetle may occur around the mouth of the Kern River Gorge in the vicinity of the GKR alignment, but the valley elderberry longhorn beetle has not been reported in this location. The valley elderberry longhorn beetle does not occur within the GKR alignment.
<i>Euphilotes battoides comstocki</i>	Comstock's blue butterfly	- / S2 / -	The Comstock's blue butterfly occurs in grassland vegetation and uses buckwheat ( <i>Eriogonum</i> ) as a pollen source. There are only two CNDDDB records for the Comstock's blue butterfly, both in Kern County. A 1988 record (Occurrence #1) generally overlaps the alignment in Tehachapi. A 1977 record (Occurrence #2) was reported from the Piute Mountains more than 20 miles (32 kilometers) east of the Kern River Hydro Generating Facility. Potentially suitable habitat for the Comstock's blue butterfly include grassland vegetation with buckwheat ( <i>Eriogonum</i> ) present, and such habitat was present 30 years ago in Tehachapi. The Comstock's blue butterfly is unlikely to occur near Tehachapi in grassland vegetation that supports with buckwheat ( <i>Eriogonum</i> ) but does not occur elsewhere within the alignment..
<i>Helminthoglypta concolor</i>	whitefir shoulderband	- / S1S2 / -	The whitefir shoulderband snail is a terrestrial snail found known only from the Tehachapi Mountains in white fir ( <i>Abies concolor</i> ) forest beneath decaying bark and logs above 5,289 feet (1,612 meters) amsl. There are four CNDDDB records for the whitefir shoulderband snail in the Tehachapi Mountains above 5,289 feet (1,612 meters) amsl. The highest elevation within the GKR alignment is 4,531 feet (1,380 meters) amsl, below the minimum elevation for this species. The highest elevation within the GKR alignment is 4,531 feet (1,380 meters) amsl, below the minimum elevation for this species. There are no white fir trees within the alignment. There is no suitable habitat for the whitefir shoulderband snail within the GKR alignment, and it does not occur within the alignment.

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<i>Lytta moesta</i>	moestan blister beetle	- / S2 / -	The moestan blister beetle can be found in grassland and shrubland habitats within the Central Valley and adjacent foothills of the Sierra Nevada. Two historic CNDDDB records occur near the GKR alignment in the San Joaquin Valley. An undated record (Occurrence #12) was reported from Edison, and a 1931 record (Occurrence #2) was reported from Arvin. The area surrounding Edison and Arvin is in active agricultural production, and there is little remaining grassland or shrubland habitat for this species near to where it was found over 85 years ago. The area surrounding Edison and Arvin is in active agricultural production, and there is little remaining grassland or shrubland habitat for this species near to where it was found over 85 years ago. The moestan blister beetle is unlikely to occur in grassland and shrubland vegetation within the GKR alignment between Edison and Arvin, where native vegetation is mostly absent, and this species does not occur elsewhere within the alignment.
<i>Lytta morrisoni</i>	Morrison's blister beetle	- / S1S2 / -	The Morrison's blister beetle occurs in grasslands and shrublands in the Central Valley between San Benito and Kern Counties. One undated CNDDDB record (Occurrence #2) for the Morrison's blister beetle was reported from Edison, 2.8 miles (4.5 kilometers) west of the GKR alignment. The area surrounding Edison is in active agricultural production, and there is little remaining grassland or shrubland habitat for this species near to where it was found decades ago. The Morrison's blister beetle is unlikely to occur in grassland and shrubland vegetation within the GKR alignment near Edison, where native vegetation is mostly absent, and this species does not occur elsewhere within the alignment.
<i>Plebulina emigdionis</i>	San Emigdio blue butterfly	- / S1S2 / USFS S	The San Emigdio blue butterfly occurs in the montane desert regions of southern California from the southern Owens Valley into the Mojave Desert, and from the southern Sierra Nevada to Los Angeles County. The host plant for the caterpillar is four-winged saltbush ( <i>Atriplex canescens</i> ). One CNDDDB record (Occurrence #10) for the San Emigdio blue butterfly was reported 1.4 miles (2.2 kilometers) southwest of the GKR alignment in a location described as "near Frazier Park" at 3,875 feet (1,181 meters) amsl in 1927. In 2007, this butterfly was photographed again in this location, and is said to potentially occur between Interstate 15 and Lake of the Woods in the Cuddy Valley west of the alignment. Potentially suitable habitat for the San Emigdio blue butterfly within the GKR alignment includes locations supporting four-wing saltbush between Lebec and the Gorman Substation, where it is unlikely to occur, and it is unlikely to occur elsewhere within the alignment.
<i>Pyrgulopsis greggi</i>	Kern River pyrg	- / S1 / -	The Kern River pyrg occurs in mud and watercress in Grapevine Creek in Fort Tejon State Historic Park. The Kern River pyrg is unlikely to occur within the GKR alignment in Grapevine Creek as it passes through Fort Tejon State Historic Park; there are no springs within the alignment, and the Kern River pyrg does not occur elsewhere within the alignment.

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 Southern California Edison

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<i>Speyeria egleis tehachapina</i>	Tehachapi Mountain silverspot butterfly	- / S2 / USFS S	The Tehachapi Mountain silverspot butterfly is endemic to Kern County, where it is found between 7,000 and 8,400 feet (2,134 and 2,560 meters) in the Tehachapi Mountains and Piute Mountains of the southern Sierra Nevada. It utilizes Viola purpurea as a larval food source There are four CNDDDB records for the Tehachapi Mountain silverspot butterfly. A 1962 record (Occurrence #1 and the type locality) was reported from Tehachapi Mountain at 7,000 feet (2,134 meters) amsl, 3.7 miles (6 kilometers) south of the GKR alignment in the Tehachapi Valley. The other records are further away in the Piute Mountains. There is no suitable habitat for the Tehachapi Mountain silverspot butterfly within the GKR alignment. The species occurs at higher elevations than the alignment and requires a larval plant that is not present.

Status Codes

United States Fish and Wildlife Service (USFWS)

FE Federal Endangered  
 FT Federal Threatened  
 FC Federal Candidate

BCC Bird of Conservation Concern

United States Forest Service  
 USFS S  
 NatureServe State Rankings  
 S1 Critically Imperiled  
 S2 Imperiled  
 S1S2 between rankings

California Department of Fish and Wildlife (CDFW)

CE California Endangered  
 CT California Threatened  
 CR California Rare  
 CC California Candidate (Threatened or Endangered)  
 CSC California Species of Concern  
 FP California Fully Protected  
 WL California Watch List

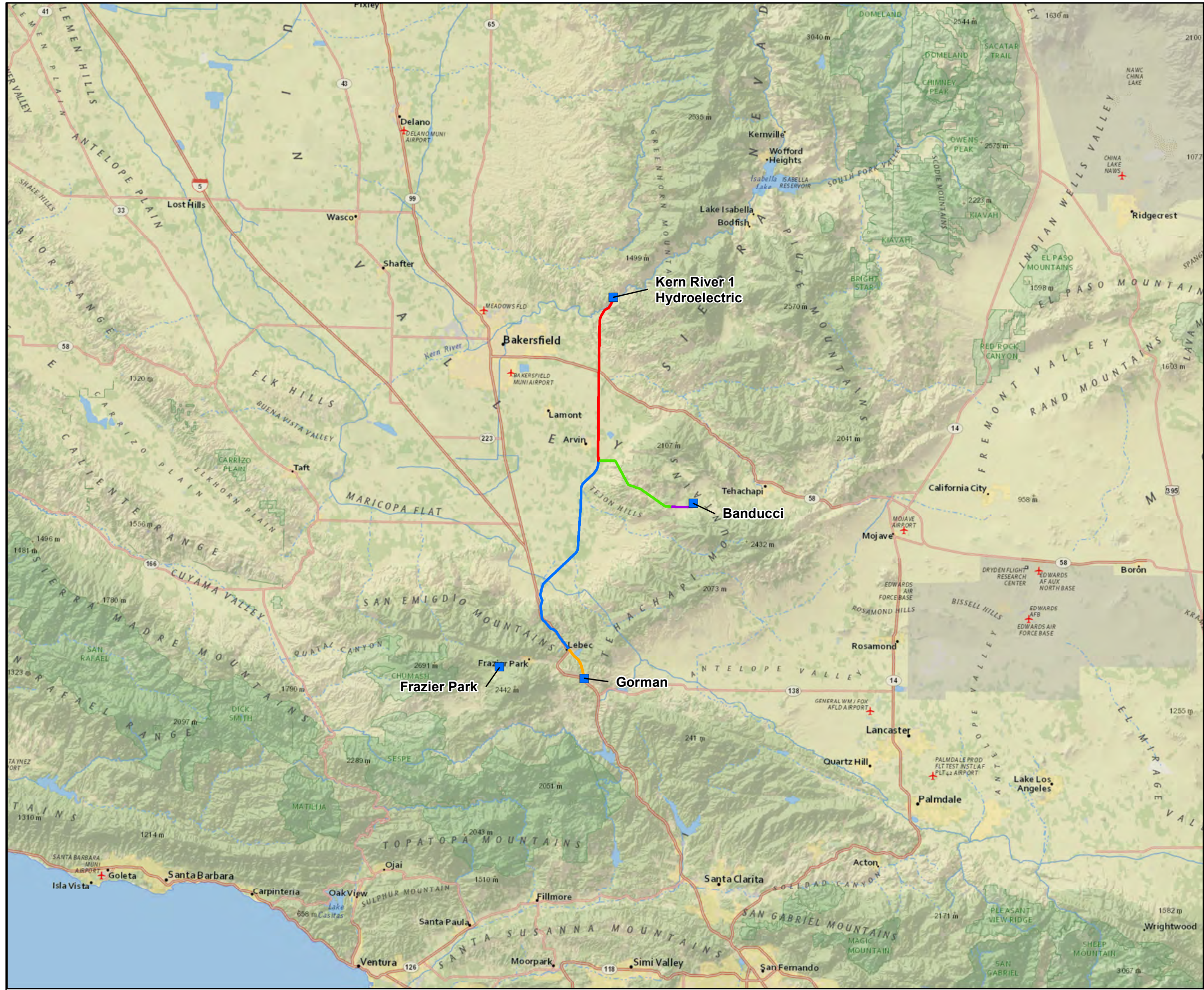



FIGURES






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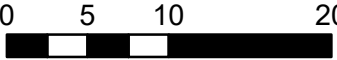
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**Legend**

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5




0 5 10 20  
Miles



0 40 80  
Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

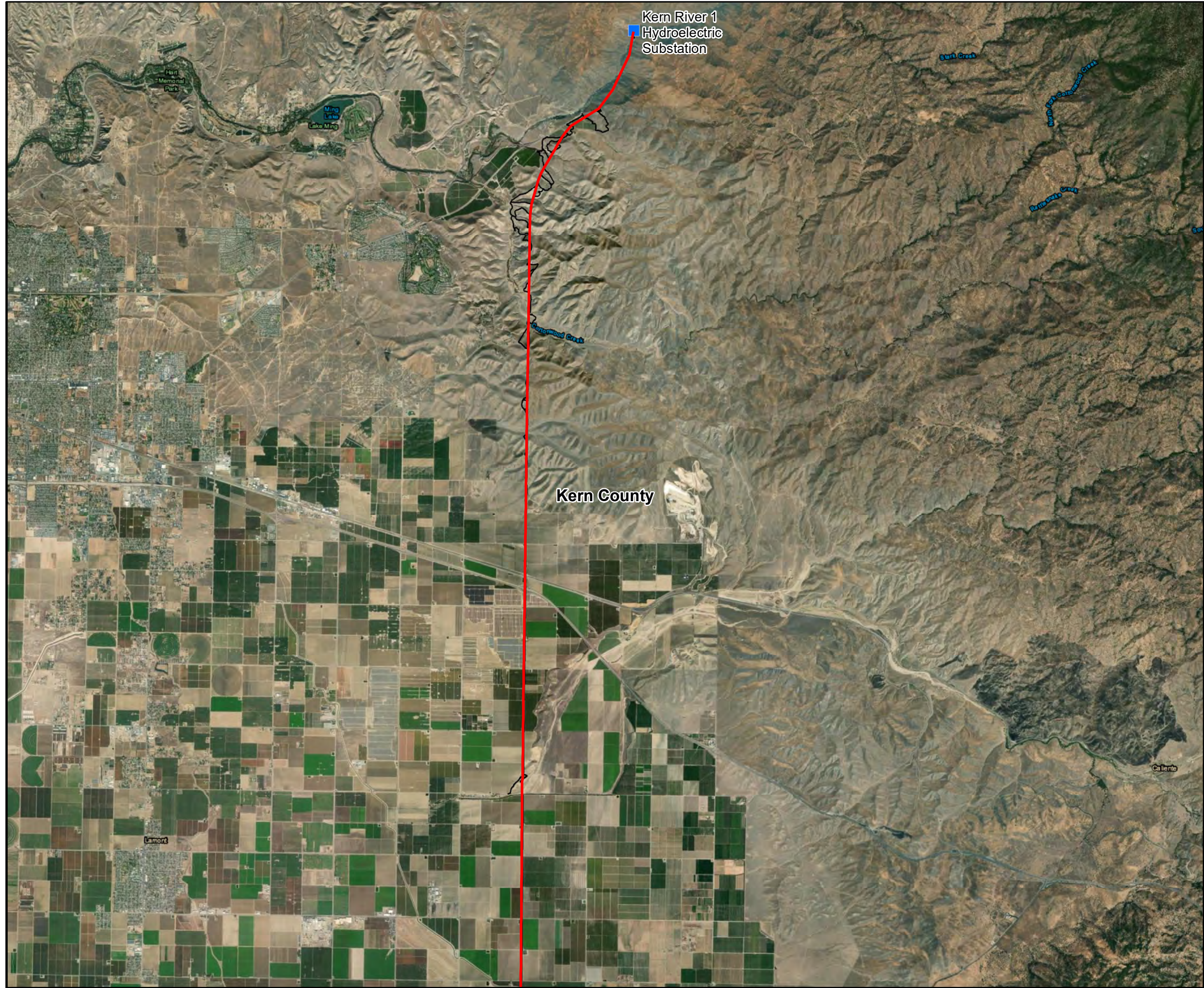
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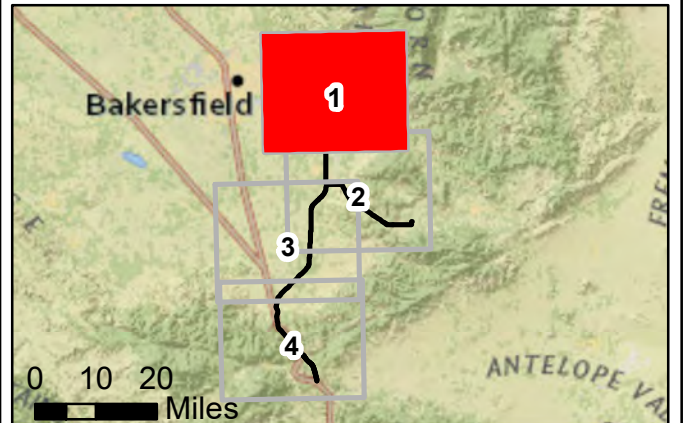
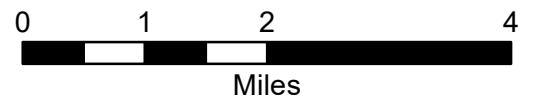
**FIGURE  
1**




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Coordinate System: NAD 1983 UTM Zone 11N



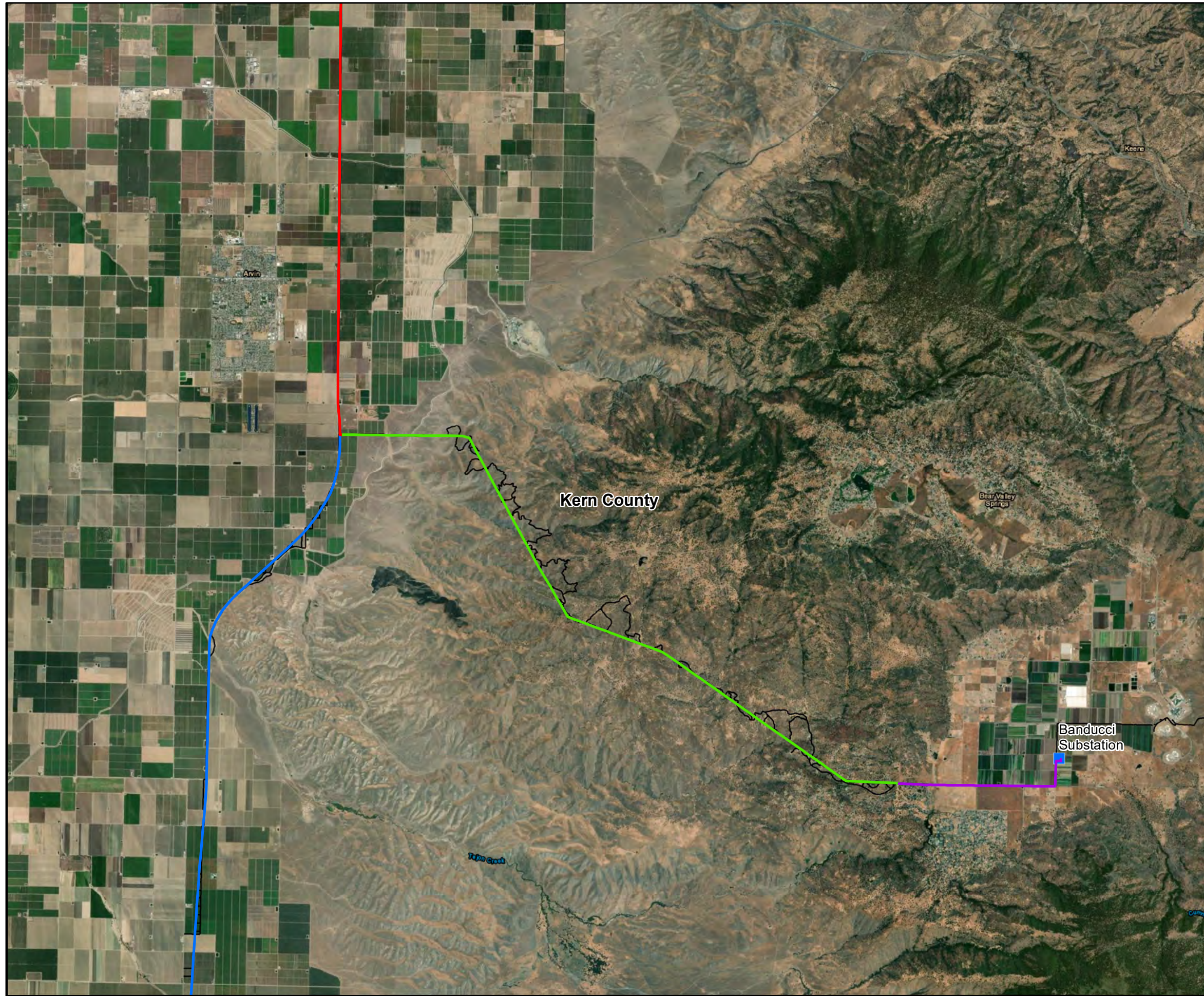
- Legend
- Substation
  - Segment 1
  - Existing Access Road




<b>GORMAN-KERN RIVER 66 kV PROJECT</b>	
<b>SITE LOCATION</b>	
	<b>FIGURESET 2.a</b>




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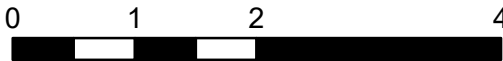


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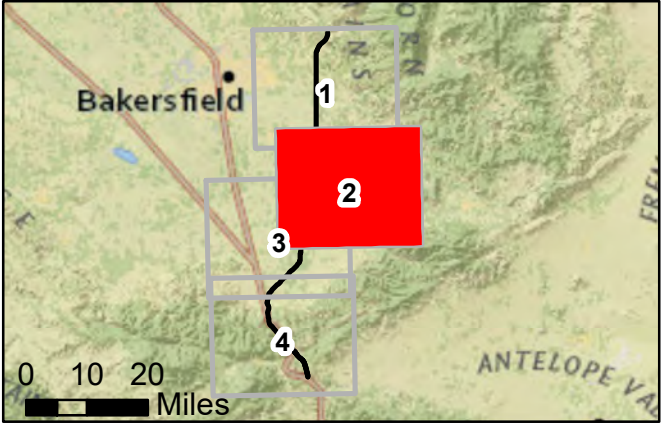


**Legend**

- Substation
- Segment 1
- Segment 2
- Segment 4
- Segment 5
- Existing Access Road




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Miles



0 10 20  
Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

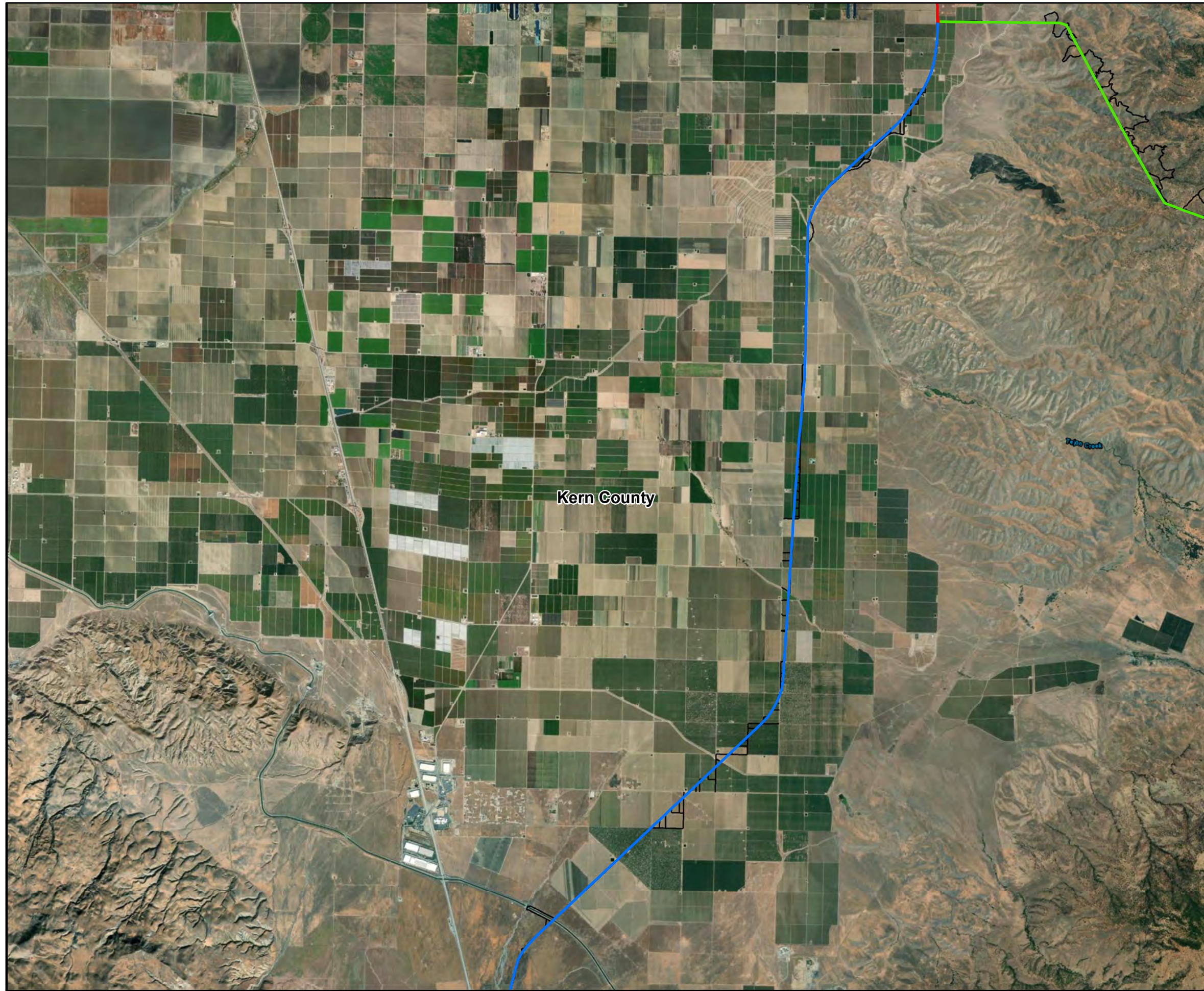
**SITE LOCATION**



FIGURESET  
**2.b**



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Coordinate System: NAD 1983 UTM Zone 11N





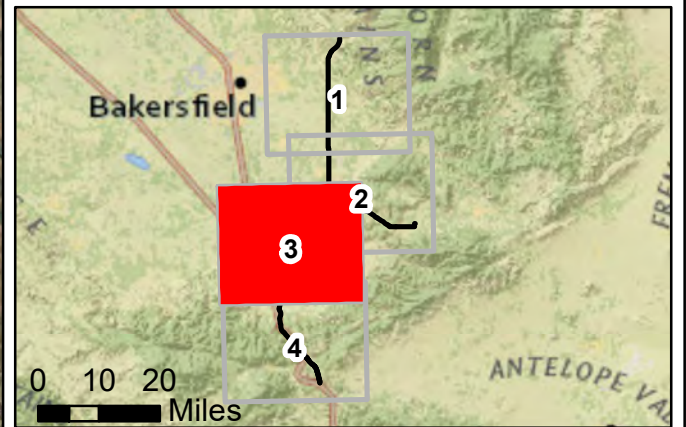
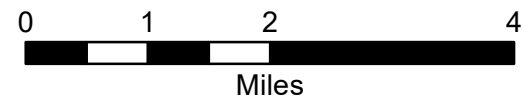
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- Legend
- Substation
  - Segment 1
  - Segment 2
  - Segment 4
  - Existing Access Road



GORMAN-KERN RIVER

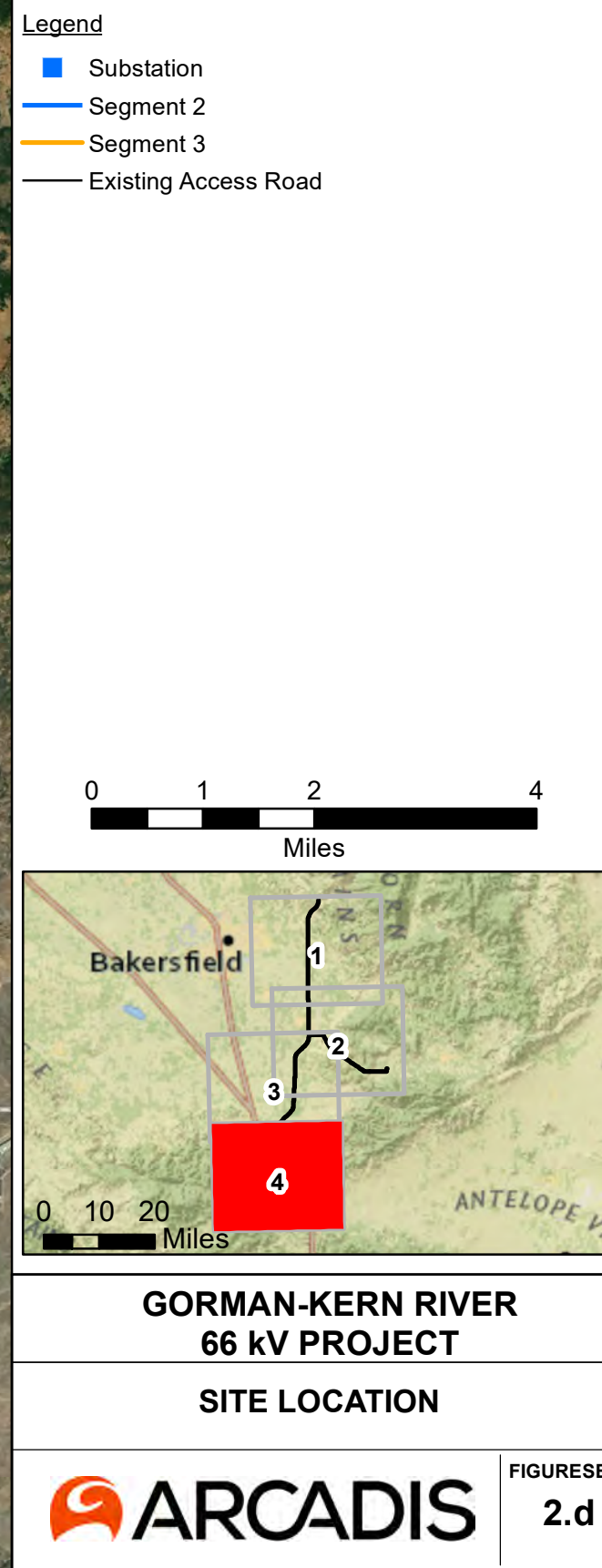
66 kV PROJECT

SITE LOCATION



FIGURESET  
2.c



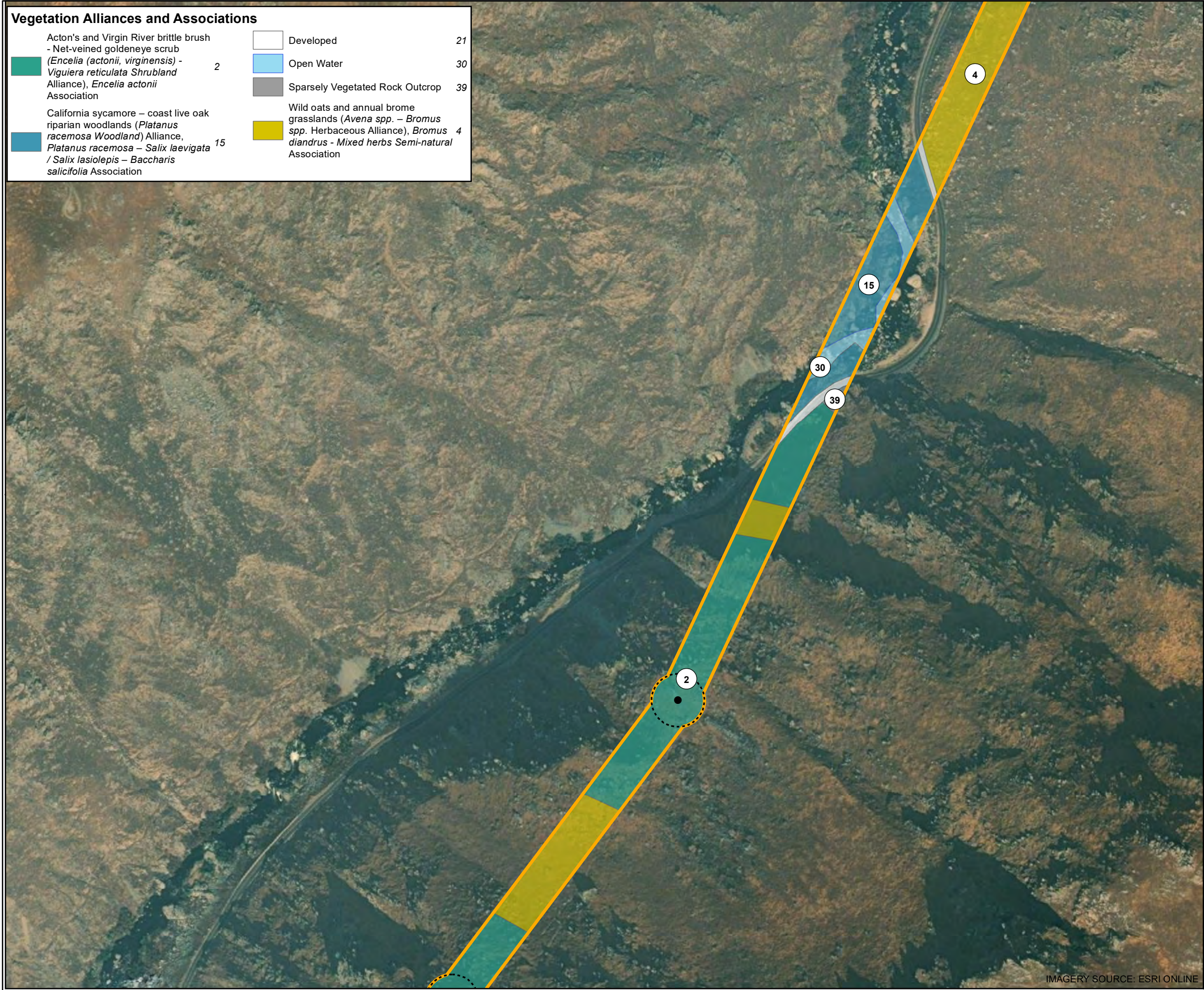










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Coordinate System: NAD 1983 UTM Zone 11N





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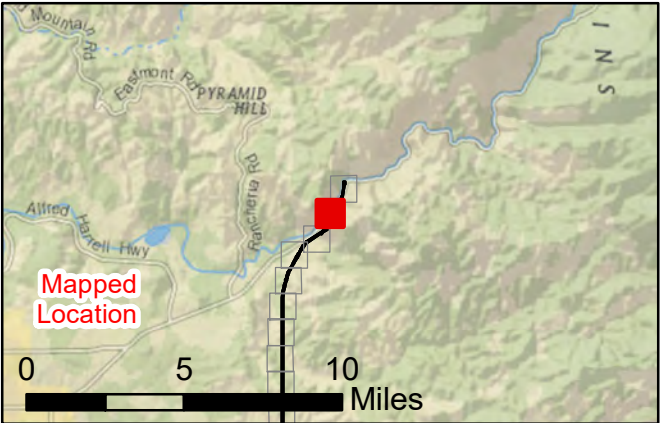


**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

05001,000


Feet



0510Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



FIGURESET  
2 of 92



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Coordinate System: NAD 1983 UTM Zone 11N

Active Agriculture

1

Acton's and Virgin River brittle brush - Net-veined goldeneye scrub (*Encelia (actonii, virginensis) - Viguiera reticulata* Shrubland Alliance), *Encelia actonii* Association

2

Cheesebush - sweetbush scrub (*Ambrosia salsola - Bebbia juncea* Shrubland Alliance), *Ambrosia salsola* Association


18

Developed

21

Wild oats and annual brome grasslands (*Avena spp. - Bromus spp.* Herbaceous Alliance), *Bromus diandrus - Mixed herbs* Semi-natural Association


4



SOUTHERN CALIFORNIA

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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

SUBSTATION LOCATION

—


ACCESS ROADS

▭

SURVEY AREA

GORMAN-KERN RIVER  
66 kV PROJECT

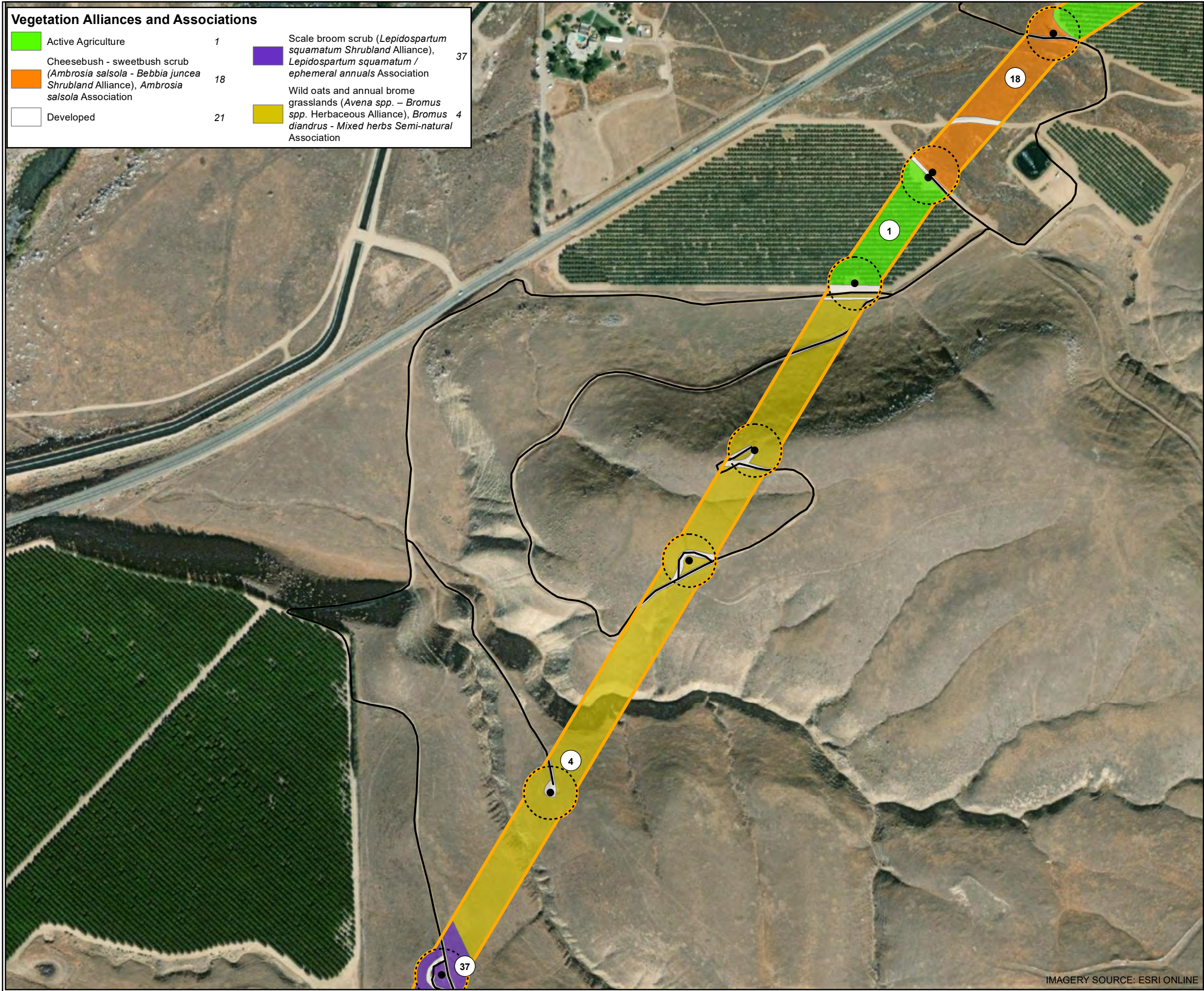
NATURAL COMMUNITIES




FIGURESET  
3 of 92




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Coordinate System: NAD 1983 UTM Zone 11N








Vegetation Alliances and Associations			
<div></div> Active Agriculture	1	<div></div> Scale broom scrub ( <i>Lepidospartum squamatum</i> Shrubland Alliance), <i>Lepidospartum squamatum</i> / ephemeral annuals Association	37
<div></div> Cheesebush - sweetbush scrub ( <i>Ambrosia salsola</i> - <i>Bebbia juncea</i> Shrubland Alliance), <i>Ambrosia salsola</i> Association	18	<div></div> Wild oats and annual brome grasslands ( <i>Avena</i> spp. - <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4
<div></div> Developed	21		



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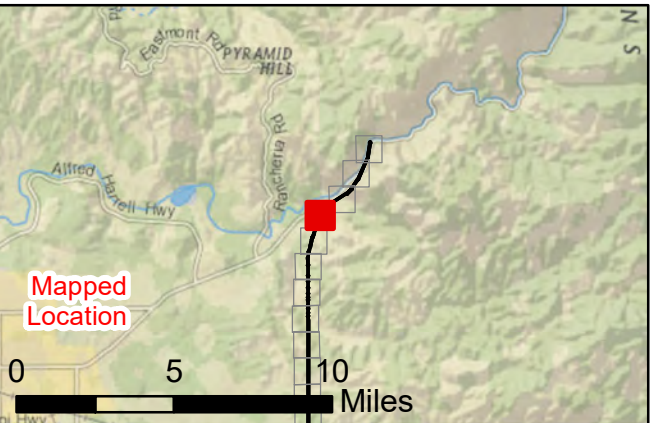


**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA

05001,000


Feet



0510Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



FIGURESET  
4 of 92

IMAGERY SOURCE: ESRI ONLINE




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Coordinate System: NAD 1983 UTM Zone 11N




**Vegetation Alliances and Associations**

Developed	21	Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association
Scale broom scrub ( <i>Lepidospartum squamatum</i> Shrubland Alliance), <i>Lepidospartum squamatum</i> / ephemeral annuals Association	37	



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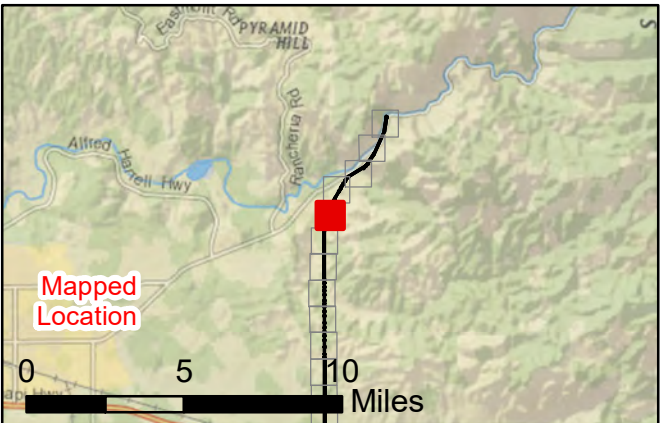


**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

05001,000


Feet



0510Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



**ARCADIS**





FIGURESET

5 of 92



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Coordinate System: NAD 1983 UTM Zone 11N



Vegetation Alliances and Associations			
	Cheesebush - sweetbush scrub ( <i>Ambrosia salsola</i> - <i>Bebbia juncea</i> Shrubland Alliance), <i>Ambrosia salsola</i> Association	18	
	Developed	21	
	Scale broom scrub ( <i>Lepidospartum squamatum</i> Shrubland Alliance), <i>Lepidospartum squamatum</i> / <i>ephemeral annuals</i> Association	37	
	Wild oats and annual brome grasslands ( <i>Avena</i> spp. - <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - <i>Mixed herbs</i> Semi-natural Association	4	




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LEGEND

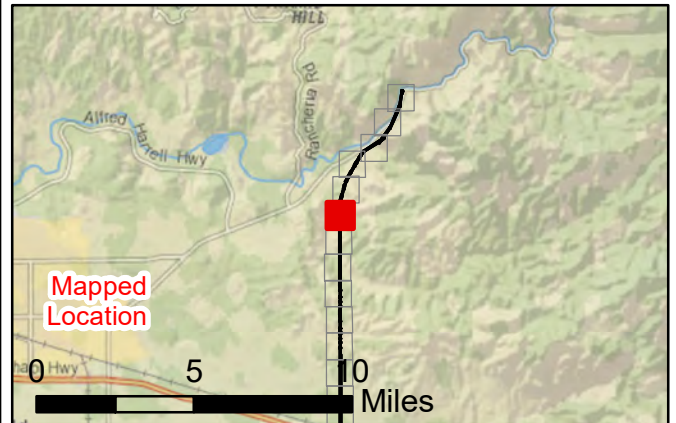
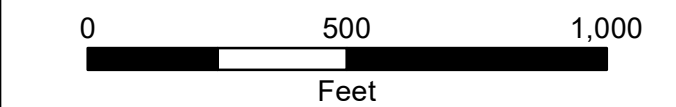
 STRUCTURE LOCATION

 100 FOOT RADIUS TOWER BUFFER

 SUBSTATION LOCATION


 ACCESS ROADS

 SURVEY AREA



GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES



FIGURESET  
6 of 92

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N

**Vegetation Alliances and Associations**

Developed

21

Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance), *Lepidospartum squamatum* / *ephemeral annuals* Association

37

Wild oats and annual brome grasslands (*Avena* spp. – *Bromus* spp. Herbaceous Alliance), *Bromus diandrus* - Mixed herbs Semi-natural Association



IMAGERY SOURCE: ESRI ONLINE



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**LEGEND**

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

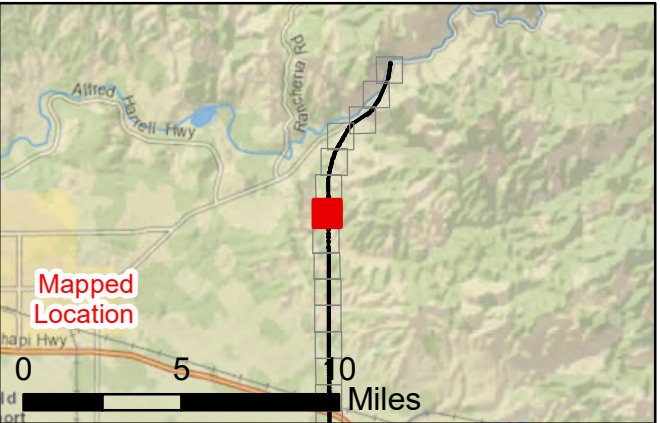
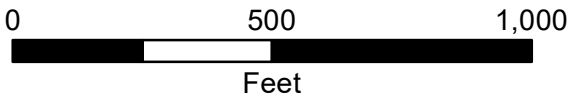
SUBSTATION LOCATION

—

ACCESS ROADS


▭

SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**

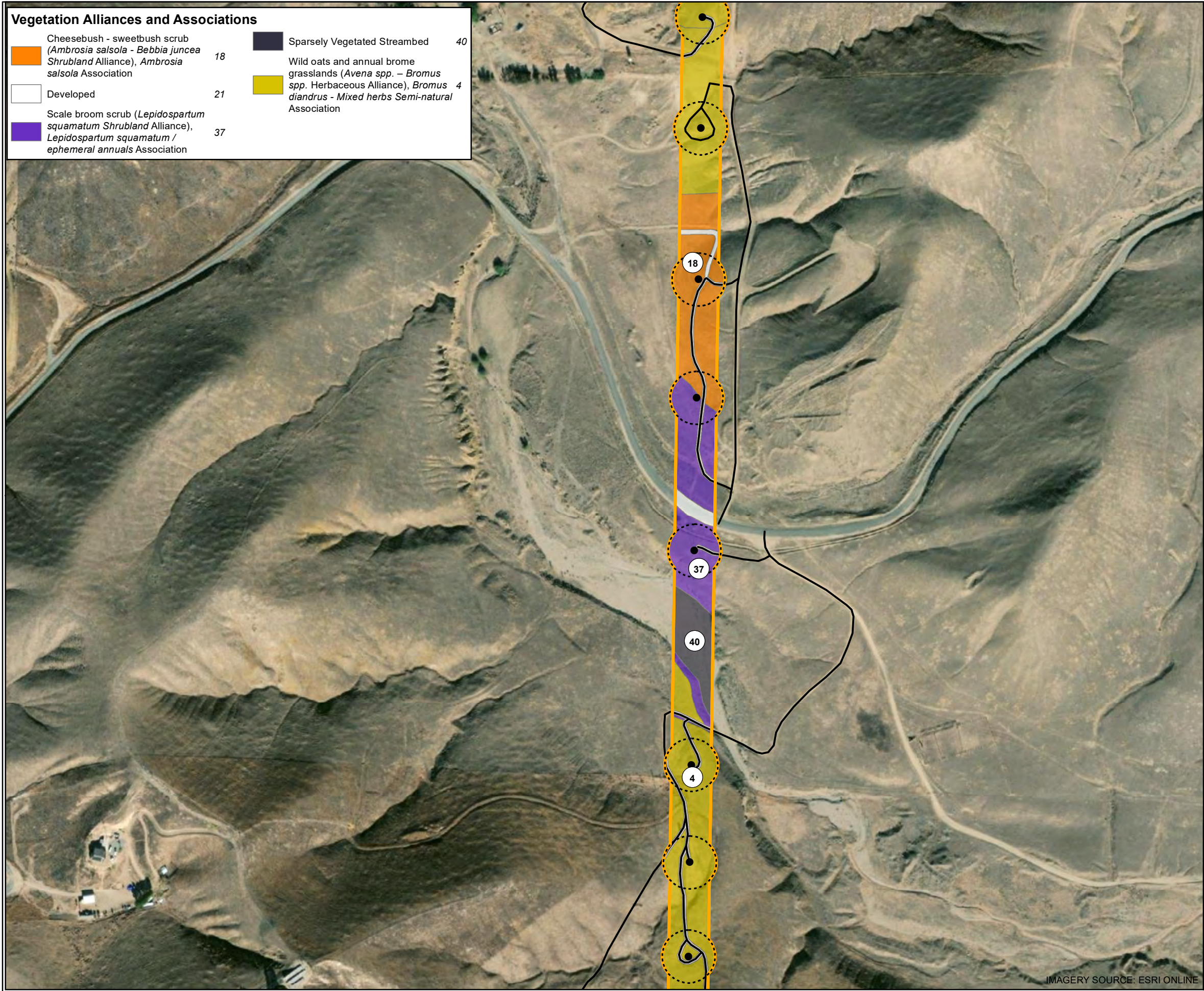


FIGURESET


7 of 92



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Coordinate System: NAD 1983 UTM Zone 11N




Vegetation Alliances and Associations		
<div></div> Cheesebush - sweetbush scrub ( <i>Ambrosia salsola</i> - <i>Bebbia juncea</i> Shrubland Alliance), <i>Ambrosia salsola</i> Association	18	<div></div> Sparsely Vegetated Streambed 40
<div></div> Developed	21	<div></div> Wild oats and annual brome grasslands ( <i>Avena</i> spp. - <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association
<div></div> Scale broom scrub ( <i>Lepidospartum squamatum</i> Shrubland Alliance), <i>Lepidospartum squamatum</i> / <i>ephemeral annuals</i> Association	37	



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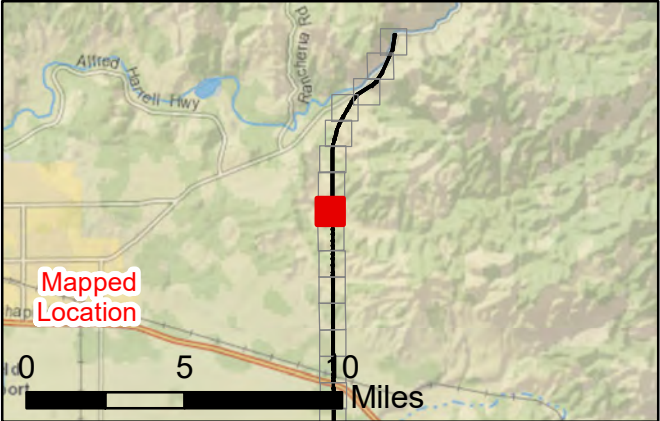


### LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- SURVEY AREA

05001,000


Feet



0510 Miles

GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES



FIGURESET  
8 of 92

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N


Vegetation Alliances and Associations

Developed

21

Wild oats and annual brome grasslands (*Avena* spp. – *Bromus* spp. Herbaceous Alliance), *Bromus diandrus* - Mixed herbs Semi-natural Association


4



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LEGEND

●

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SUBSTATION LOCATION


ACCESS ROADS

SURVEY AREA

GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES



FIGURESET

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IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N

**Vegetation Alliances and Associations**

Developed21

Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance), *Lepidospartum squamatum* / *ephemeral annuals* Association37

Wild oats and annual brome grasslands (*Avena* spp. – *Bromus* spp. Herbaceous Alliance), *Bromus diandrus* - Mixed herbs Semi-natural Association4





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**LEGEND**

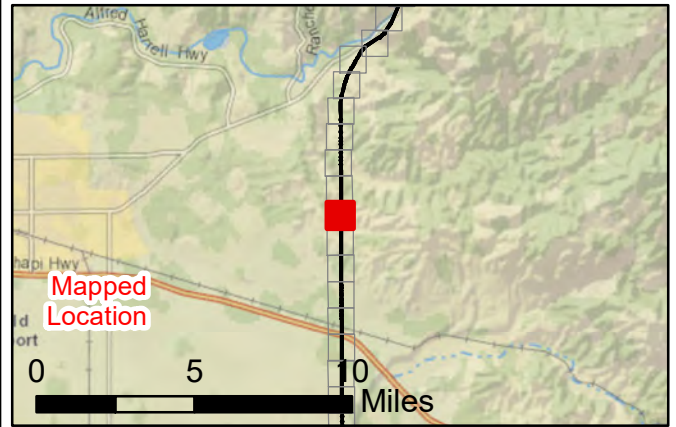
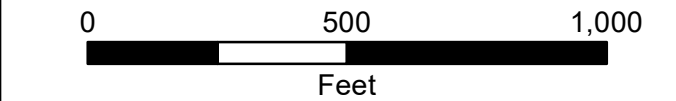
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SUBSTATION LOCATION

ACCESS ROADS


SURVEY AREA



GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

10 of 92

IMAGERY SOURCE: ESRI ONLINE



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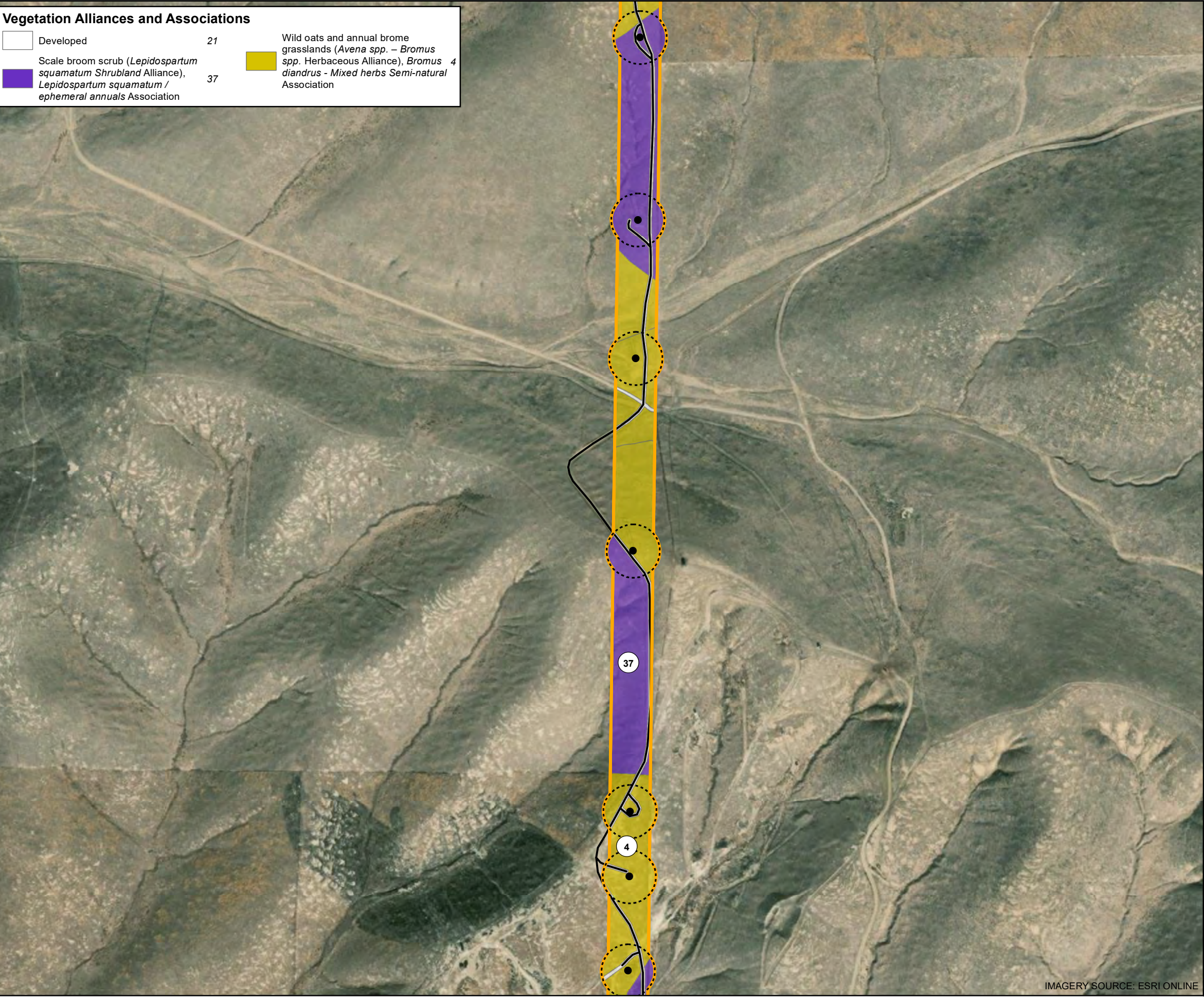
Developed

21

Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance), *Lepidospartum squamatum* / *ephemeral annuals* Association

37

Wild oats and annual brome grasslands (*Avena* spp. – *Bromus* spp. Herbaceous Alliance), *Bromus diandrus* - Mixed herbs Semi-natural Association



IMAGERY SOURCE: ESRI ONLINE



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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

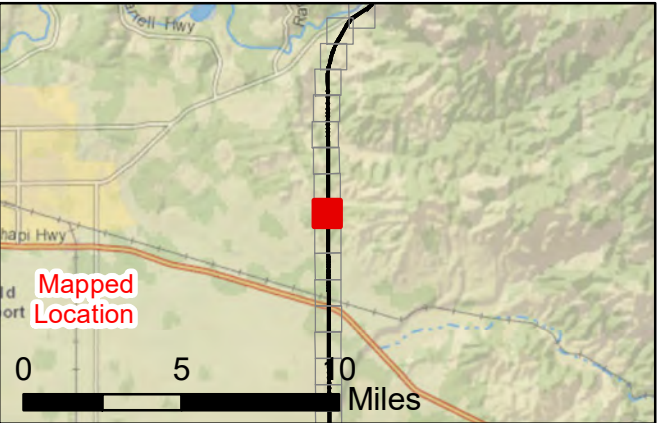
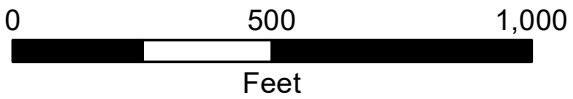
SUBSTATION LOCATION

—

ACCESS ROADS

▭


SURVEY AREA



GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

11 of 92




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Coordinate System: NAD 1983 UTM Zone 11N




**Vegetation Alliances and Associations**

Developed	21	Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association
Scale broom scrub ( <i>Lepidospartum squamatum</i> Shrubland Alliance), <i>Lepidospartum squamatum</i> / ephemeral annuals Association	37	

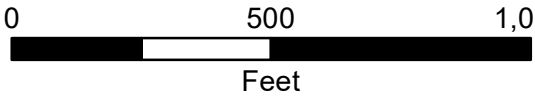


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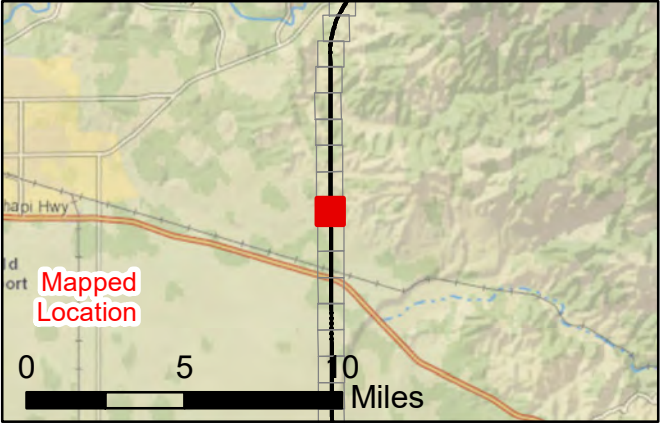


**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA




0 500 1,000  
Feet



0 5 10 Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



**ARCADIS**

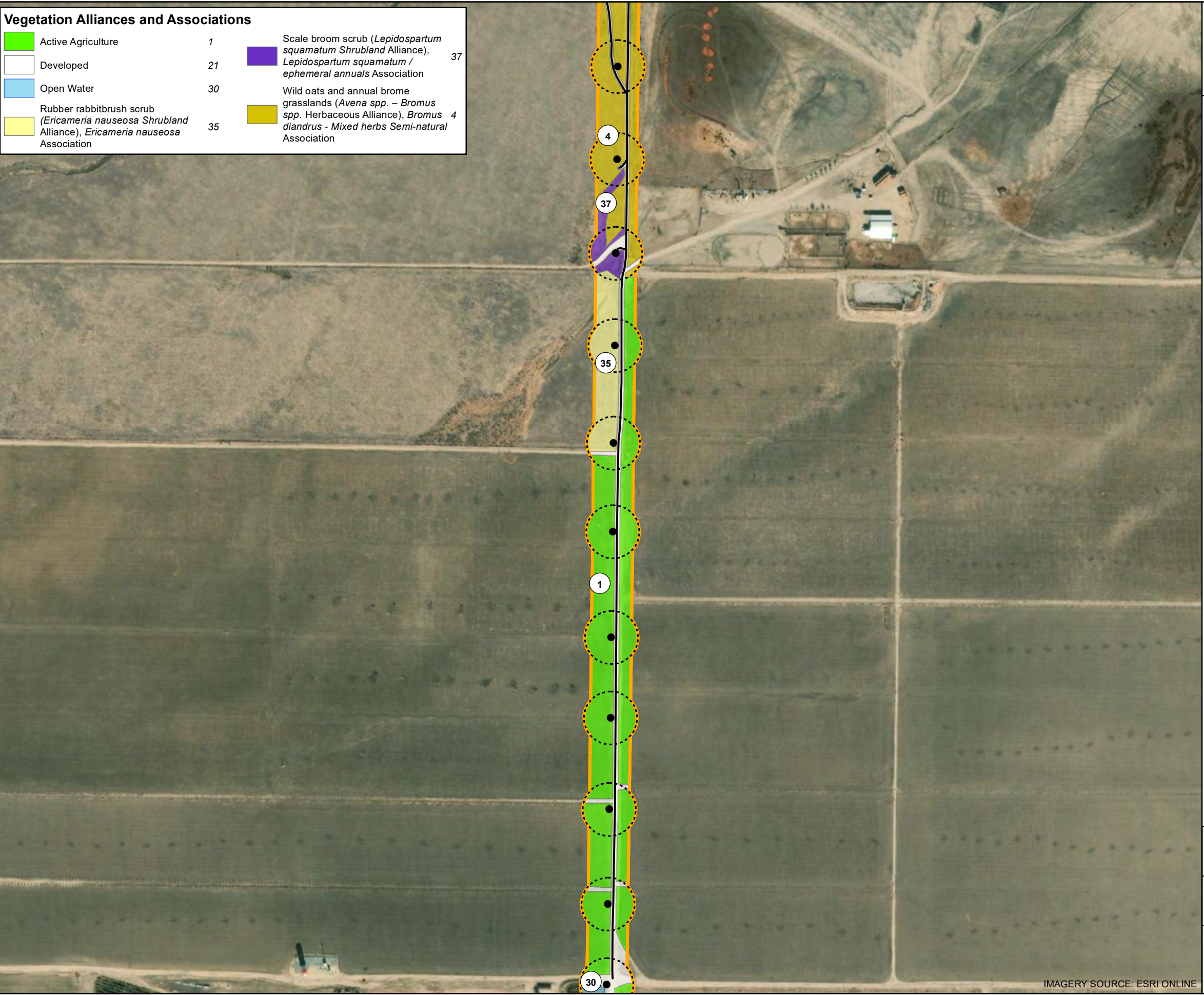
FIGURESET  
12 of 92

IMAGERY SOURCE: ESRI ONLINE

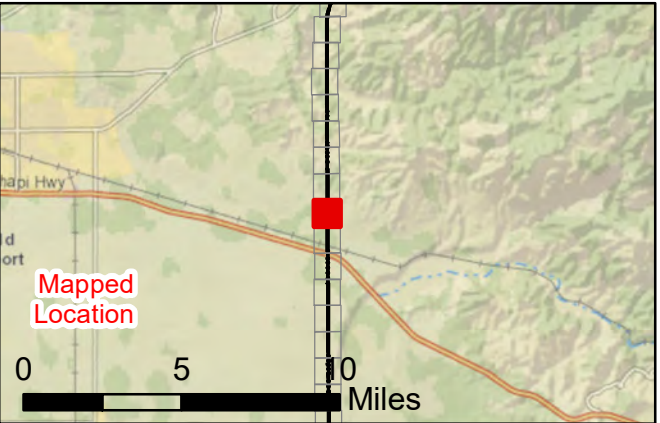
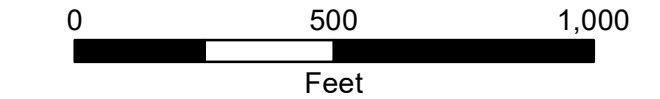


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Coordinate System: NAD 1983 UTM Zone 11N

Vegetation Alliances and Associations			
<div></div>	Active Agriculture	1	
<div></div>	Developed	21	<div></div> Scale broom scrub ( <i>Lepidospartum squamatum</i> Shrubland Alliance), <i>Lepidospartum squamatum</i> / <i>ephemeral annuals</i> Association 37
<div></div>	Open Water	30	
<div></div>	Rubber rabbitbrush scrub ( <i>Ericameria nauseosa</i> Shrubland Alliance), <i>Ericameria nauseosa</i> Association	35	<div></div> Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association 4



- LEGEND**
- STRUCTURE LOCATION
  - 100 FOOT RADIUS TOWER BUFFER
  - SUBSTATION LOCATION
  - ACCESS ROADS
  - ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**

**ARCADIS**

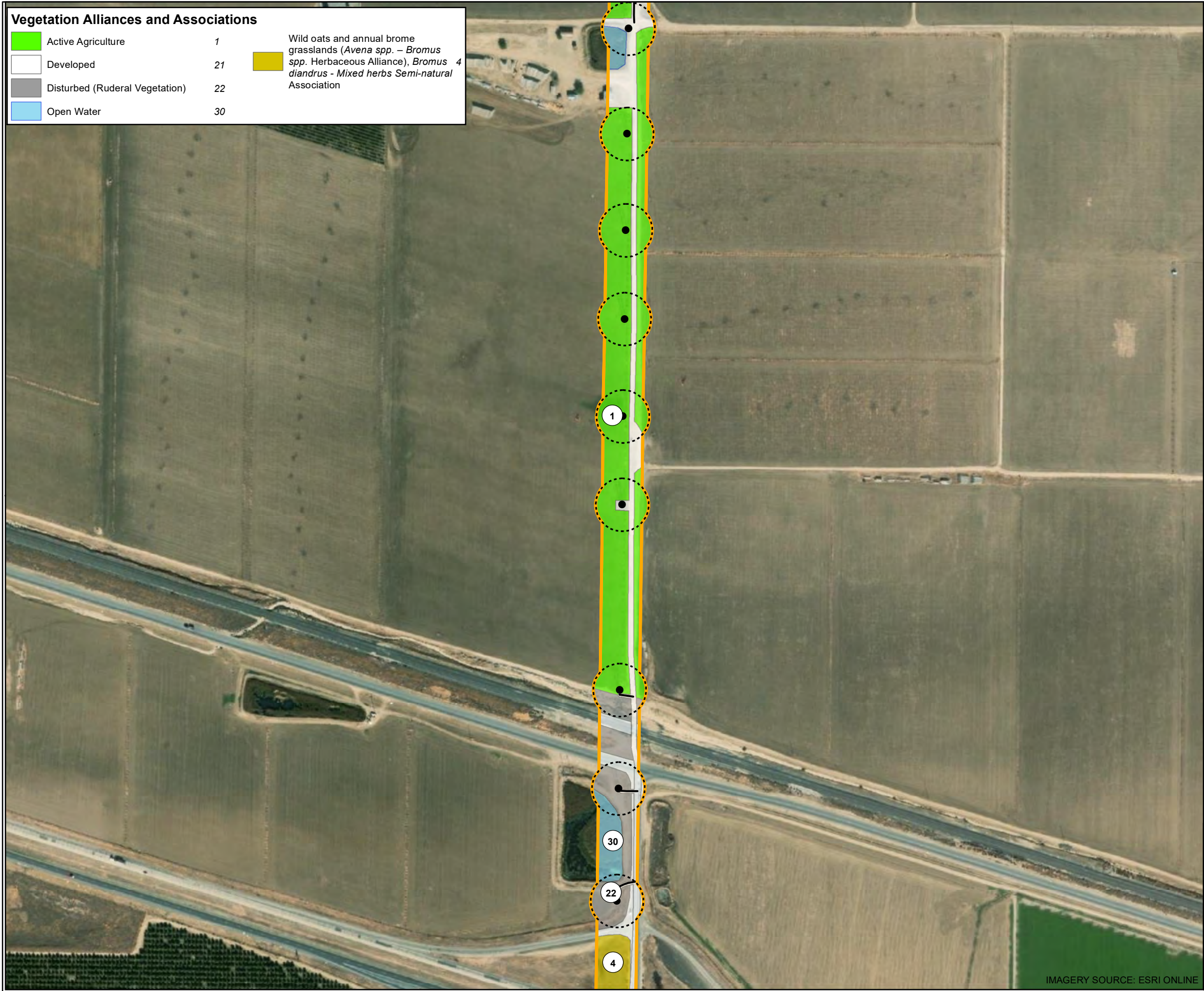
FIGURESET


13 of 92

IMAGERY SOURCE: ESRI ONLINE




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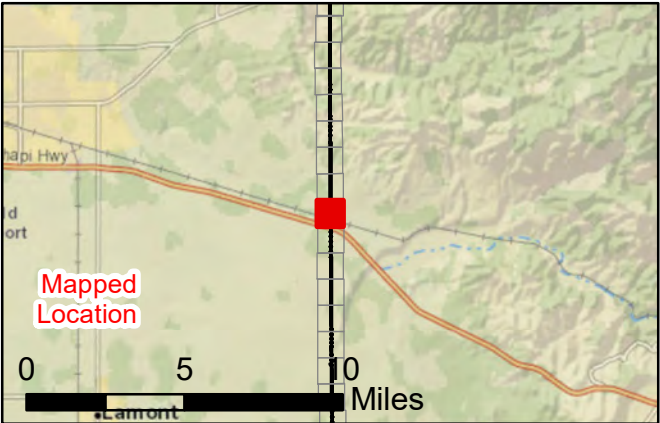


**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA


05001,000

Feet



**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



**ARCADIS**

FIGURESET

14 of 92

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N

Developed

21

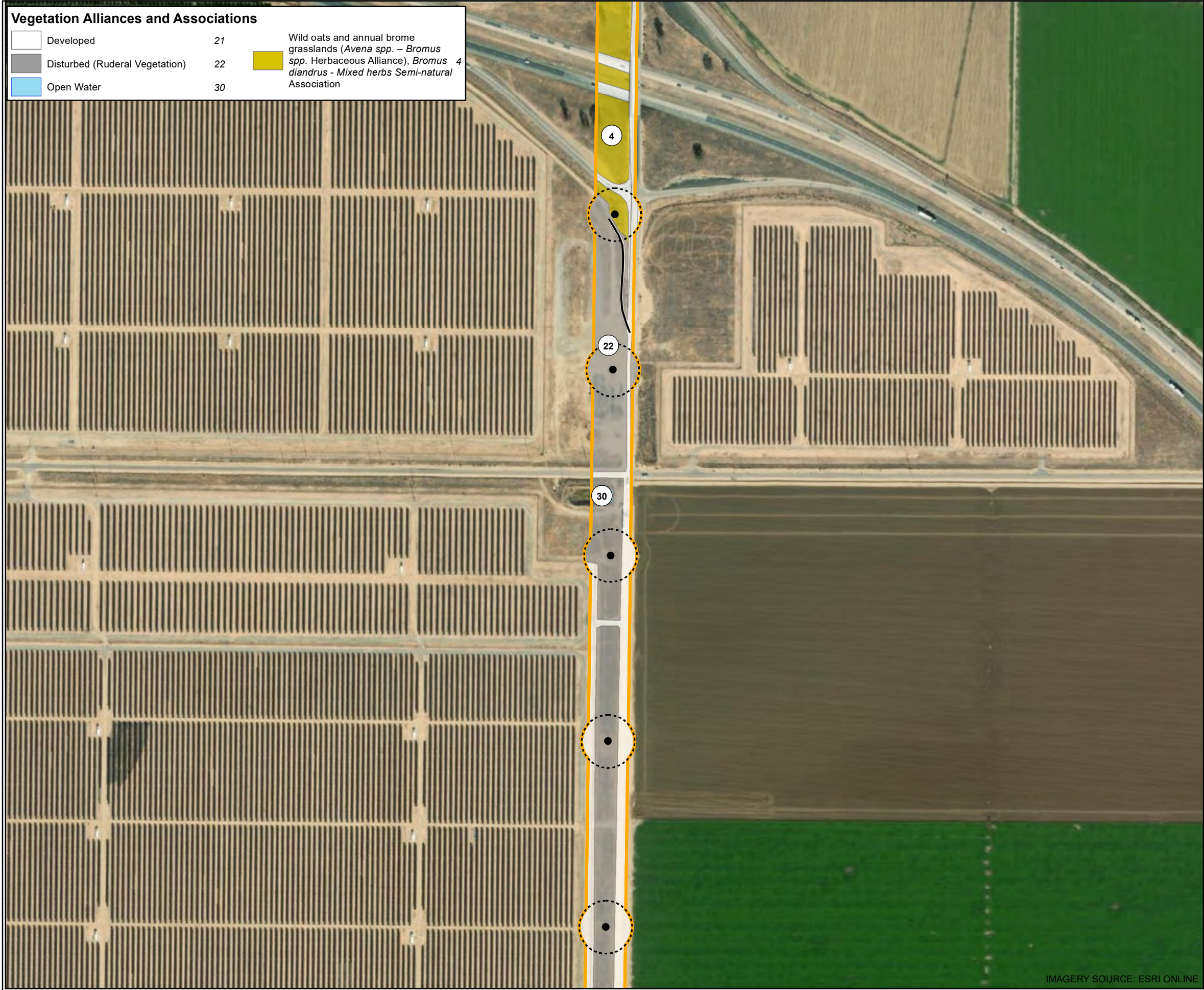
Disturbed (Ruderal Vegetation)

22

Open Water

30

Wild oats and annual brome grasslands (*Avena* spp. – *Bromus* spp. Herbaceous Alliance), *Bromus diandrus* - Mixed herbs Semi-natural Association





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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

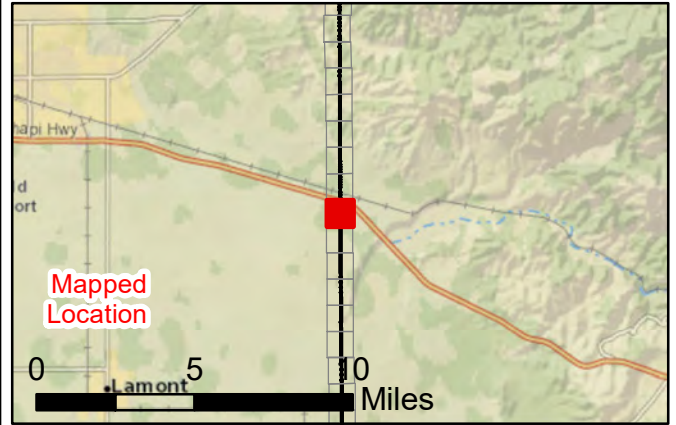
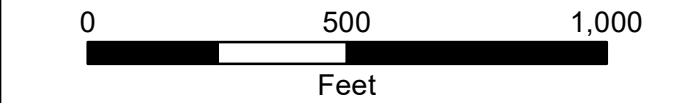
SUBSTATION LOCATION

—

ACCESS ROADS

□


SURVEY AREA



GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES

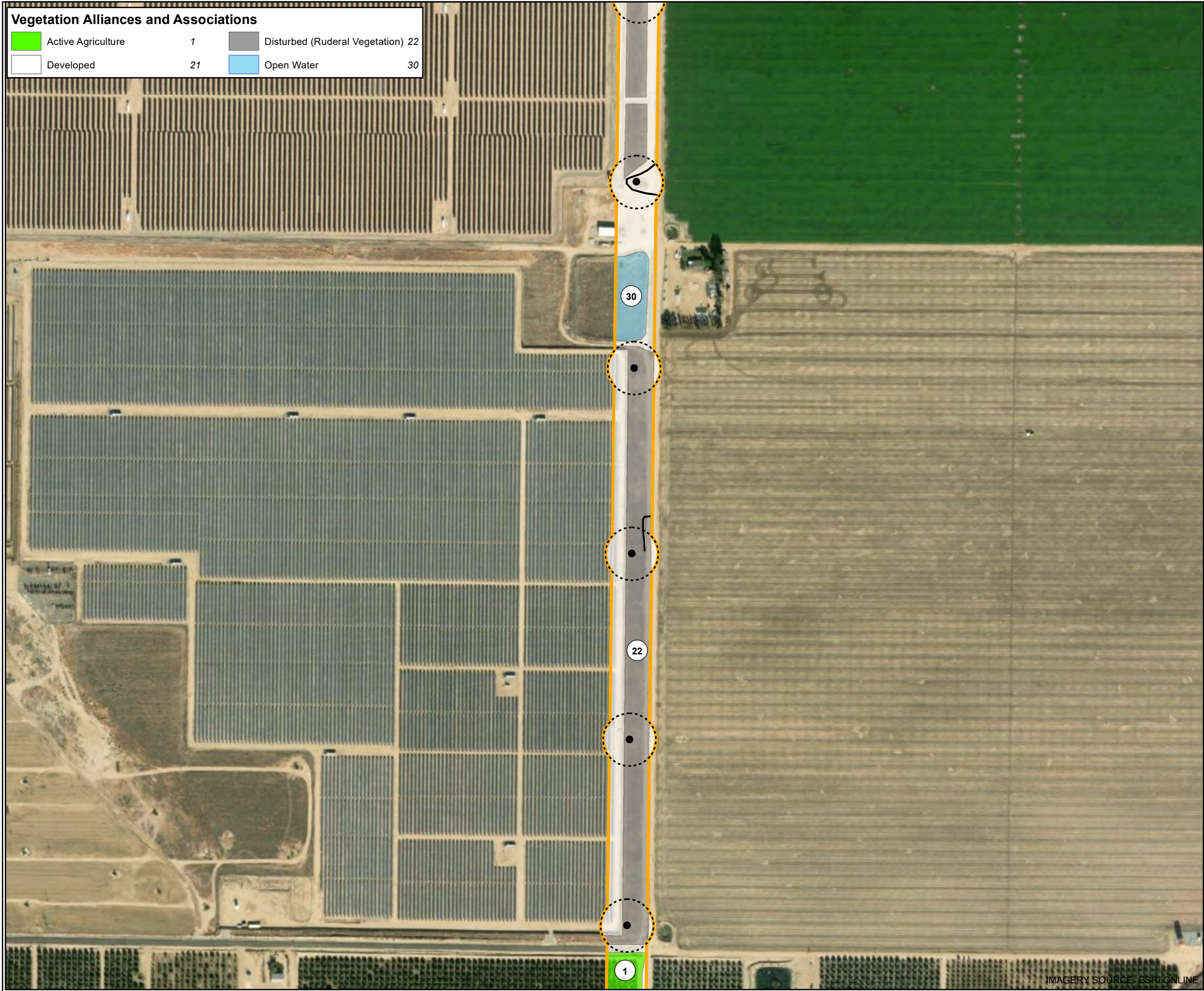
ARCADIS





FIGURESET  
15 of 92


IMAGERY SOURCE: ESRI ONLINE




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Coordinate System: NAD 1983 UTM Zone 11N



Vegetation Alliances and Associations			
	Active Agriculture	1	 Disturbed (Ruderal Vegetation) 22
	Developed	21	 Open Water 30



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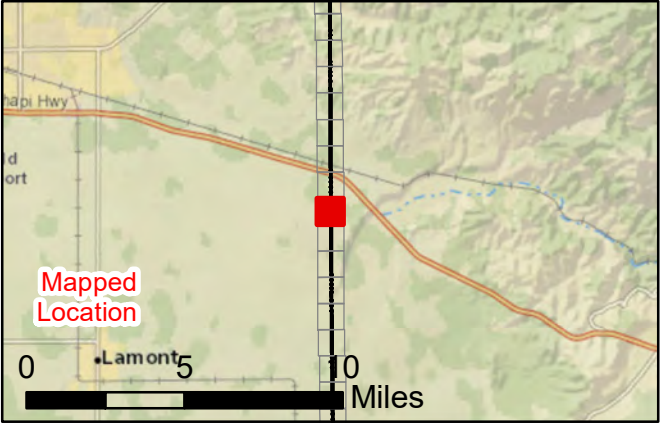


**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

05001,000

Feet




Mapped Location

0510 Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



**ARCADIS**

FIGURESET

16 of 92

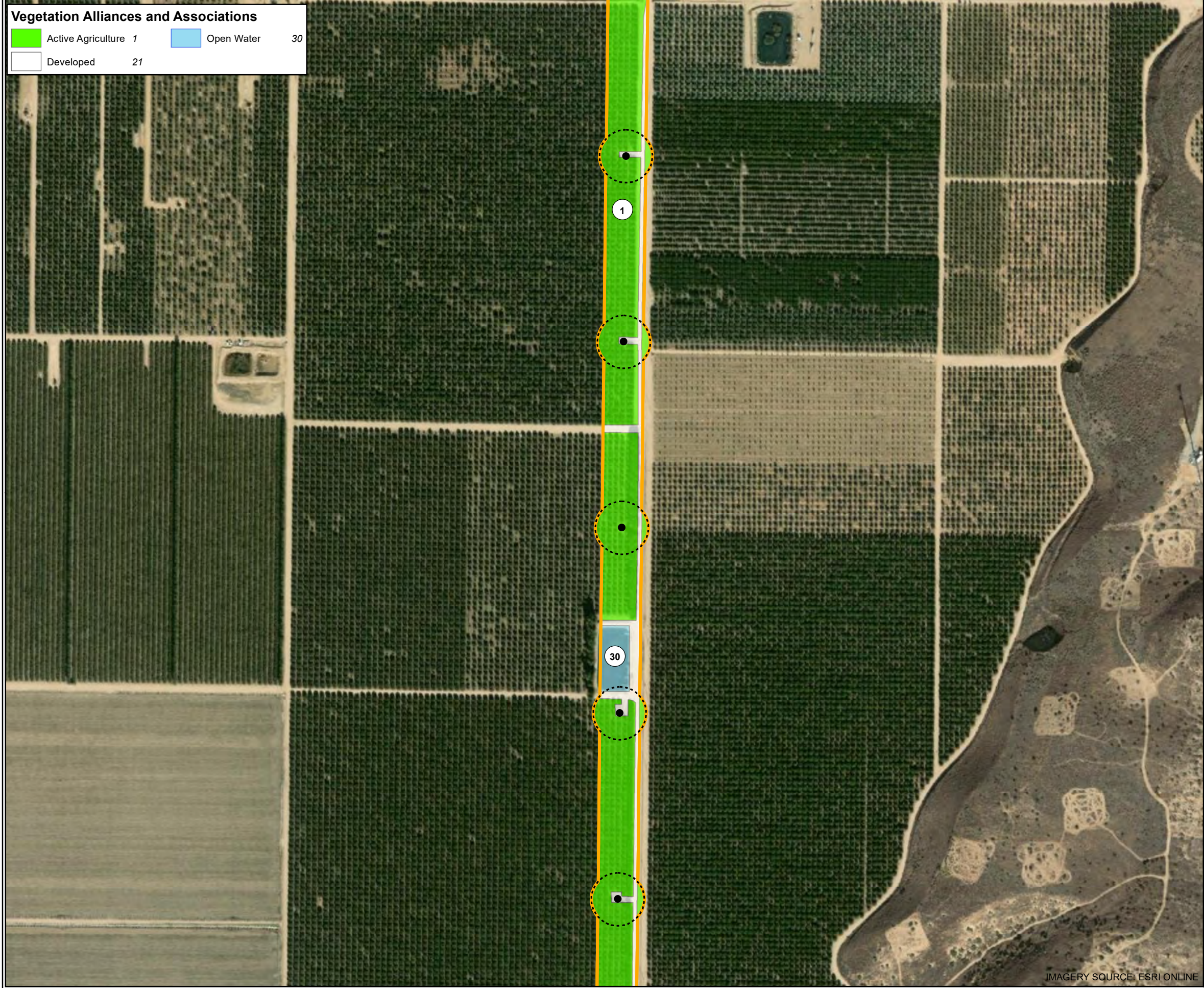
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Coordinate System: NAD 1983 UTM Zone 11N

Vegetation Alliances and Associations

Active Agriculture	1	Open Water	30
Developed	21		



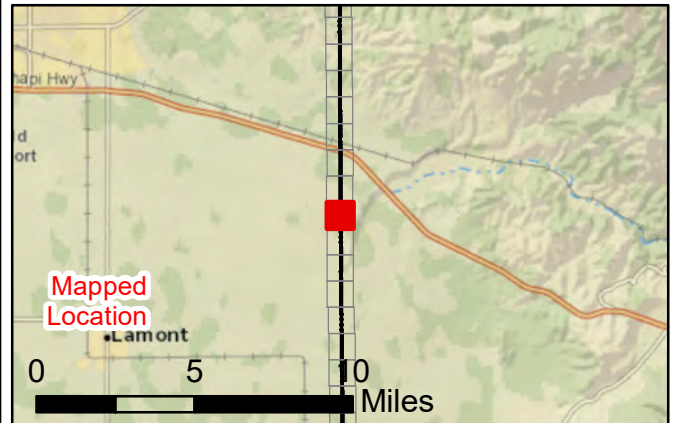
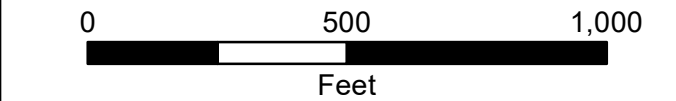


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LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES



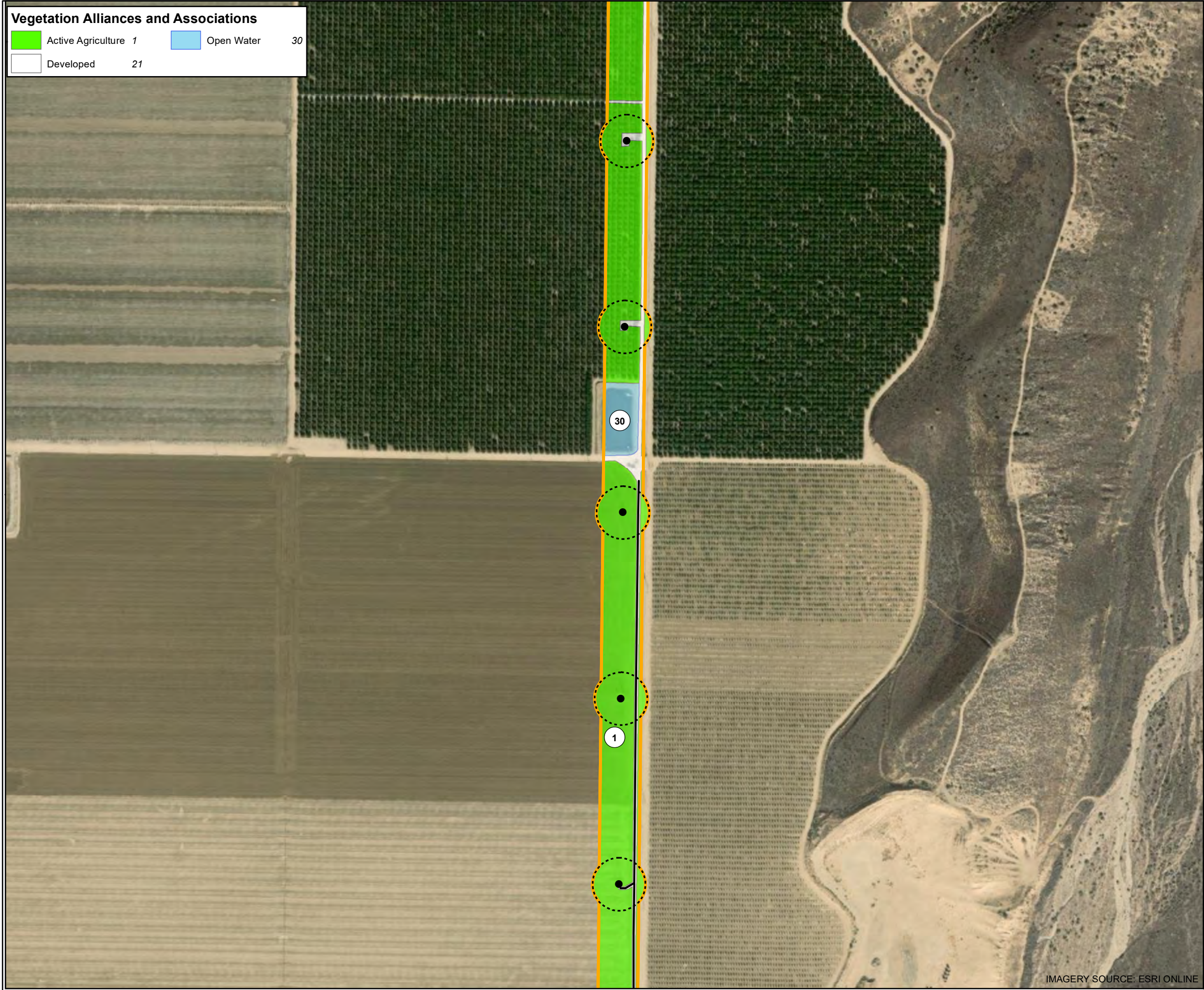
FIGURESET  
17 of 92

IMAGERY SOURCE: ESRI ONLINE



Vegetation Alliances and Associations

Active Agriculture	1	Open Water	30
Developed	21		



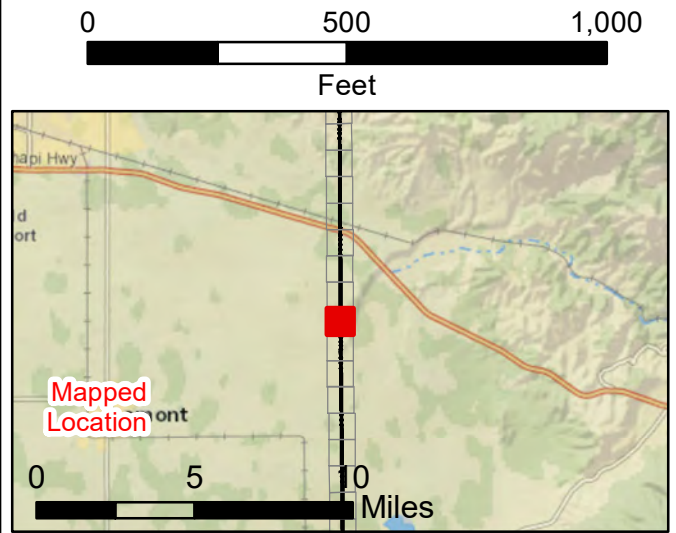


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LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



GORMAN-KERN RIVER  
66 kV PROJECT

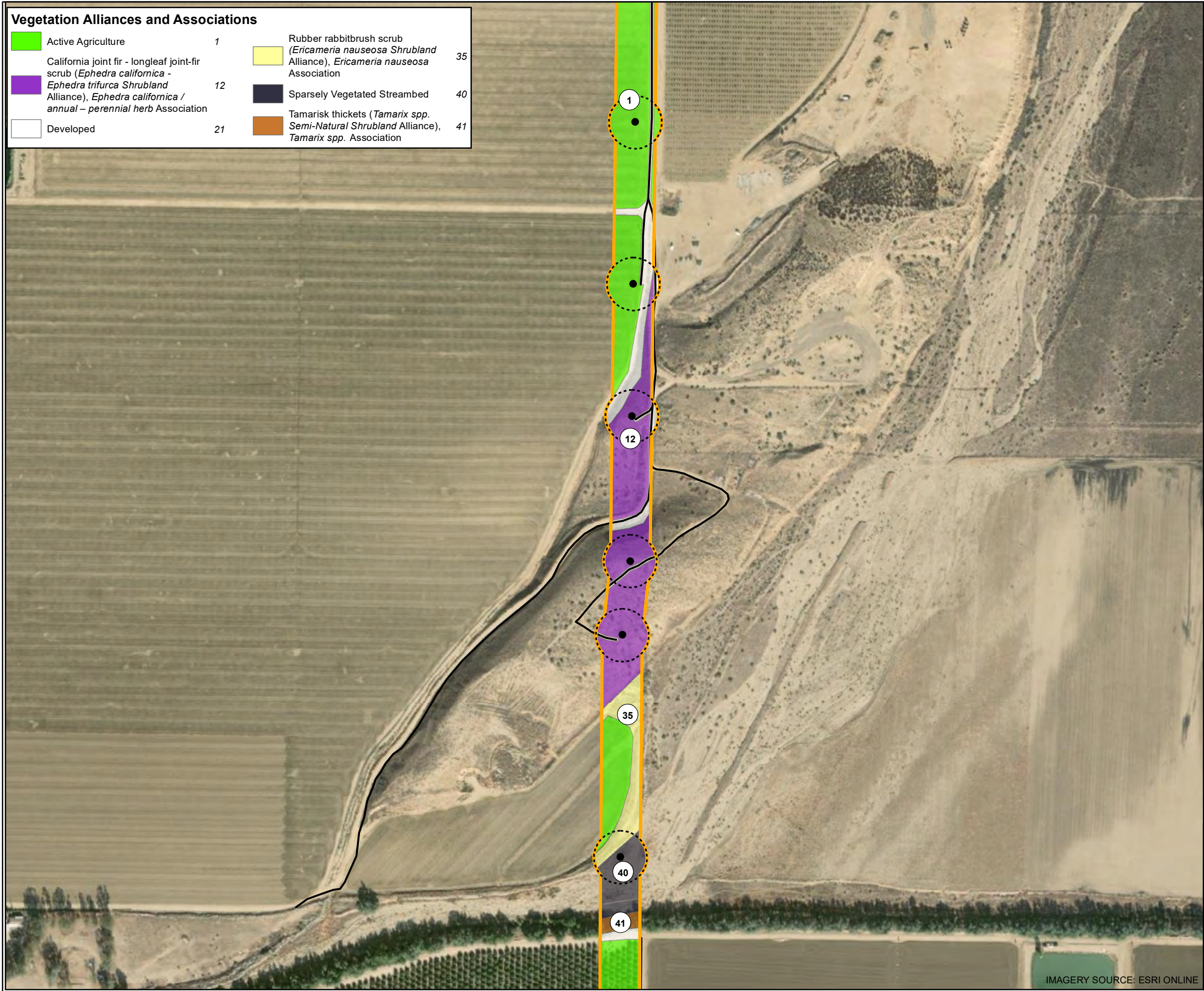
NATURAL COMMUNITIES




FIGURESET  
18 of 92




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Coordinate System: NAD 1983 UTM Zone 11N





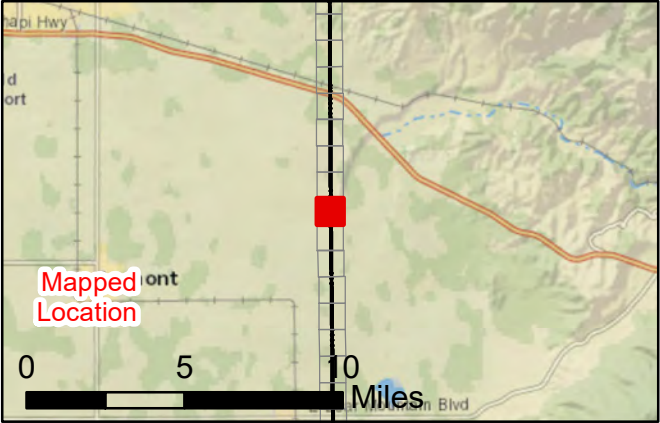
SOUTHERN CALIFORNIA  
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An EDISON INTERNATIONAL<sup>®</sup> Company



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA


0 500 1,000  
Feet



0 5 10  
Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**

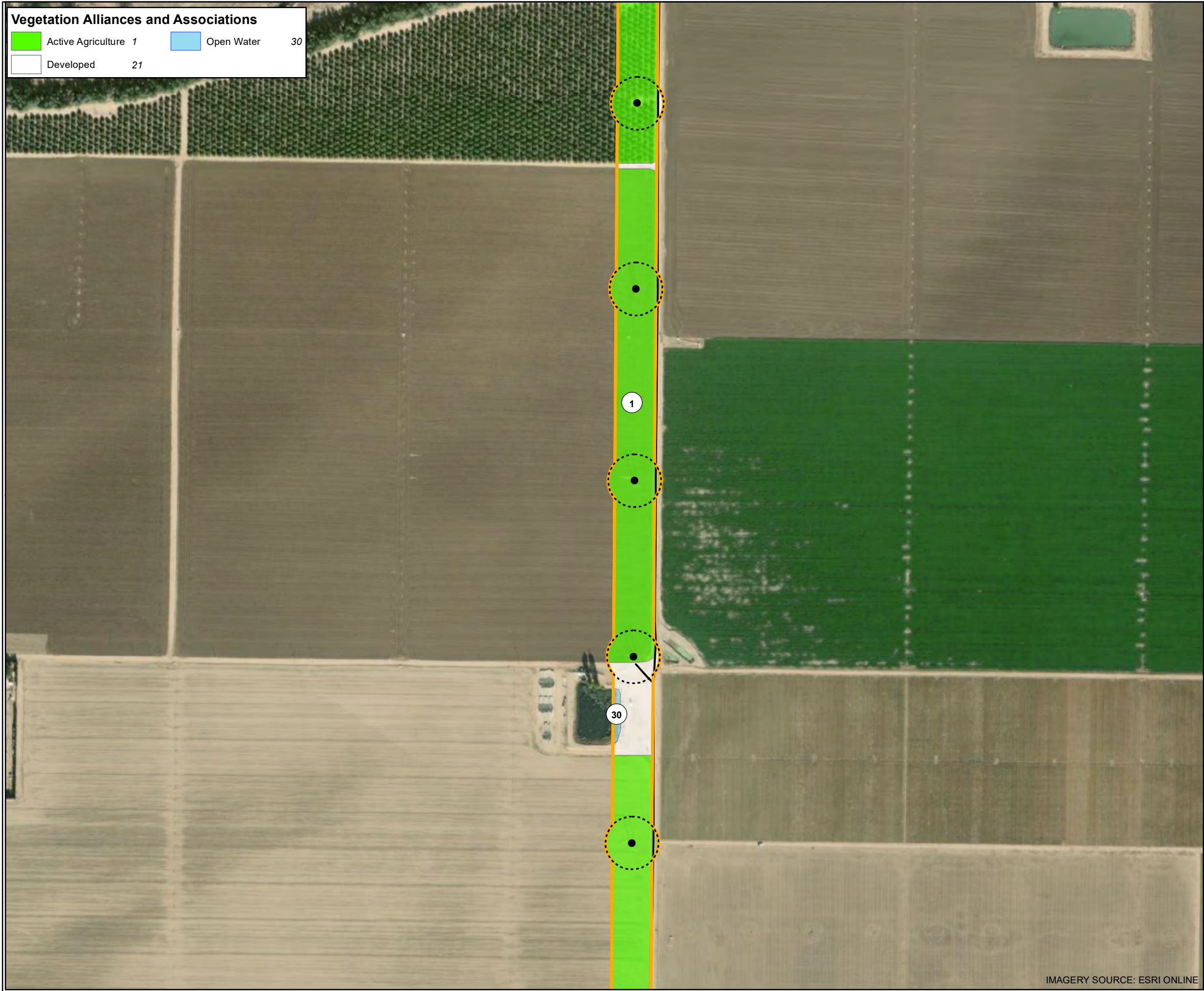


FIGURESET  
19 of 92

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N



Vegetation Alliances and Associations		
<div></div> Active Agriculture	1	<div></div> Open Water 30
<div></div> Developed	21	



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LEGEND

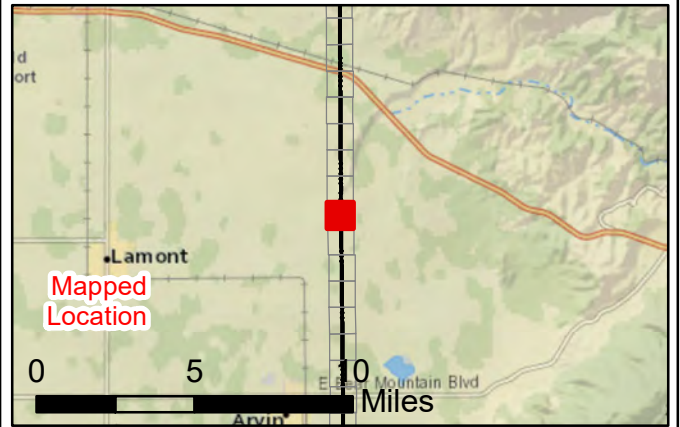
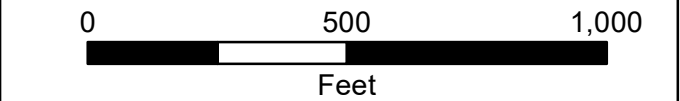
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SUBSTATION LOCATION


ACCESS ROADS

SURVEY AREA



GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES



FIGURESET  
20 of 92

IMAGERY SOURCE: ESRI ONLINE



\\corparc\gis\Data\ArcGisData\GISPROJECTS\ENV T\ENVISCE\SOE\_TLLR\ArcGIS\_Desktop\KERN\TLLR Kern Figure 3 Natural Communities Mapbook.mxd 9/28/2021 mg01044  
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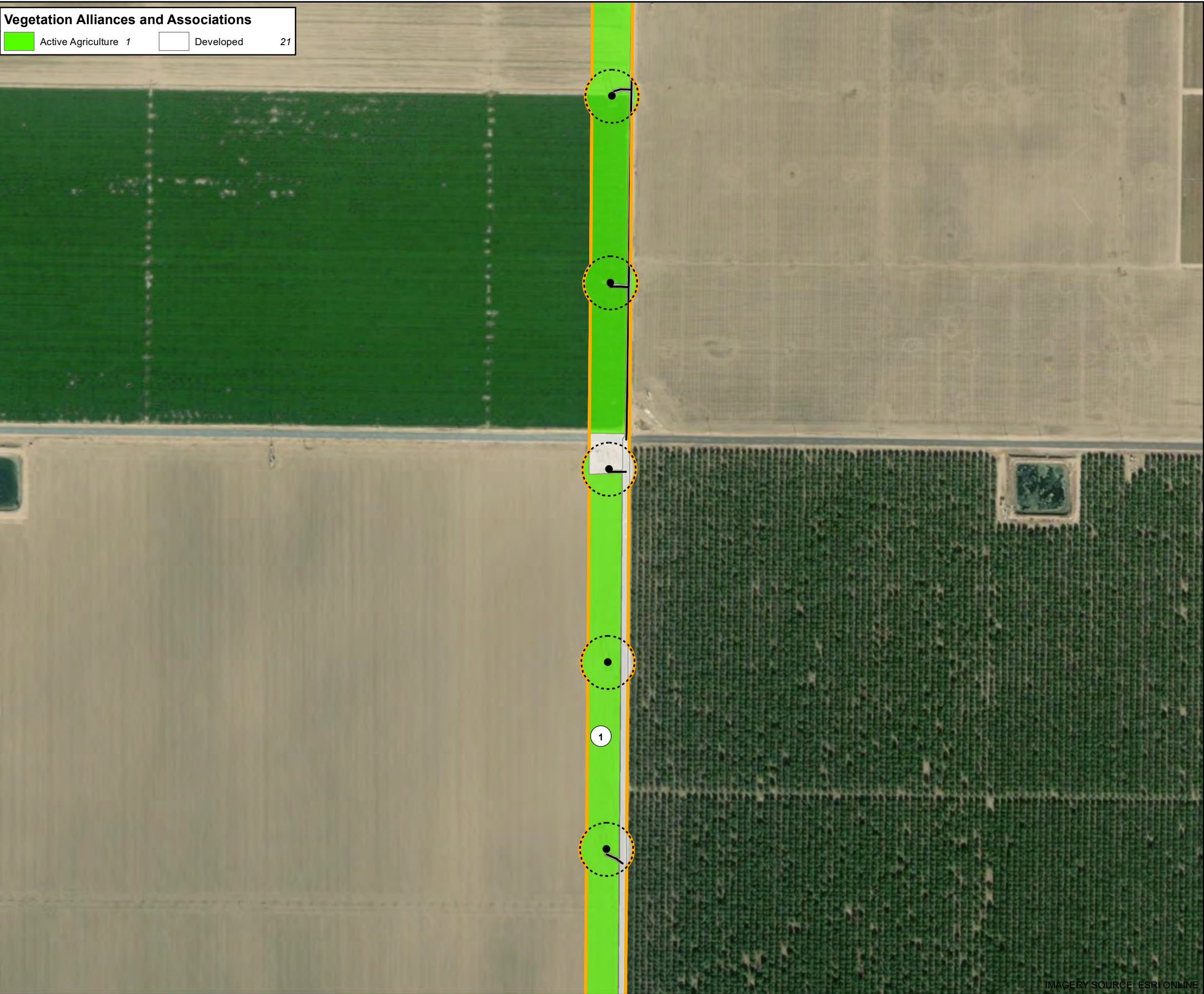
Vegetation Alliances and Associations

Active Agriculture

1

Developed

21





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LEGEND

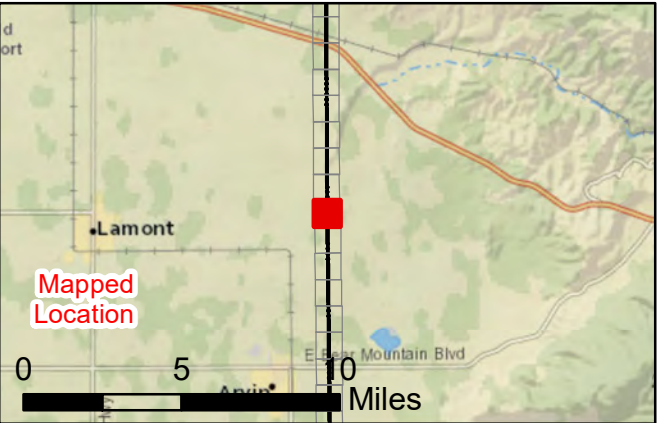
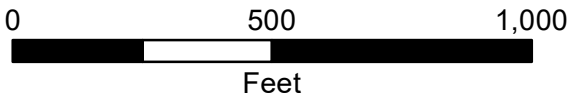
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SUBSTATION LOCATION

ACCESS ROADS


SURVEY AREA



GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES



FIGURESET

21 of 92

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N

Vegetation Alliances and Associations

Active Agriculture

1

Developed

21





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LEGEND

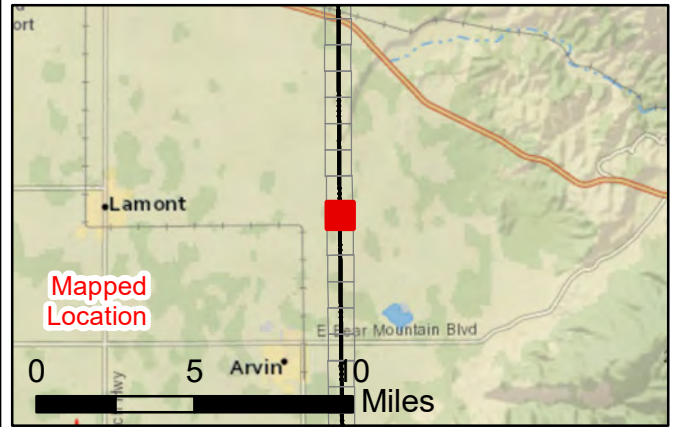
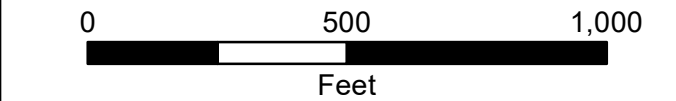
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SUBSTATION LOCATION


ACCESS ROADS

SURVEY AREA



GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET  
22 of 92

IMAGERY SOURCE: ESRI ONLINE



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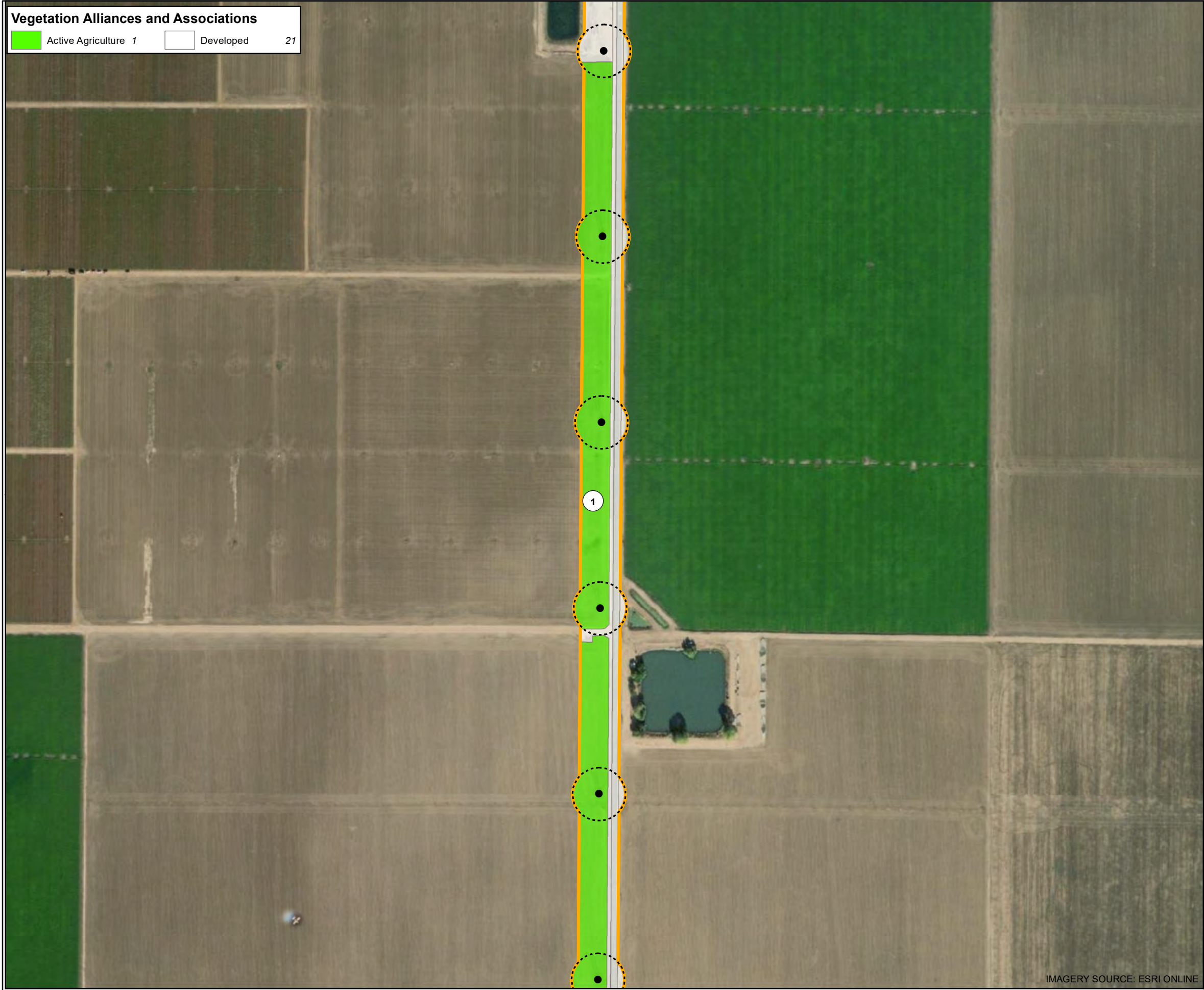
Vegetation Alliances and Associations


Active Agriculture

1

Developed


21





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LEGEND

●

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

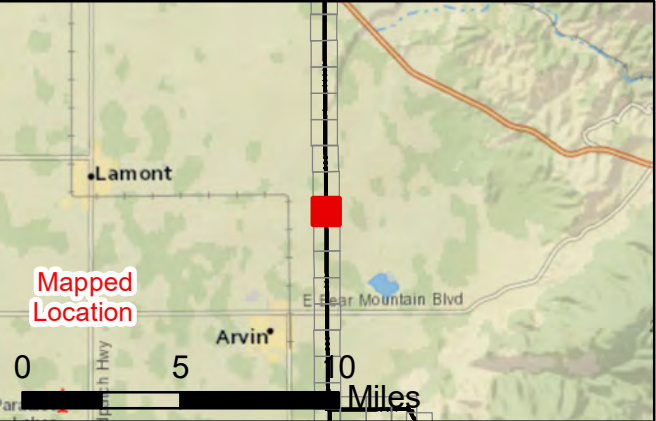
SUBSTATION LOCATION

ACCESS ROADS

SURVEY AREA

05001,000

Feet




0510

Miles

GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

23 of 92



\\corparc\gis\Data\GISData\GISPROJECTS\ENV T\ENVISCE\SOE\_TLLR\ArcGIS\_Desktop\KERN\NTLLR Kern Figure 3 Natural Communities Mapbook.mxd 9/28/2021 mg01044  
Coordinate System: NAD 1983 UTM Zone 11N

Vegetation Alliances and Associations

Active Agriculture

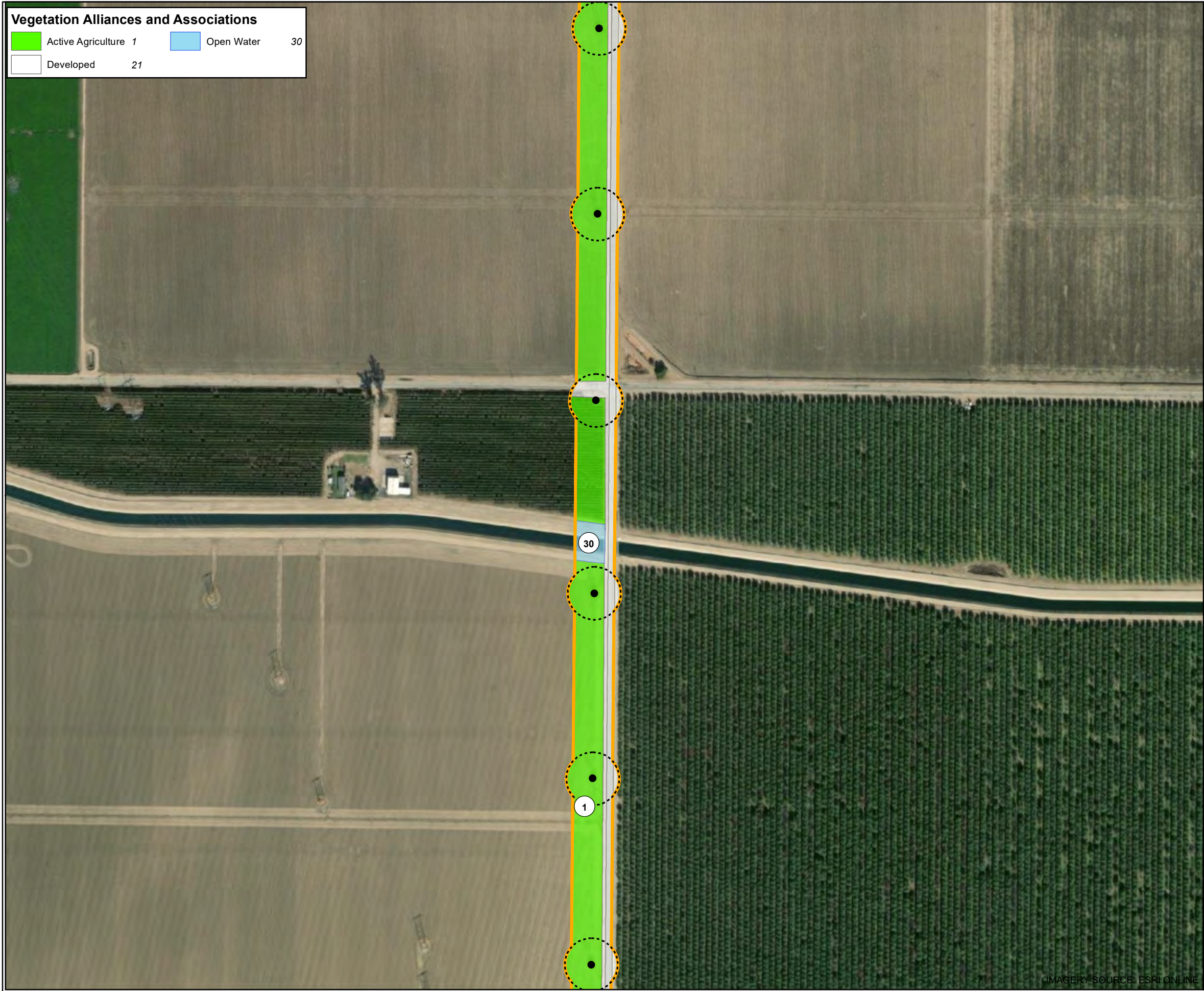
1


Open Water

30

Developed


21





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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

SUBSTATION LOCATION

—

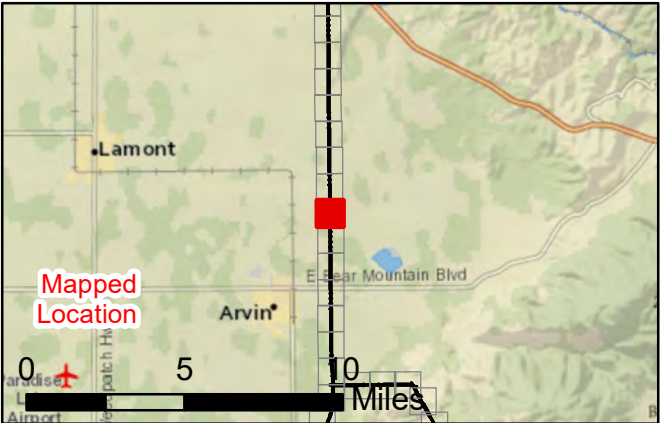
ACCESS ROADS

▭

SURVEY AREA

05001,000


Feet



Mapped Location

GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET  
24 of 92



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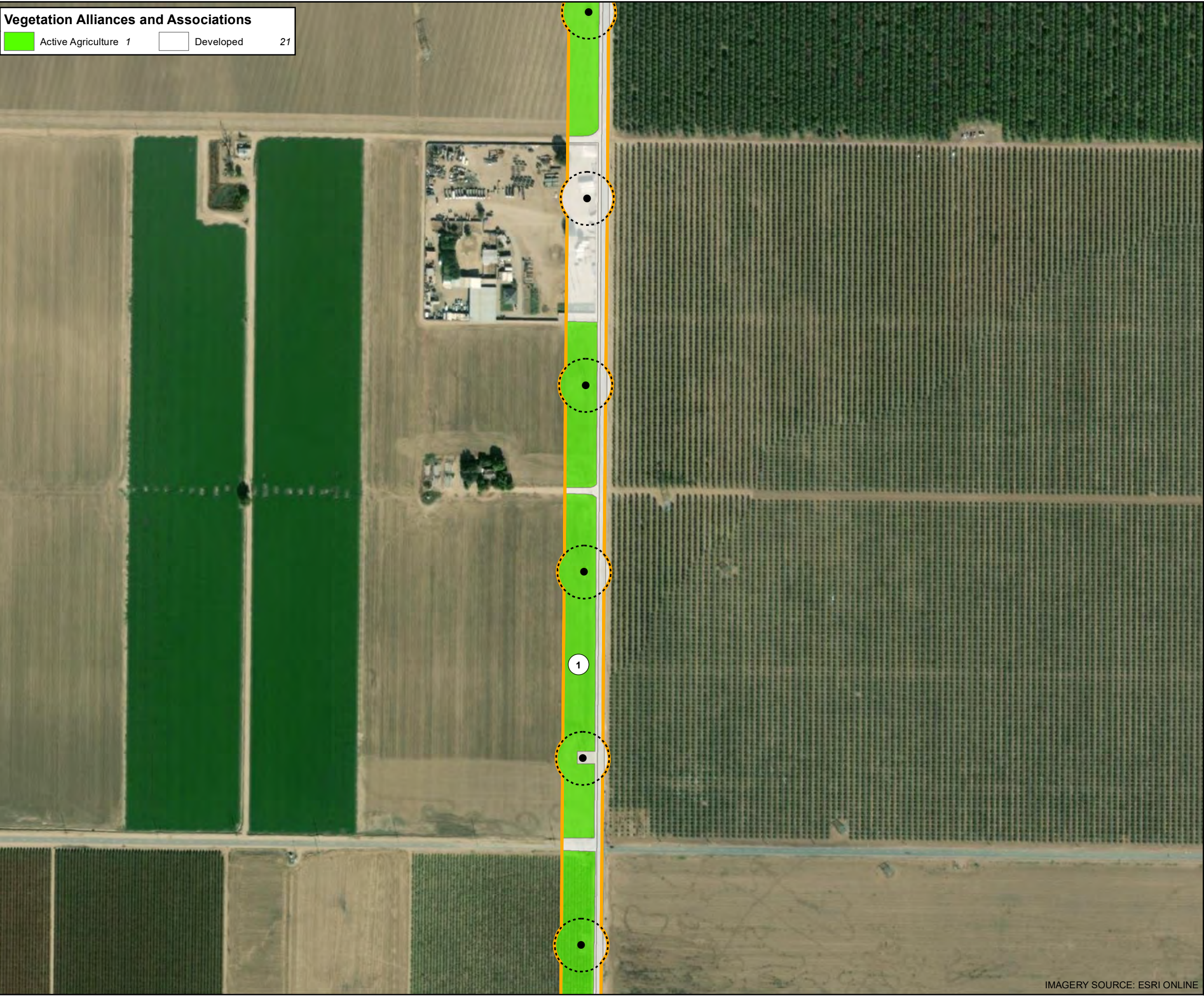
Vegetation Alliances and Associations


Active Agriculture

1

Developed


21





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LEGEND

●

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

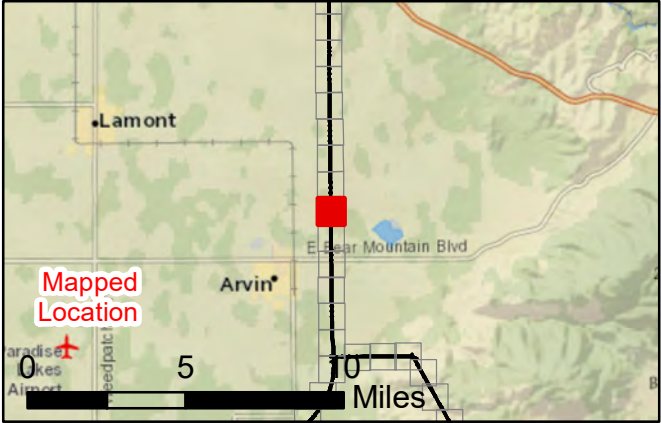
SUBSTATION LOCATION

ACCESS ROADS

SURVEY AREA


05001,000

Feet



GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

25 of 92

IMAGERY SOURCE: ESRI ONLINE



\\corparcglis\Data\ArcGisData\GISPROJECTS\ENV T\1\_ENV\SCV\SOE\_T\TLLR\ArcGIS\_Desktop\KERN\NTLLR Kern Figure 3 Natural Communities Mapbook.mxd 9/28/2021 mg01044  
Coordinate System: NAD 1983 UTM Zone 11N

Vegetation Alliances and Associations

Active Agriculture


1

Disturbed (Ruderal Vegetation)

22


Developed

21



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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

SUBSTATION LOCATION

—

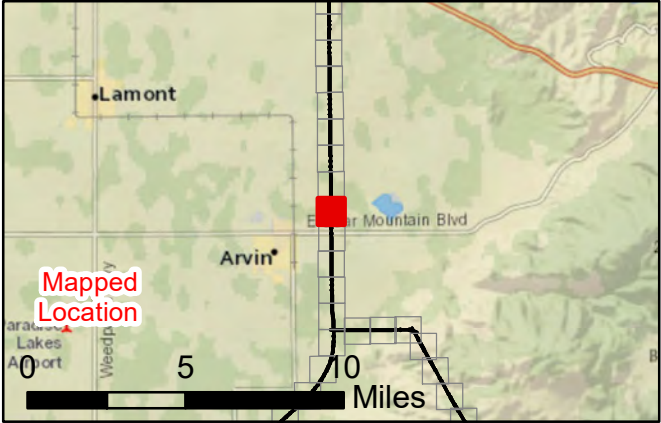
ACCESS ROADS

▭

SURVEY AREA

05001,000


Feet



0510Miles

GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

26 of 92

IMAGERY SOURCE: ESRI ONLINE



Vegetation Alliances and Associations

Active Agriculture

1

Developed

21



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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

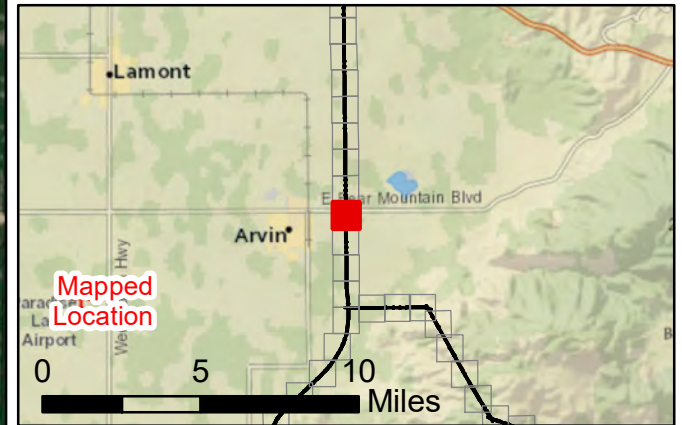
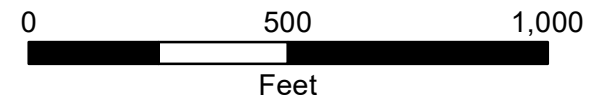
SUBSTATION LOCATION

—

ACCESS ROADS

▭


SURVEY AREA



GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES



FIGURESET

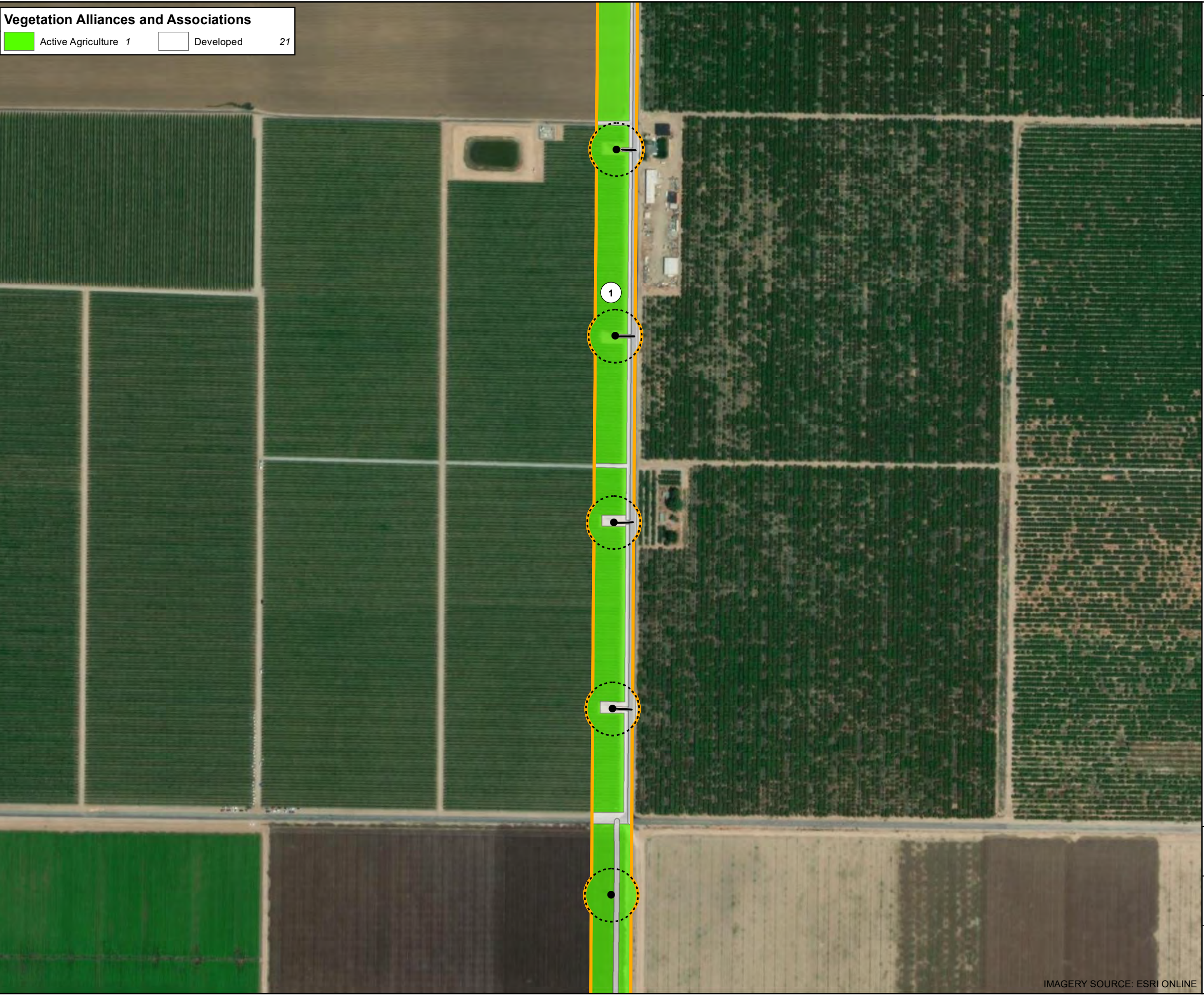
27 of 92



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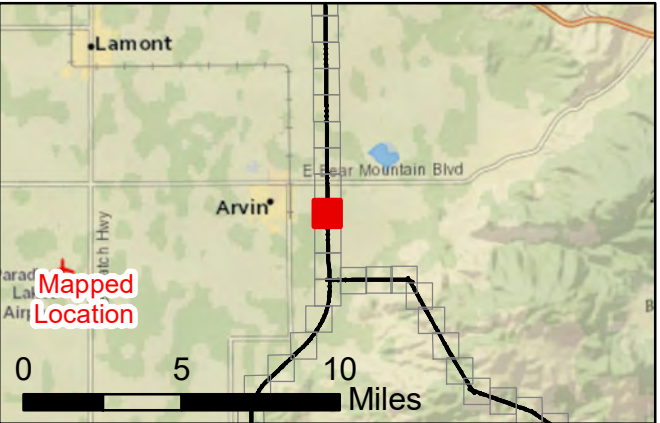
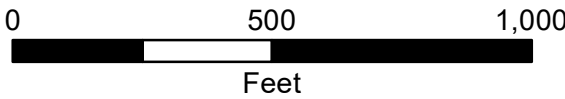
**Vegetation Alliances and Associations**

Active Agriculture 1      Developed 21



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



FIGURESET  
28 of 92

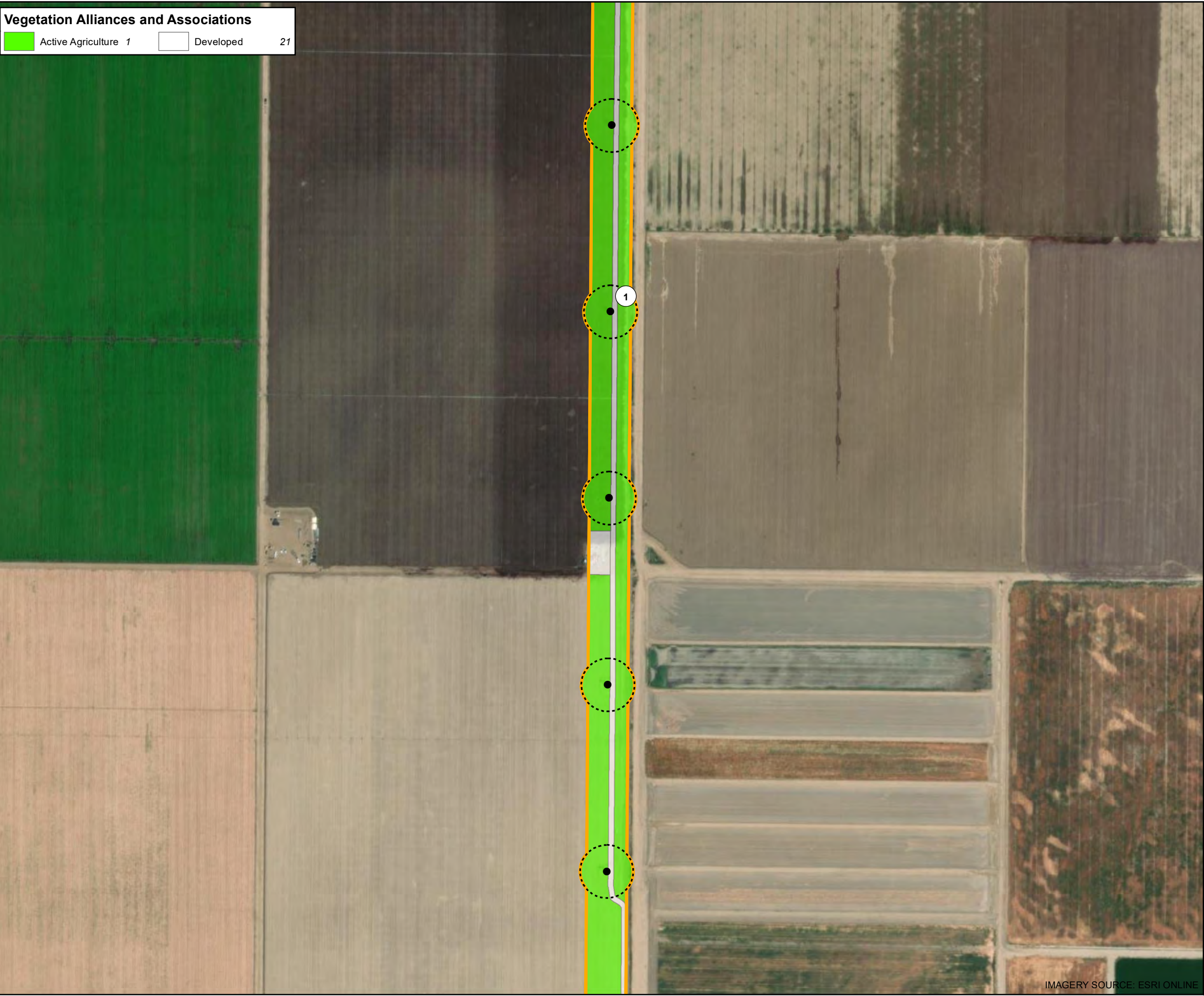
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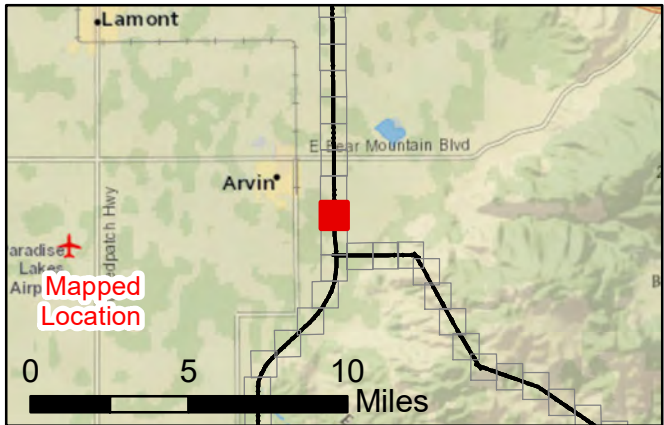
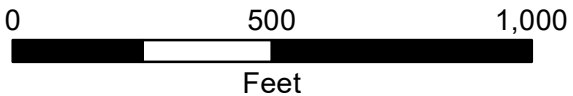
Vegetation Alliances and Associations

Active Agriculture 1      Developed 21



LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES



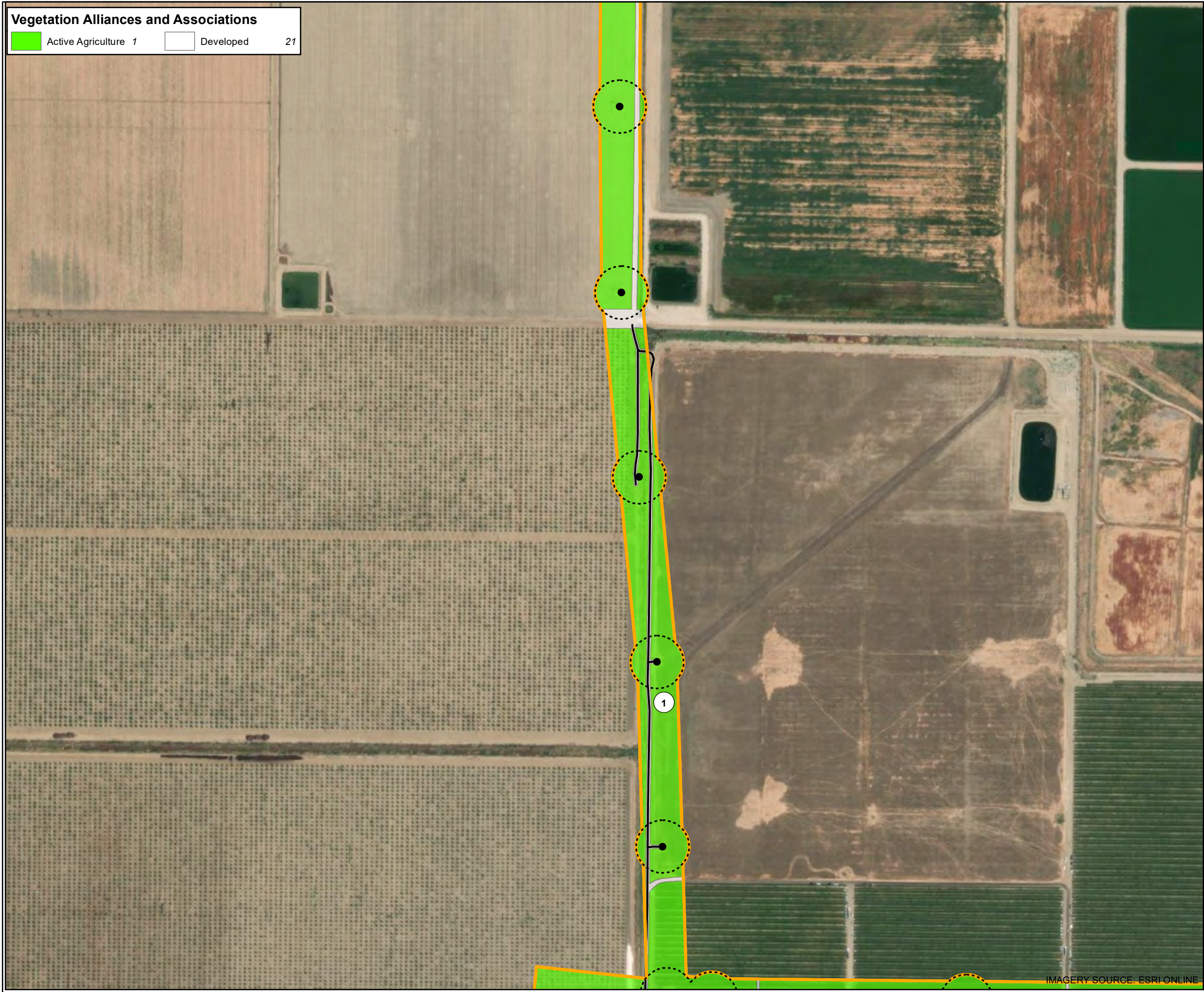
FIGURESET


29 of 92

IMAGERY SOURCE: ESRI ONLINE




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Coordinate System: NAD 1983 UTM Zone 11N





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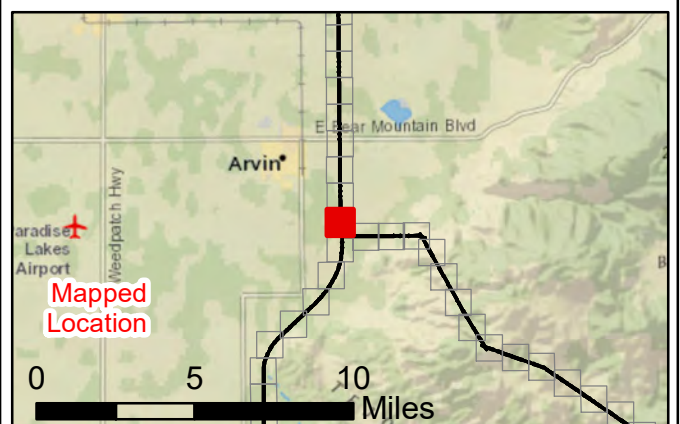


**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

05001,000


Feet



0510Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



**ARCADIS**

FIGURESET

30 of 92

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N

Vegetation Alliances and Associations

Active Agriculture


1

Developed


21

Wild oats and annual brome grasslands (*Avena* spp. – *Bromus* spp. Herbaceous Alliance), *Bromus diandrus* - Mixed herbs Semi-natural Association

4



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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

SUBSTATION LOCATION

—


ACCESS ROADS

▭

SURVEY AREA

GORMAN-KERN RIVER  
66 kV PROJECT

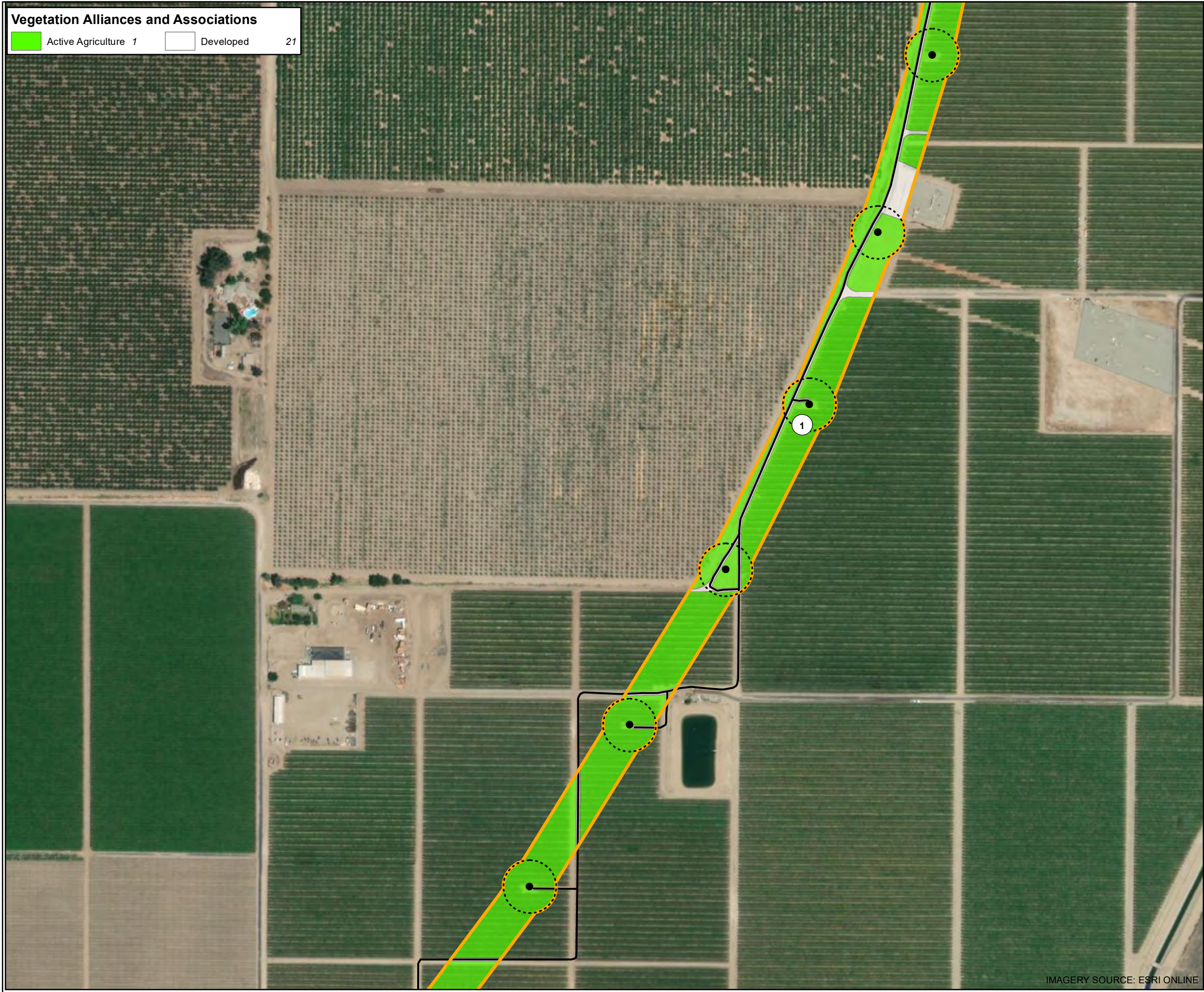
NATURAL COMMUNITIES





FIGURESET  
31 of 92




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Coordinate System: NAD 1983 UTM Zone 11N




**Vegetation Alliances and Associations**






 Active Agriculture	1	 Developed	21
------------------------------------------------------------------------------------------------------	---	---------------------------------------------------------------------------------------------	----




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**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA




0 500 1,000  
Feet



0 5 10 Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



**ARCADIS**

FIGURESET  
32 of 92

IMAGERY SOURCE: ESRI ONLINE



\\corparc\gis\Data\ArcGisData\GISPROJECTS\ENV T\1\ENVISCE\SOE\_TLLR\ArcGIS\_Desktop\KERN\TLR Kern Figure 3 Natural Communities Mapbook.mxd 9/28/2021 mg01044  
Coordinate System: NAD 1983 UTM Zone 11N

Vegetation Alliances and Associations

Active Agriculture

1

Disturbed (Ruderal Vegetation)


22

Developed

21

Sparsely Vegetated Streambed


40



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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

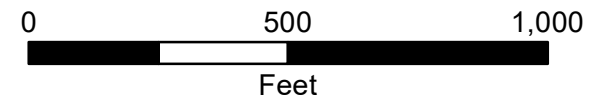
SUBSTATION LOCATION

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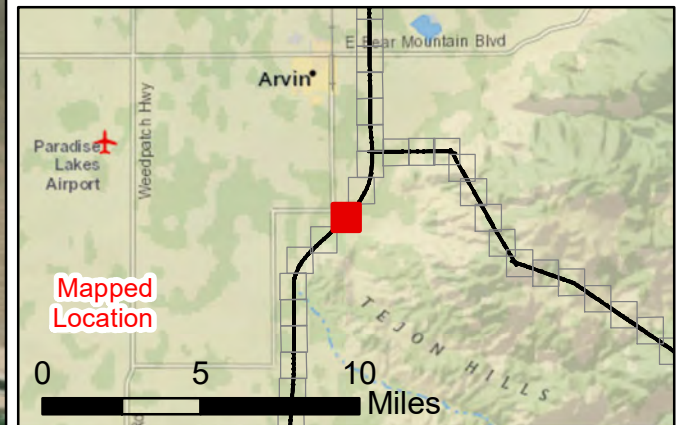
ACCESS ROADS

▭

SURVEY AREA




0 500 1,000  
Feet



Paradise Lakes Airport  
Weedpatch Hwy  
Arvin  
E Bear Mountain Blvd  
TEJON HILLS  
Mapped Location  
0 5 10 Miles

GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES



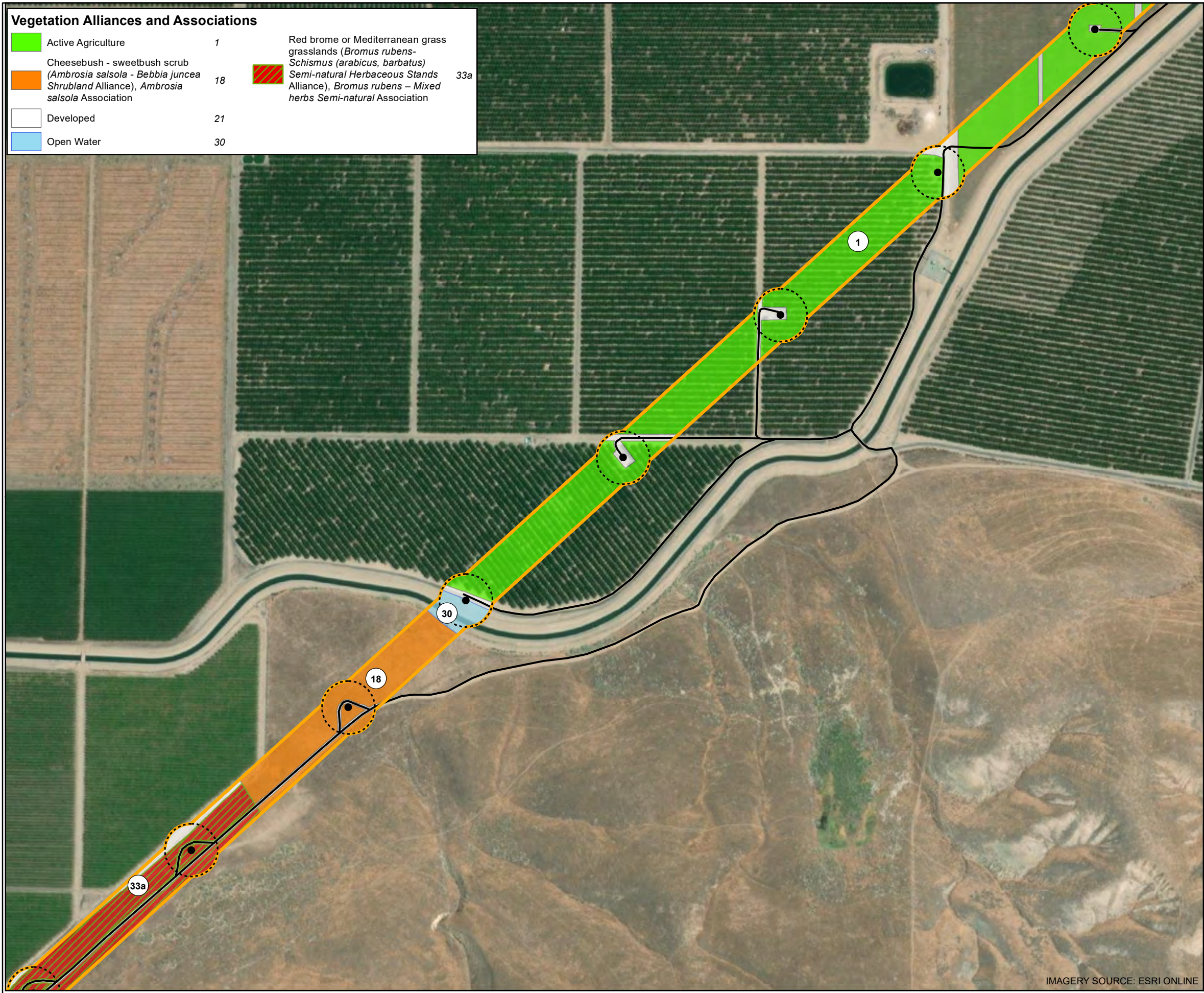
FIGURESET

33 of 92


IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N




Vegetation Alliances and Associations			
<div></div>	Active Agriculture	1	
<div></div>	Cheesebush - sweetbush scrub ( <i>Ambrosia salsola</i> - <i>Bebbia juncea</i> Shrubland Alliance), <i>Ambrosia salsola</i> Association	18	<div></div>
<div></div>	Developed	21	
<div></div>	Open Water	30	
	Red brome or Mediterranean grass grasslands ( <i>Bromus rubens</i> - <i>Schismus (arabicus, barbatus)</i> Semi-natural Herbaceous Stands Alliance), <i>Bromus rubens</i> - Mixed herbs Semi-natural Association	33a	








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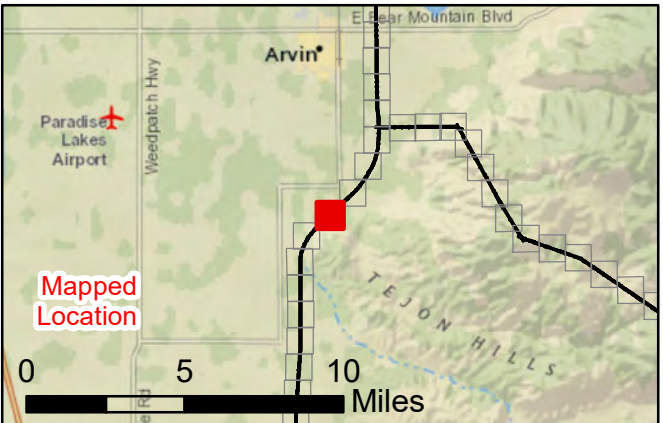


### LEGEND

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA

05001,000


Feet



0510Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**

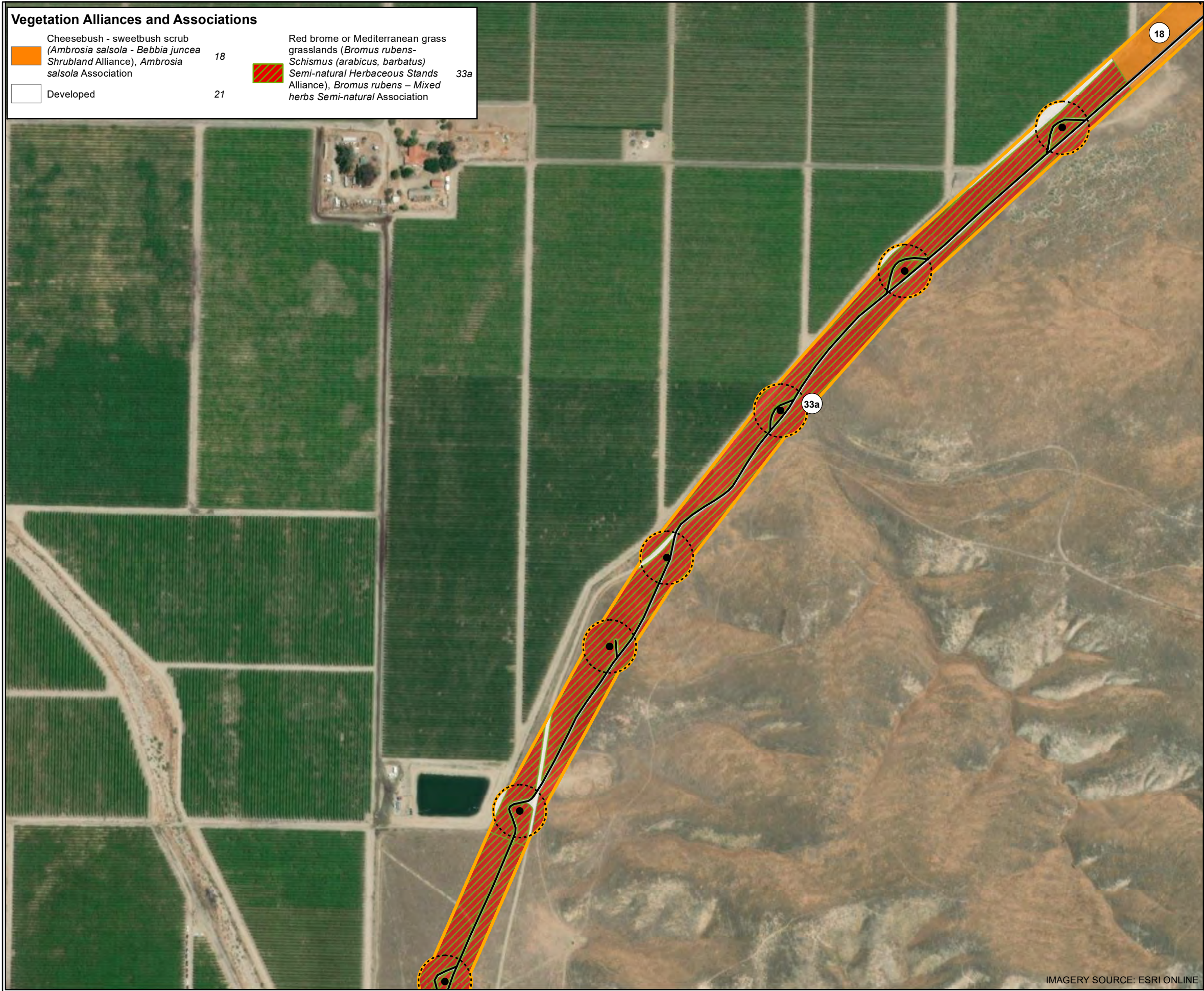


FIGURESET  
34 of 92

IMAGERY SOURCE: ESRI ONLINE




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Coordinate System: NAD 1983 UTM Zone 11N



**Vegetation Alliances and Associations**


<div></div> Cheesebush - sweetbush scrub ( <i>Ambrosia salsola</i> - <i>Bebbia juncea</i> Shrubland Alliance), <i>Ambrosia salsola</i> Association	18	<div></div> Red brome or Mediterranean grass grasslands ( <i>Bromus rubens</i> - <i>Schismus (arabicus, barbatus)</i> Semi-natural Herbaceous Stands Alliance), <i>Bromus rubens</i> – Mixed herbs Semi-natural Association	33a
<div></div> Developed	21		



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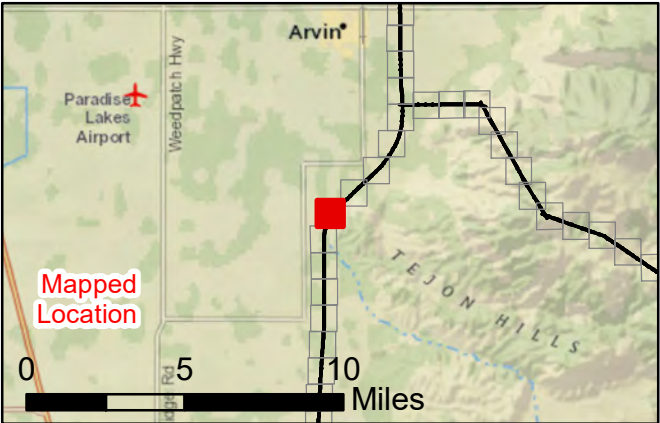


**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

05001,000

Feet




0510

Miles

GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES



ARCADIS

FIGURESET

35 of 92

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N

Vegetation Alliances and Associations

Active Agriculture

1

Developed


21

Red brome or Mediterranean grass grasslands (*Bromus rubens*-*Schismus (arabicus, barbatus)* *Semi-natural Herbaceous Stands* Alliance), *Bromus rubens* – *Mixed herbs Semi-natural* Association

33a

Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance), *Lepidospartum squamatum* / *ephemeral annuals* Association


37



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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

SUBSTATION LOCATION

—

ACCESS ROADS


▭

SURVEY AREA

GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

36 of 92

IMAGERY SOURCE: ESRI ONLINE



\\corparc\gis\Data\GISData\GISPROJECTS\ENV T\ENVISCE\SOE\_T\LR\ArcGIS\_Desktop\KERN\TLR Kern Figure 3 Natural Communities Mapbook.mxd 9/28/2021 mg01044  
Coordinate System: NAD 1983 UTM Zone 11N

Vegetation Alliances and Associations

Active Agriculture


Developed

1


21

Red brome or Mediterranean grass grasslands (*Bromus rubens*-*Schismus (arabicus, barbatus)* *Semi-natural Herbaceous Stands* Alliance), *Bromus rubens* – Mixed herbs *Semi-natural* Association

33a



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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

SUBSTATION LOCATION

—


ACCESS ROADS

□

SURVEY AREA

GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

37 of 92

IMAGERY SOURCE: ESRI ONLINE



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Vegetation Alliances and Associations

Active Agriculture

1

Developed

21



IMAGERY SOURCE: ESRI ONLINE

SOUTHERN CALIFORNIA

EDISON

An EDISON INTERNATIONAL Company

N

LEGEND

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SUBSTATION LOCATION

ACCESS ROADS

SURVEY AREA

05001,000

Feet

Paradise Lakes Airport

Weedpatch

Wheeler Ridge Rd

TEJON HILLS

Mapped Location

0510

Miles

GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

38 of 92



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**Vegetation Alliances and Associations**

Active Agriculture

1

Developed


21



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LEGEND

●

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

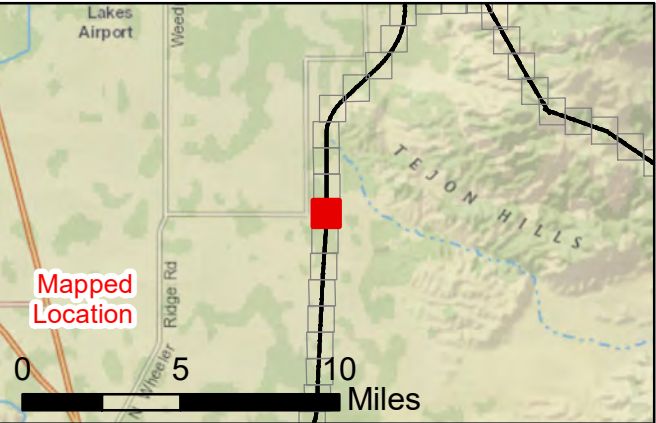
SUBSTATION LOCATION

ACCESS ROADS

SURVEY AREA

05001,000

Feet




0510

Miles

GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

39 of 92

IMAGERY SOURCE: ESRI ONLINE



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Vegetation Alliances and Associations


Active Agriculture

1

Developed


21





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LEGEND

●

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER


SUBSTATION LOCATION

ACCESS ROADS

SURVEY AREA

05001,000

Feet




0510

Miles

GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

40 of 92

IMAGERY SOURCE: ESRI ONLINE



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**Vegetation Alliances and Associations**

Active Agriculture

1

Developed


21



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**LEGEND**

●

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

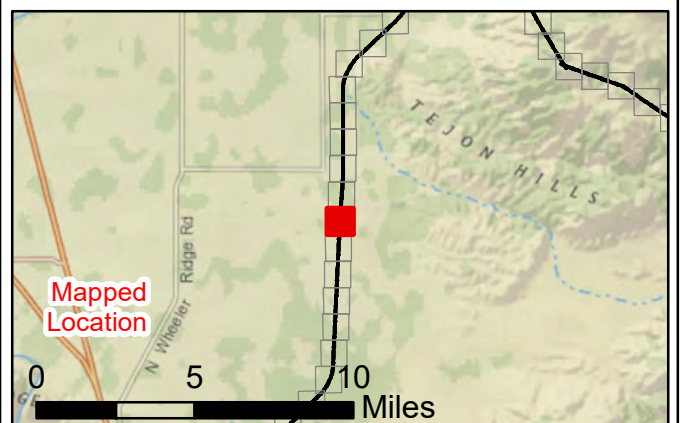
SUBSTATION LOCATION

ACCESS ROADS

SURVEY AREA

05001,000

Feet




0510

Miles

GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

41 of 92

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N

Vegetation Alliances and Associations

Active Agriculture

1

Developed

21



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EDISON

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N

LEGEND

●

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SUBSTATION LOCATION

ACCESS ROADS

SURVEY AREA

05001,000

Feet

Mapped Location

0510Miles

GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

42 of 92



IMAGERY SOURCE: ESRI ONLINE




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Coordinate System: NAD 1983 UTM Zone 11N




**Vegetation Alliances and Associations**

	Active Agriculture	1		Developed	21
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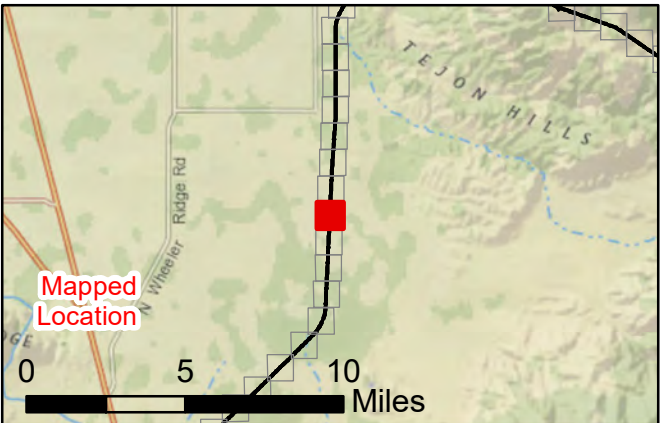


**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



0 500 1,000  
Feet




Mapped Location

0 5 10 Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



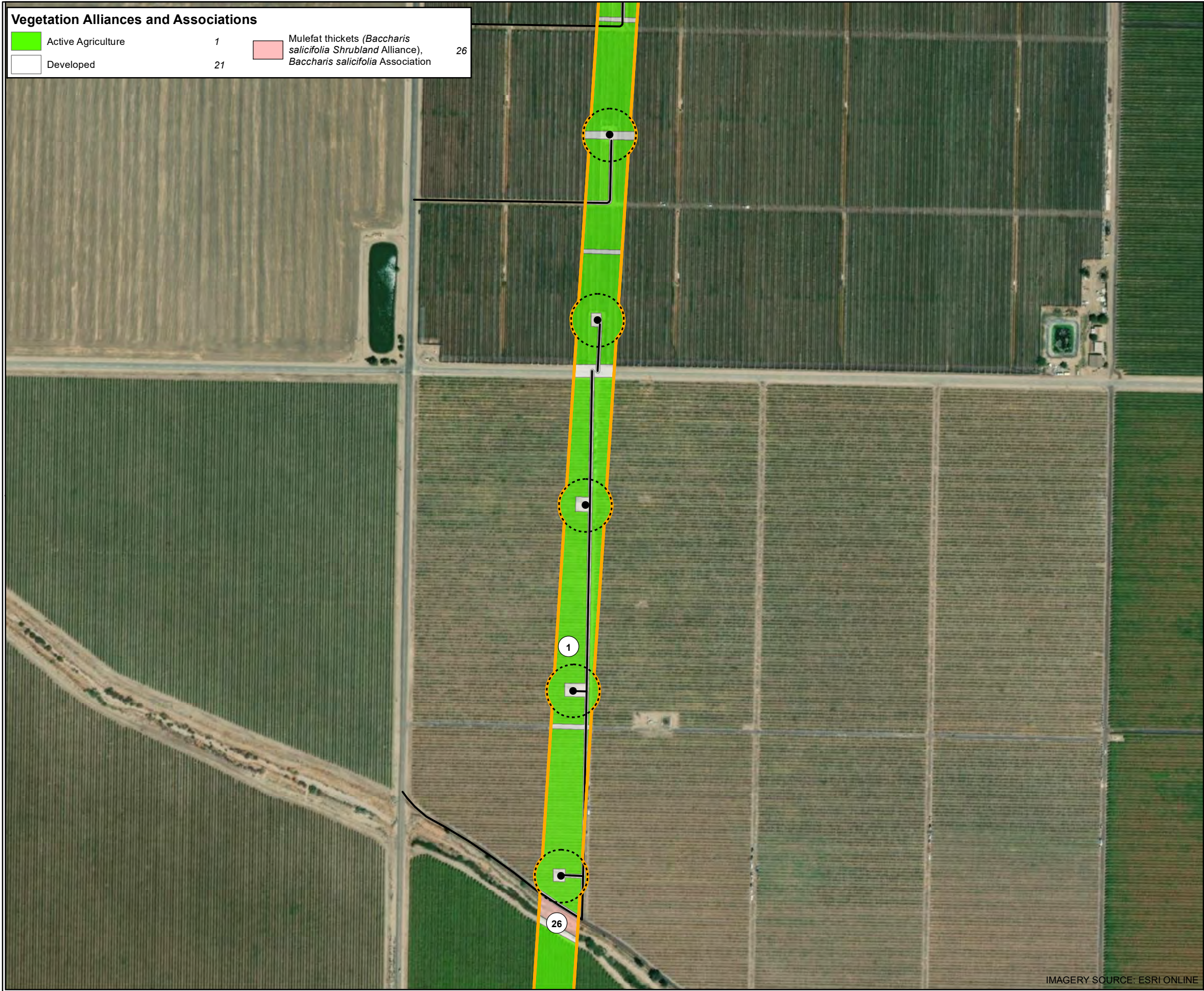
**ARCADIS**

FIGURESET  
43 of 92




IMAGERY SOURCE: ESRI ONLINE




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Coordinate System: NAD 1983 UTM Zone 11N




**Vegetation Alliances and Associations**






	Active Agriculture	1		Mulefat thickets ( <i>Baccharis salicifolia</i> Shrubland Alliance), <i>Baccharis salicifolia</i> Association	26
	Developed	21			

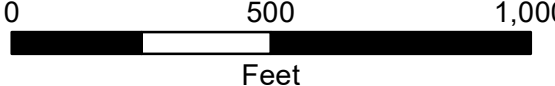


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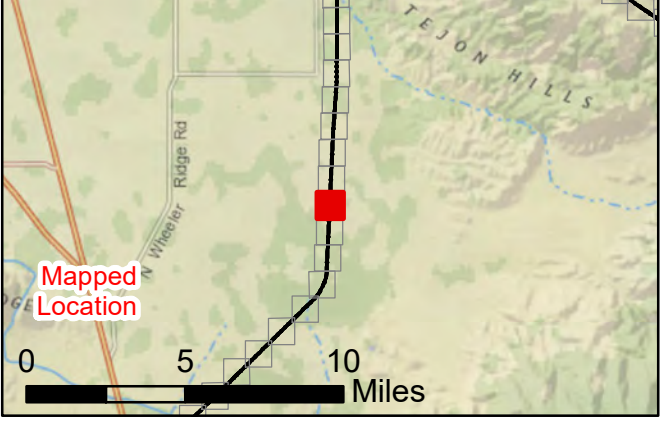


**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA




0 500 1,000  
Feet



0 5 10 Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



**ARCADIS**

FIGURESET  
44 of 92

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Coordinate System: NAD 1983 UTM Zone 11N

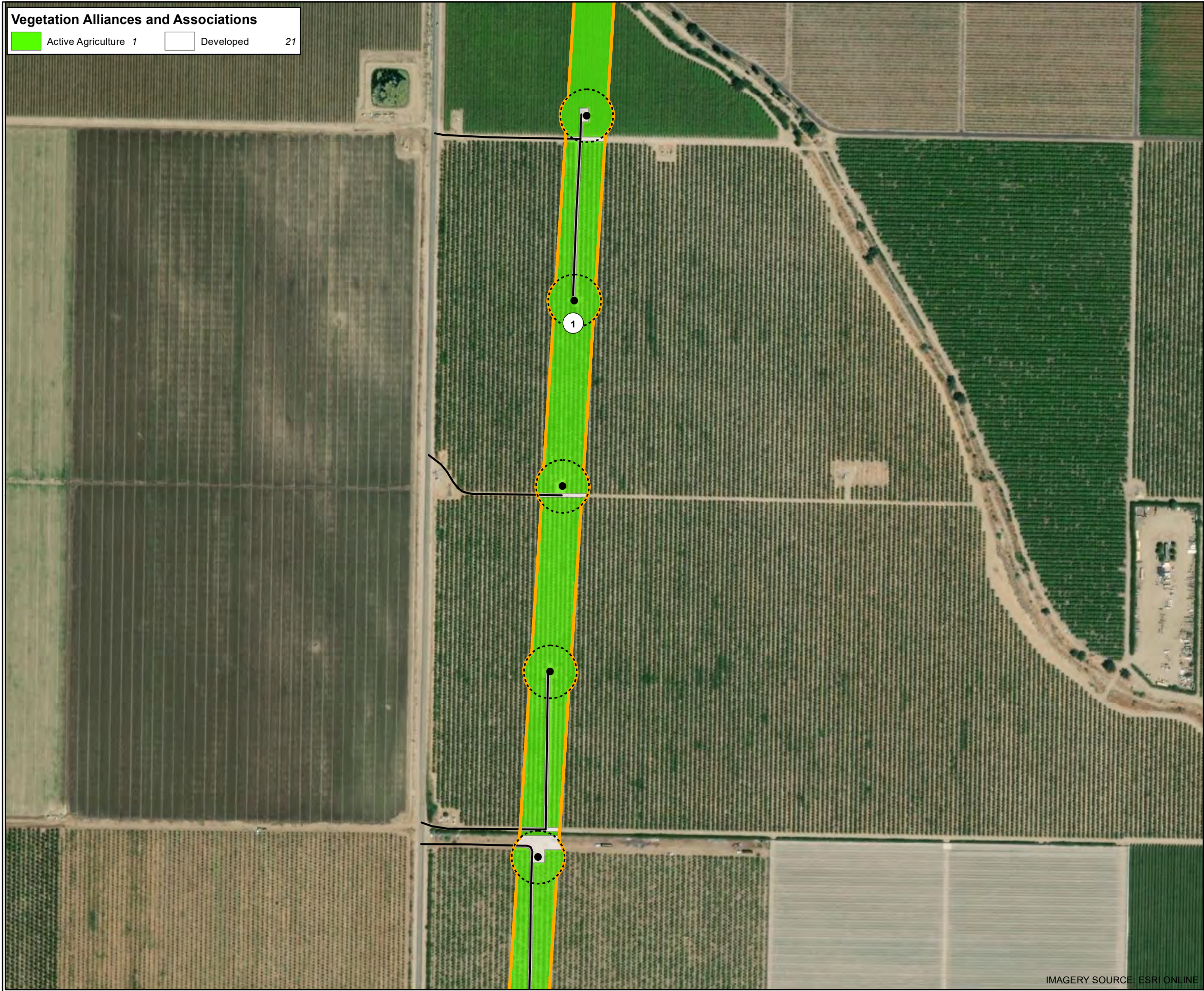
Vegetation Alliances and Associations

Active Agriculture

1

Developed

21





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LEGEND

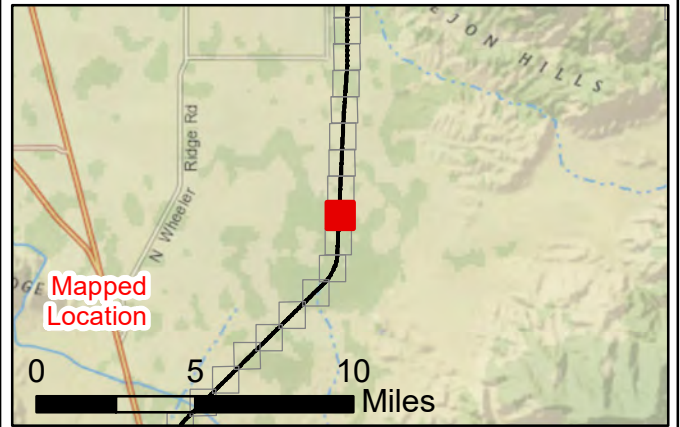
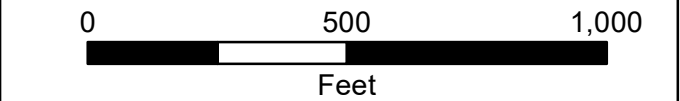
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SUBSTATION LOCATION


ACCESS ROADS

SURVEY AREA



GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES

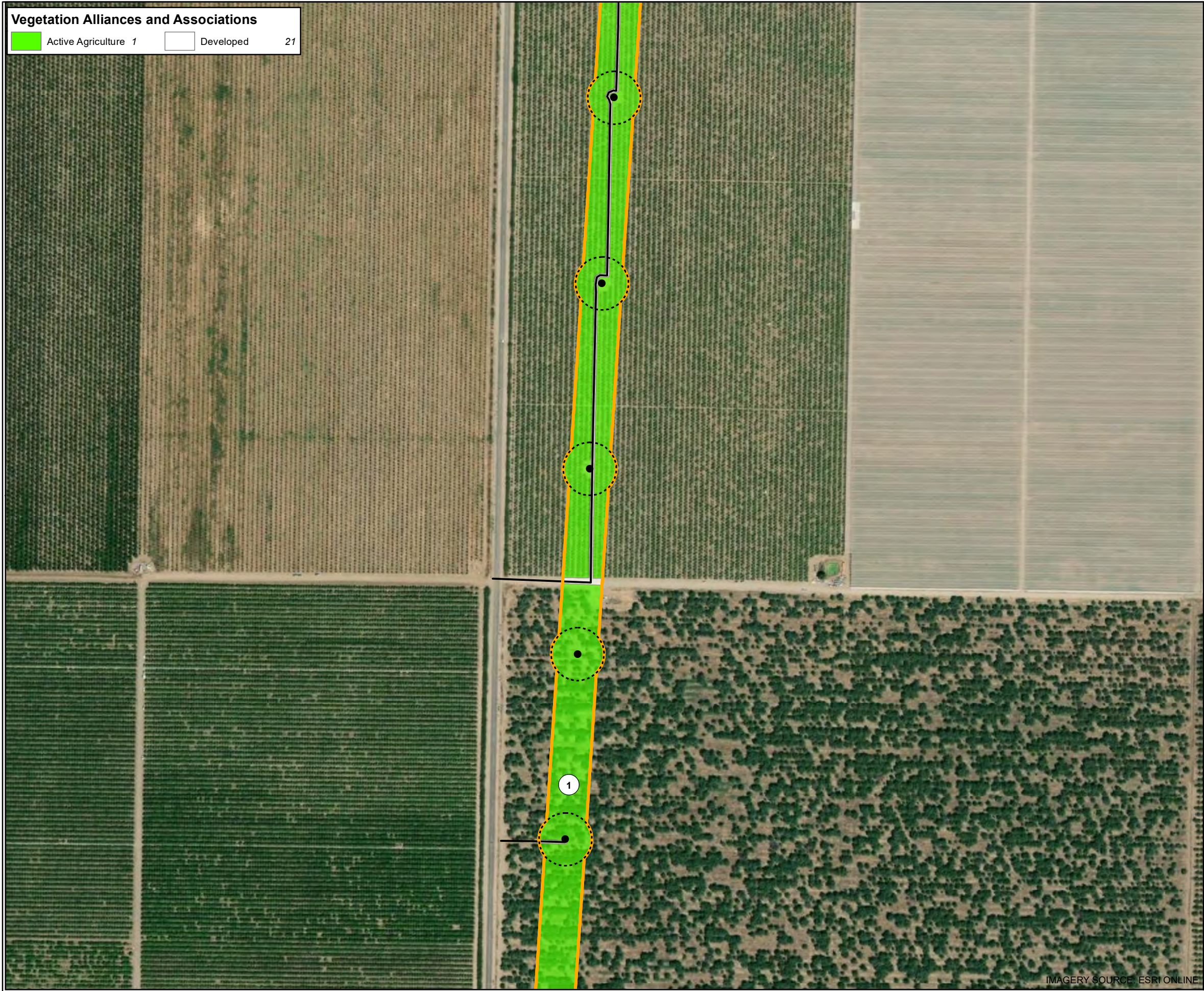
ARCADIS

FIGURESET  
45 of 92



IMAGERY SOURCE: ESRI ONLINE




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Coordinate System: NAD 1983 UTM Zone 11N




**Vegetation Alliances and Associations**






	Active Agriculture	1		Developed	21
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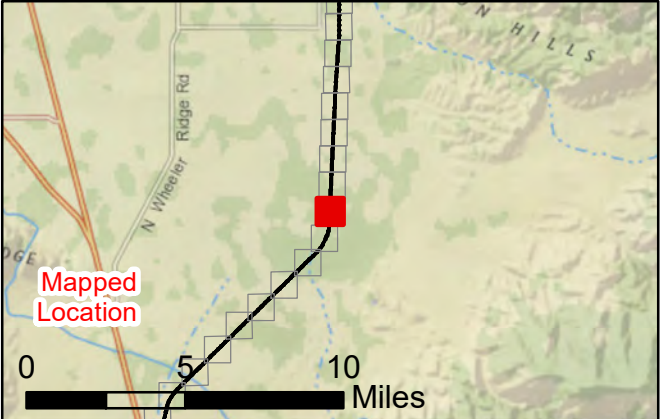


**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA



0 500 1,000  
Feet




Mapped Location

0 5 10 Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**

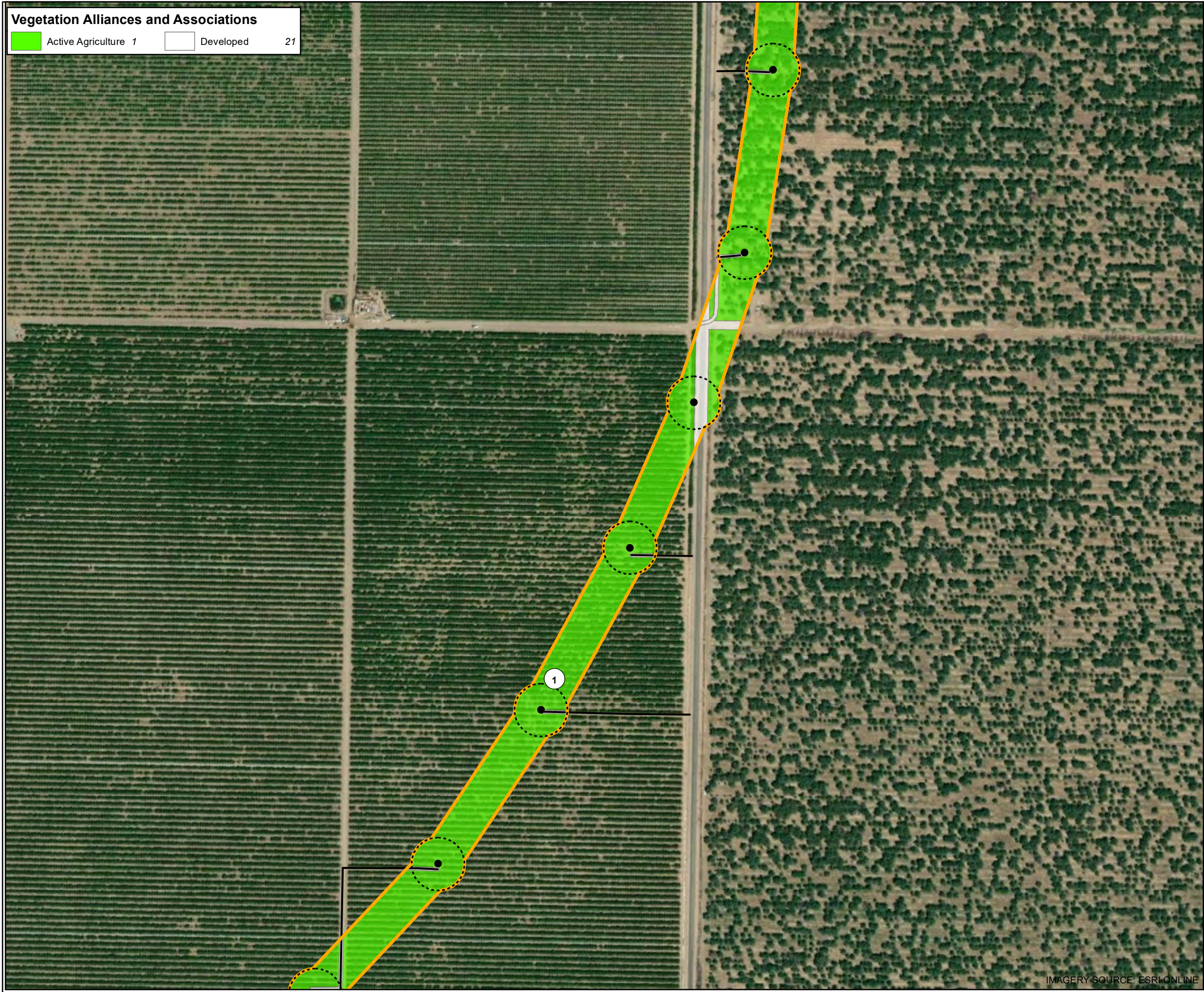


FIGURESET  
46 of 92



IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N



**Vegetation Alliances and Associations**

 Active Agriculture	1	 Developed	21
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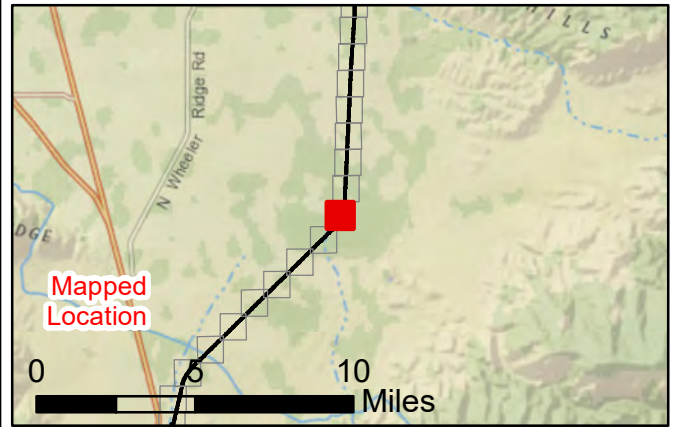
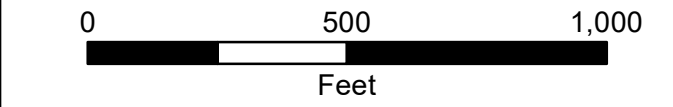
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**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**

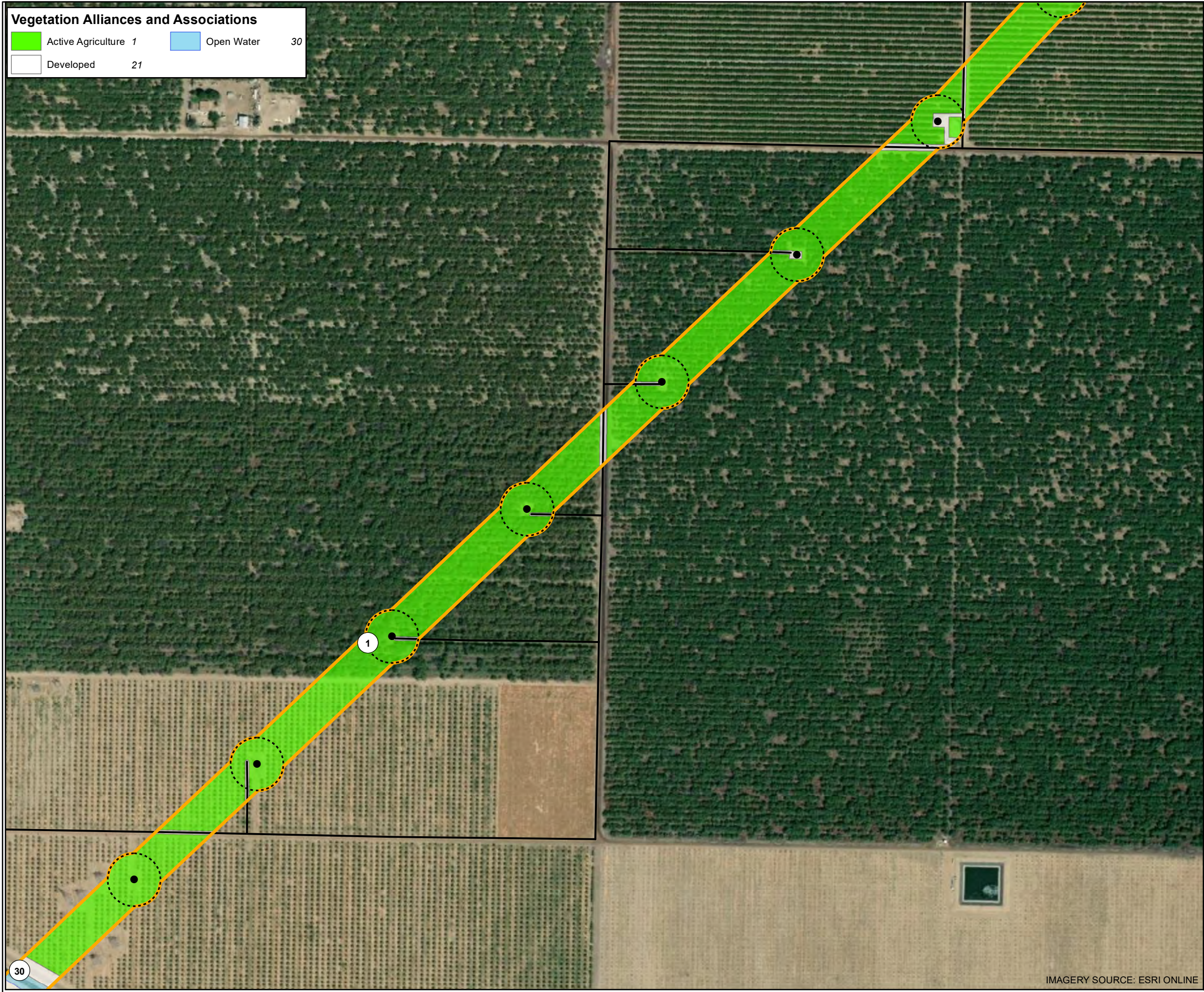





**FIGURESET**  
47 of 92

IMAGERY SOURCE: ESRI ONLINE



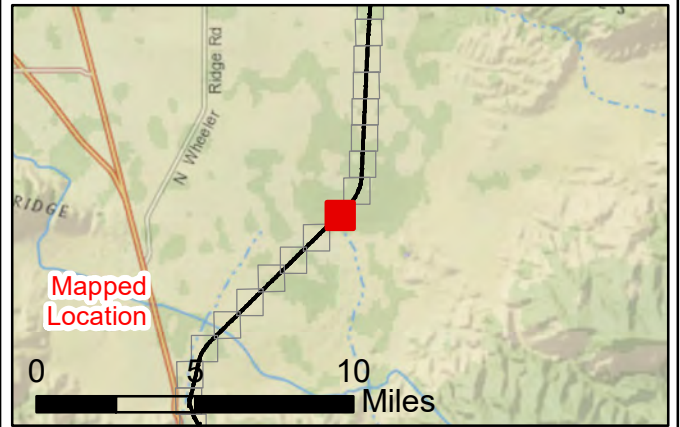
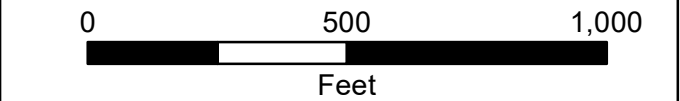
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Vegetation Alliances and Associations			
	Active Agriculture	1	
	Open Water	30	
	Developed	21	




- LEGEND**
- STRUCTURE LOCATION
  - 100 FOOT RADIUS TOWER BUFFER
  - SUBSTATION LOCATION
  - ACCESS ROADS
  - ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**

**ARCADIS**





FIGURESET

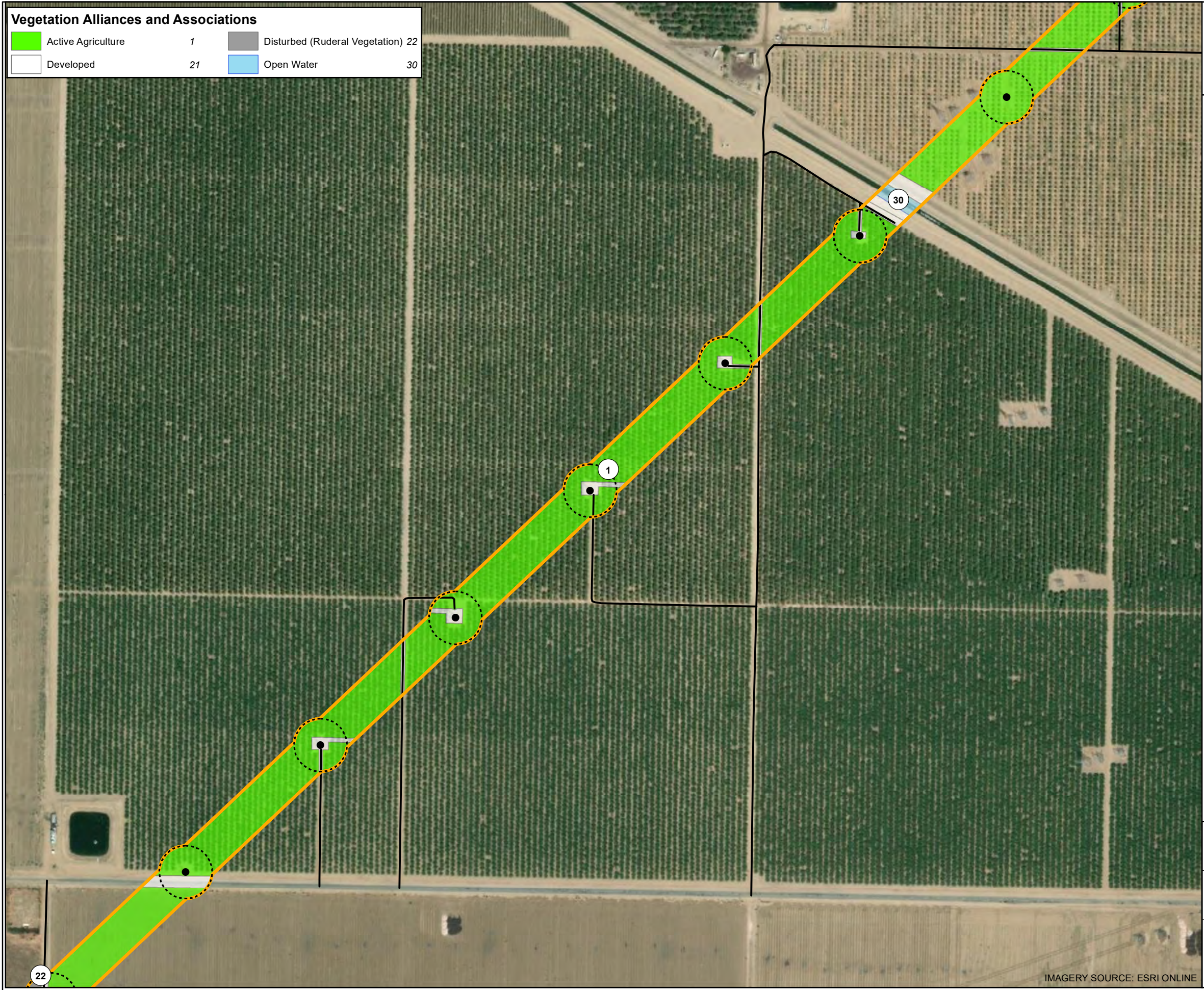
48 of 92

IMAGERY SOURCE: ESRI ONLINE



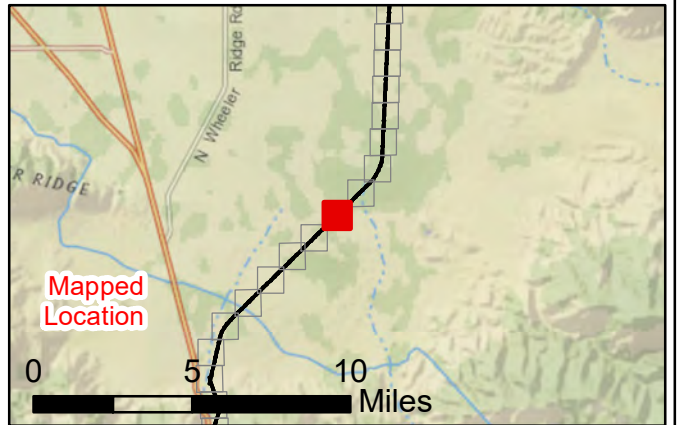
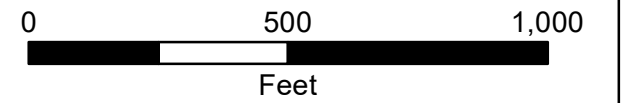
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Coordinate System: NAD 1983 UTM Zone 11N

Vegetation Alliances and Associations			
	Active Agriculture	1	 Disturbed (Ruderal Vegetation) 22
	Developed	21	 Open Water 30



LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES



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Vegetation Alliances and Associations

Active Agriculture

1

Disturbed (Ruderal Vegetation)

22

Developed


21



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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

SUBSTATION LOCATION

—

ACCESS ROADS

▭

SURVEY AREA

GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES

ARCADIS

FIGURESET

50 of 92

IMAGERY SOURCE: ESRI ONLINE



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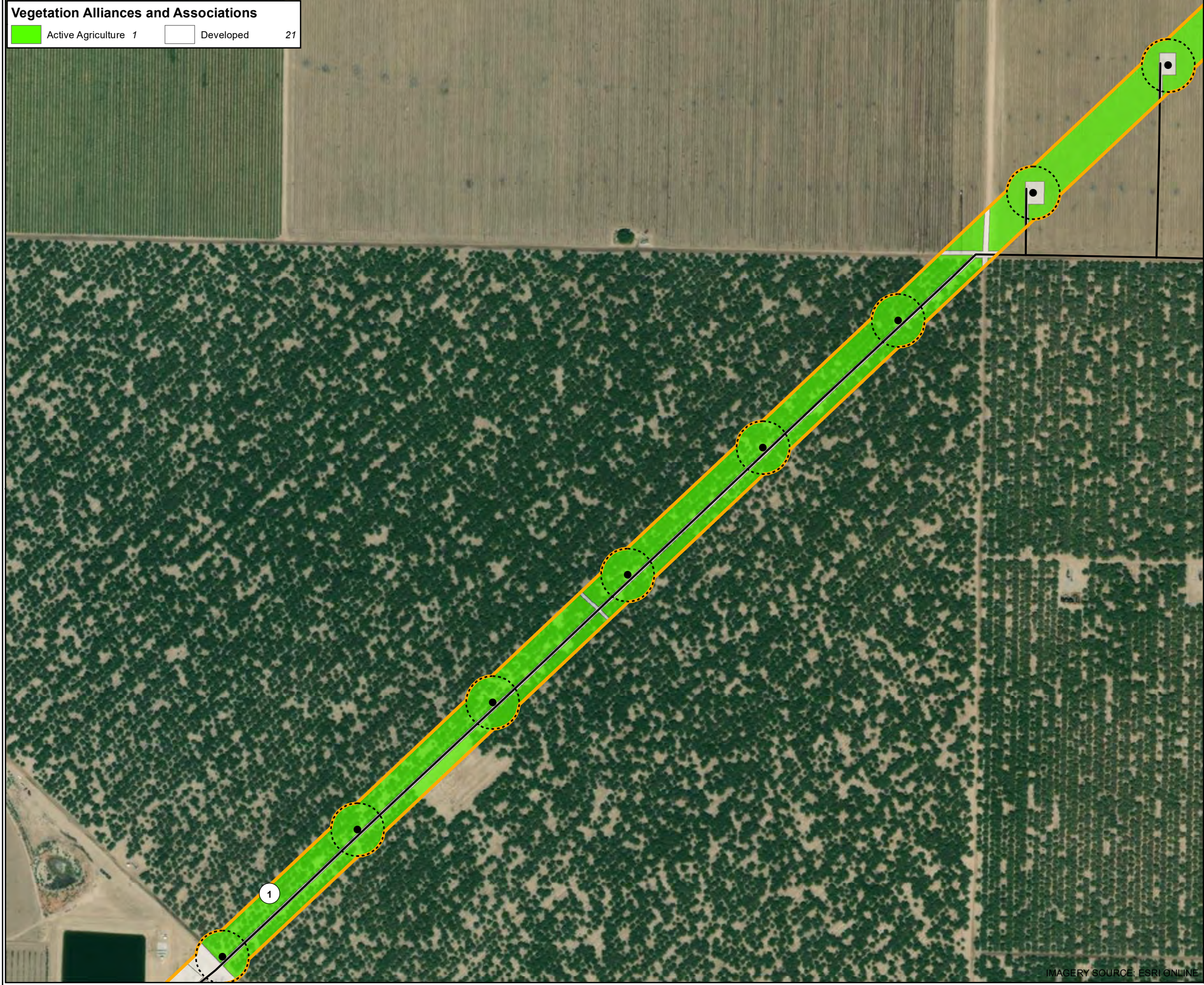
Vegetation Alliances and Associations


Active Agriculture

1


Developed

21





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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

SUBSTATION LOCATION

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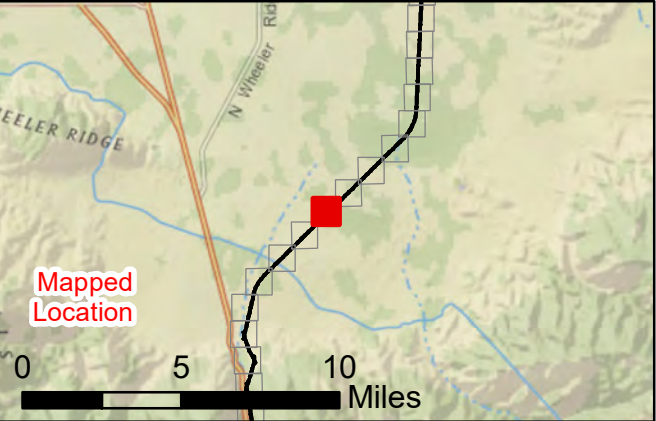
ACCESS ROADS

▭

SURVEY AREA

05001,000

Feet




0510

Miles

GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES



ARCADIS

FIGURESET

51 of 92

IMAGERY SOURCE: ESRI ONLINE



Vegetation Alliances and Associations

Active Agriculture 1

Developed 21



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LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

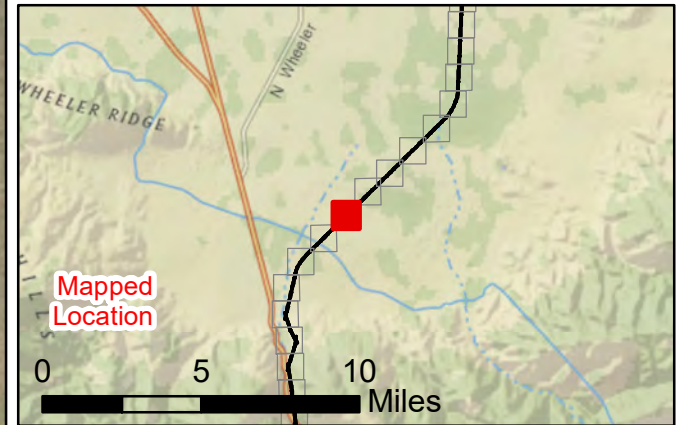
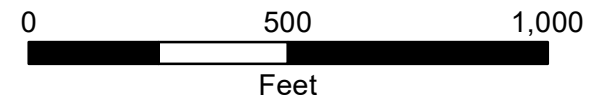
SUBSTATION LOCATION

—

ACCESS ROADS

▭


SURVEY AREA



GORMAN-KERN RIVER

66 kV PROJECT

NATURAL COMMUNITIES



FIGURESET

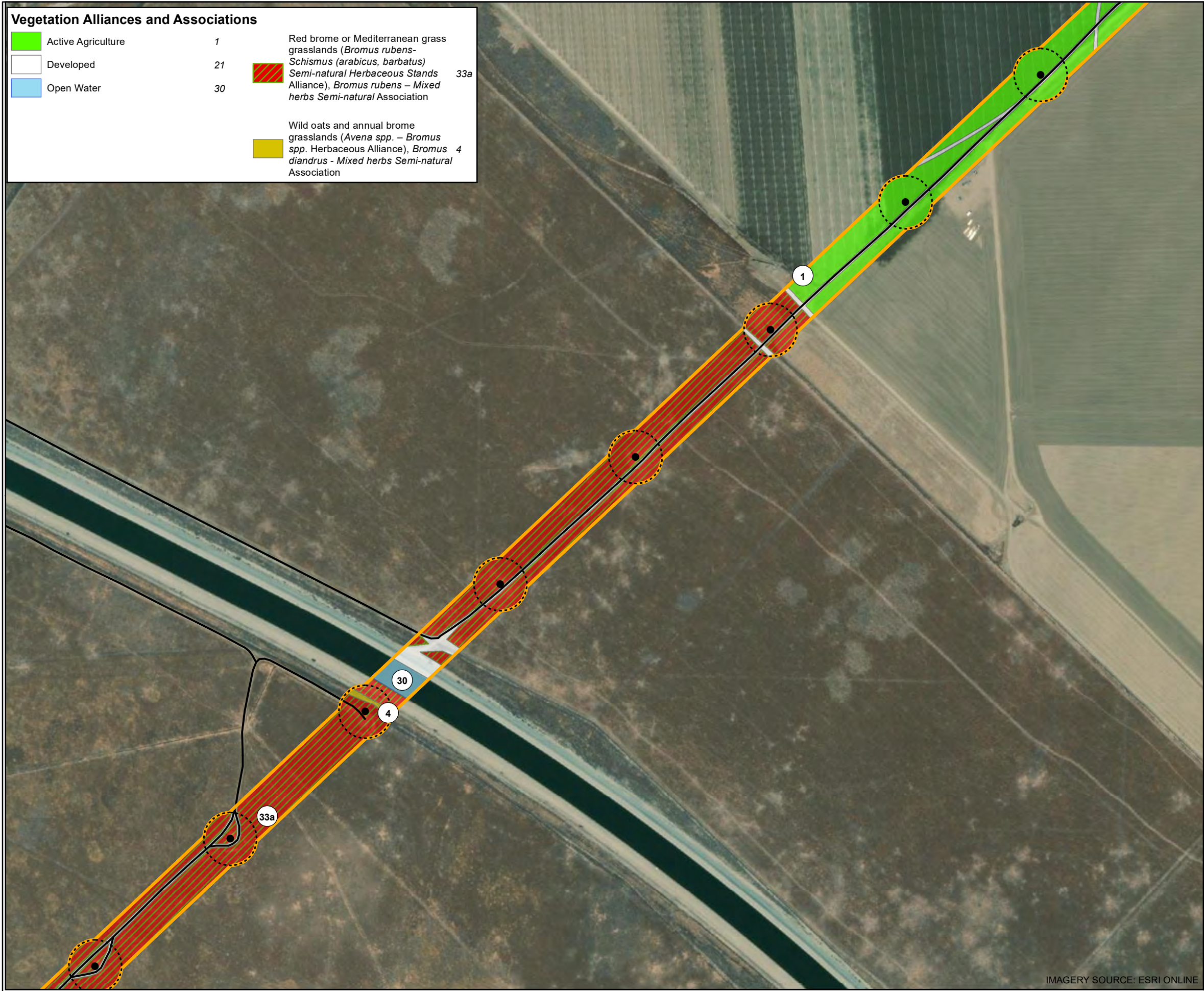
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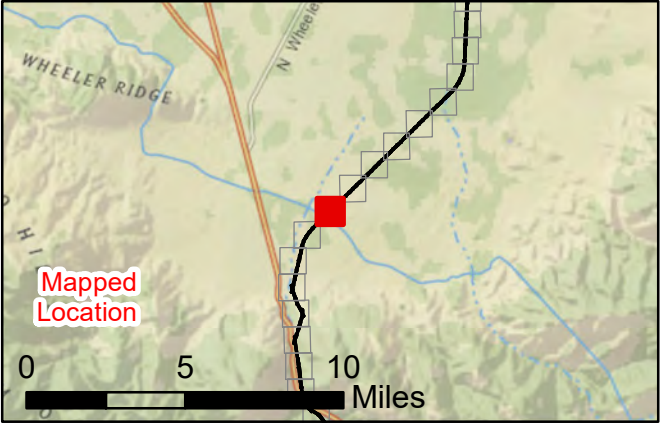
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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA


0 500 1,000  
Feet



0 5 10  
Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



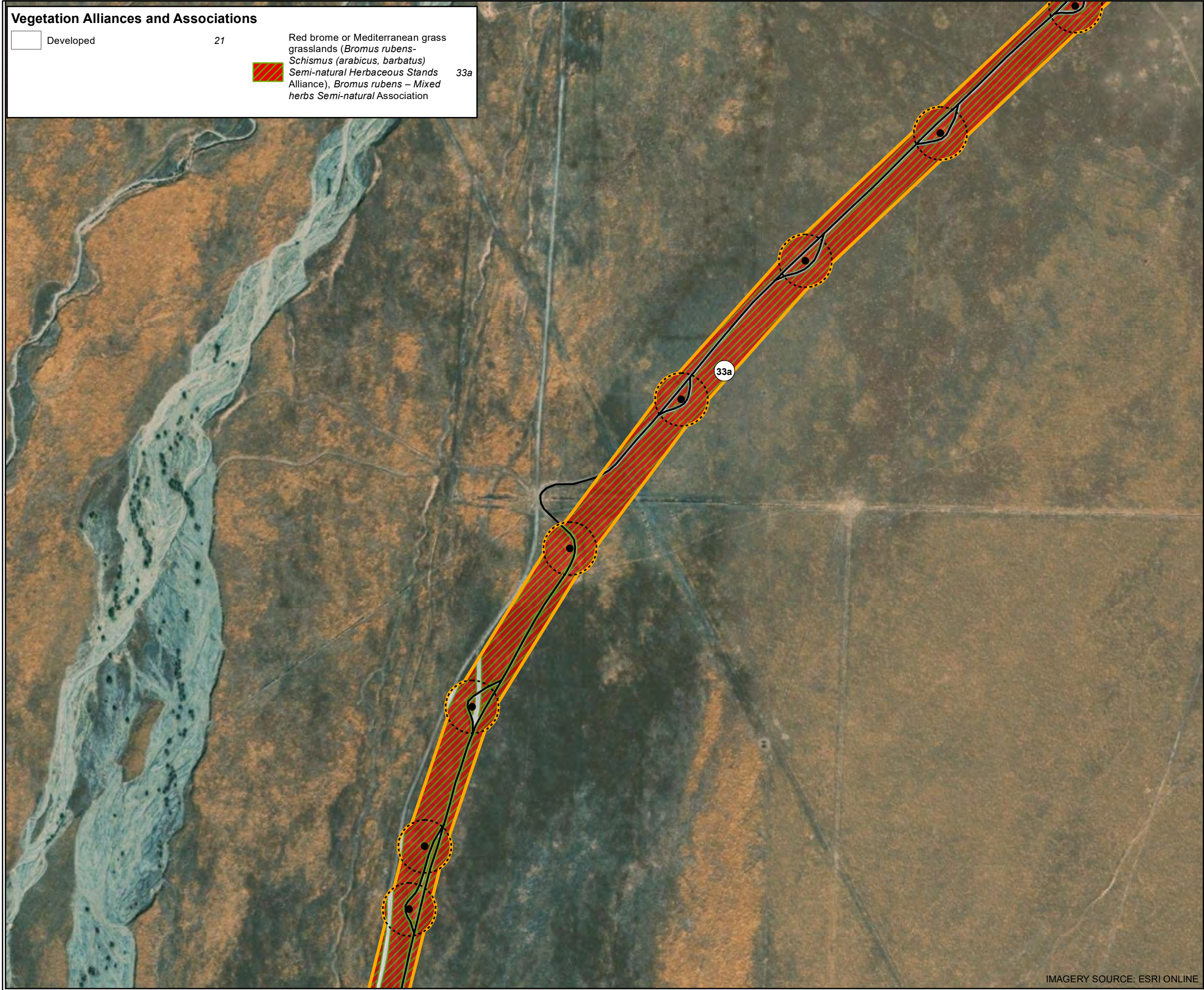
**ARCADIS**

FIGURESET  
53 of 92

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N



**Vegetation Alliances and Associations**

	Developed	21	Red brome or Mediterranean grass grasslands ( <i>Bromus rubens</i> - <i>Schismus (arabicus, barbatus)</i> Semi-natural Herbaceous Stands Alliance), <i>Bromus rubens</i> – Mixed herbs Semi-natural Association	33a
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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- SURVEY AREA

0 500 1,000  
Feet

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**

**FIGURESET**  
54 of 92

IMAGERY SOURCE: ESRI ONLINE



\\corparc\gis\Data\ArcGisData\GISPROJECTS\ENV T\1\ENVISCE\SOE\_T\LR\ArcGIS\_Desktop\KERN\TLR Kern Figure 3 Natural Communities Mapbook.mxd 9/28/2021 mg01044  
Coordinate System: NAD 1983 UTM Zone 11N




**Vegetation Alliances and Associations**

Developed

21


Red brome or Mediterranean grass grasslands (*Bromus rubens*-*Schismus (arabicus, barbatus)* Semi-natural Herbaceous Stands Alliance), *Bromus rubens* – Mixed herbs Semi-natural Association

33a



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**LEGEND**

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

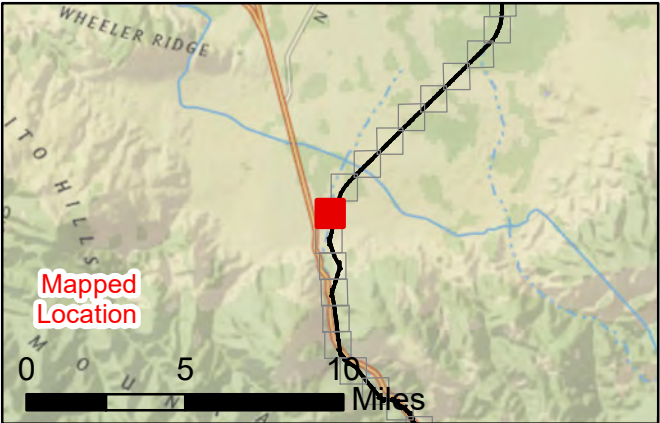
SUBSTATION LOCATION

ACCESS ROADS

SURVEY AREA

05001,000

Feet




Mapped Location

0510Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



**ARCADIS**

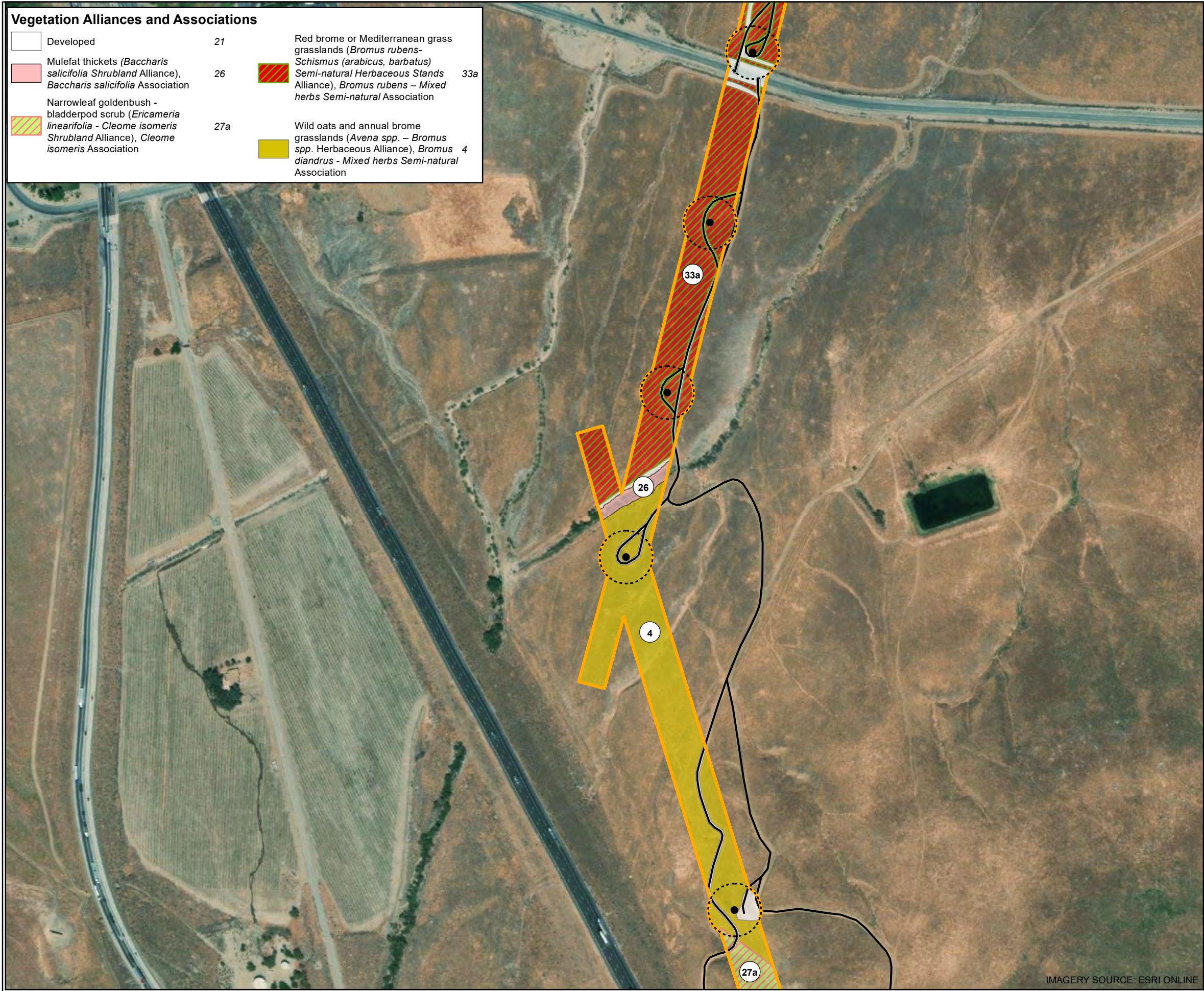
FIGURESET





55 of 92

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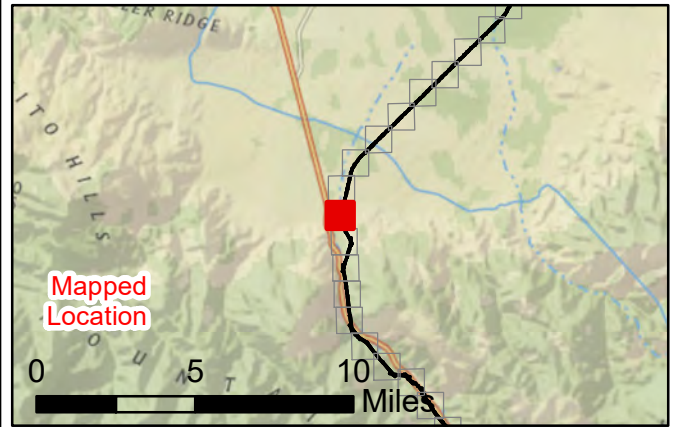
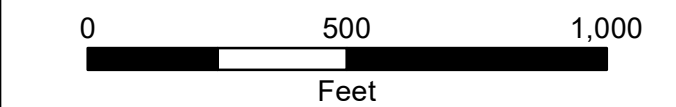
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Coordinate System: NAD 1983 UTM Zone 11N



Vegetation Alliances and Associations			
	Developed	21	Red brome or Mediterranean grass grasslands ( <i>Bromus rubens-Schismus (arabicus, barbatus)</i> Semi-natural Herbaceous Stands Alliance), <i>Bromus rubens</i> – Mixed herbs Semi-natural Association
	Mulefat thickets ( <i>Baccharis salicifolia</i> Shrubland Alliance), <i>Baccharis salicifolia</i> Association	26	
	Narrowleaf goldenbush - bladderpod scrub ( <i>Ericameria linearifolia</i> - <i>Cleome isomeris</i> Shrubland Alliance), <i>Cleome isomeris</i> Association	27a	Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association
		33a	




- LEGEND**
- STRUCTURE LOCATION
  - 100 FOOT RADIUS TOWER BUFFER
  - SUBSTATION LOCATION
  - ACCESS ROADS
  - ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**

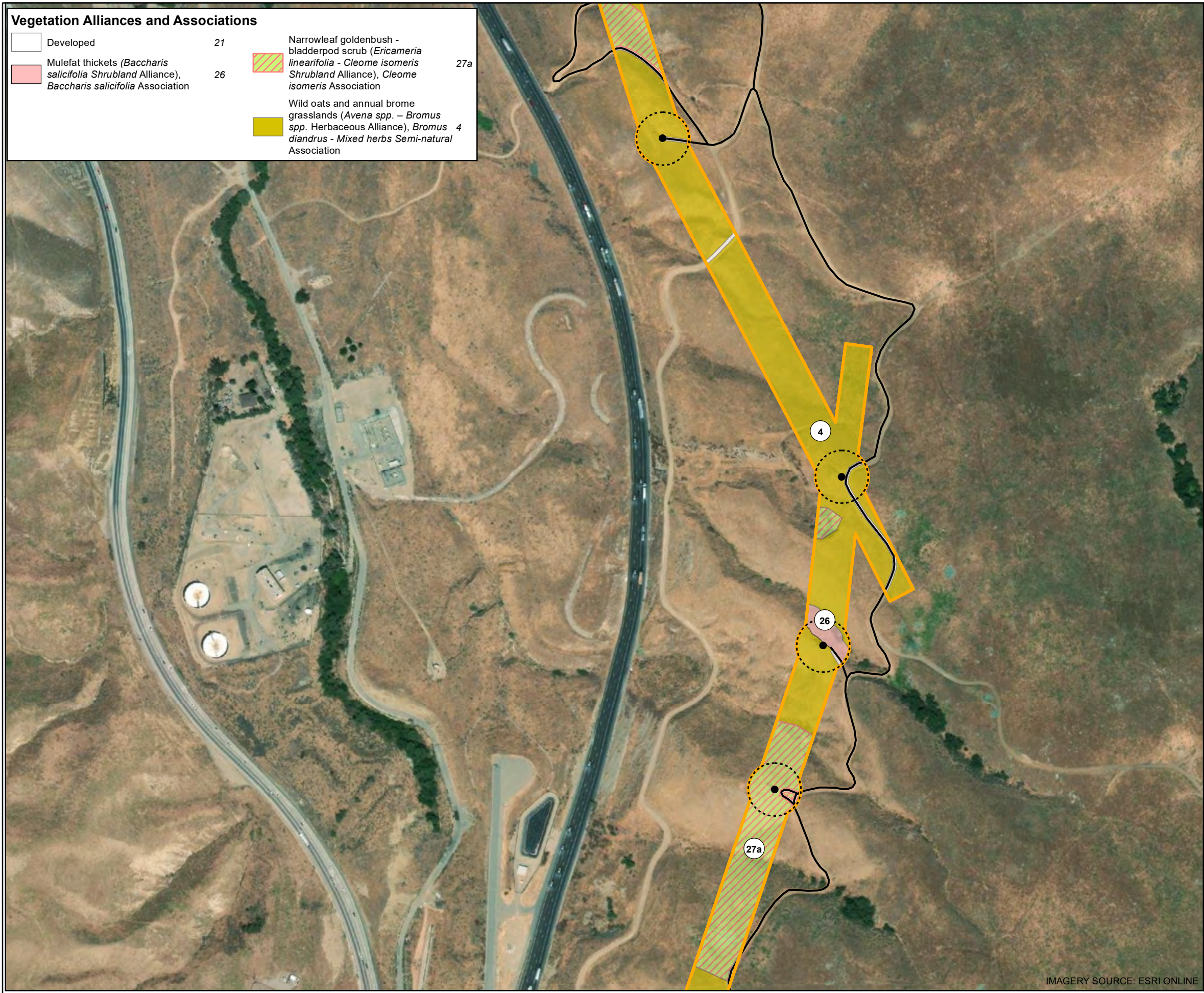
**ARCADIS**





FIGURESET


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Coordinate System: NAD 1983 UTM Zone 11N








Vegetation Alliances and Associations			
	Developed	21	
	Mulefat thickets ( <i>Baccharis salicifolia</i> Shrubland Alliance), <i>Baccharis salicifolia</i> Association	26	
	Narrowleaf goldenbush - bladderpod scrub ( <i>Ericameria linearifolia</i> - <i>Cleome isomeris</i> Shrubland Alliance), <i>Cleome isomeris</i> Association	27a	
	Wild oats and annual brome grasslands ( <i>Avena</i> spp. - <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4	



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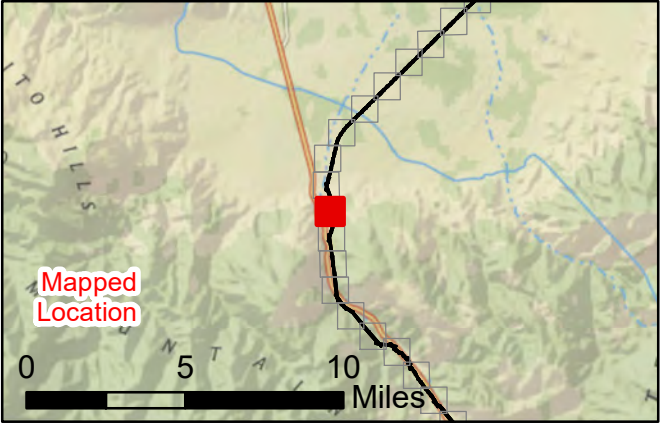


**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA

05001,000

Feet




Mapped Location

0510Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



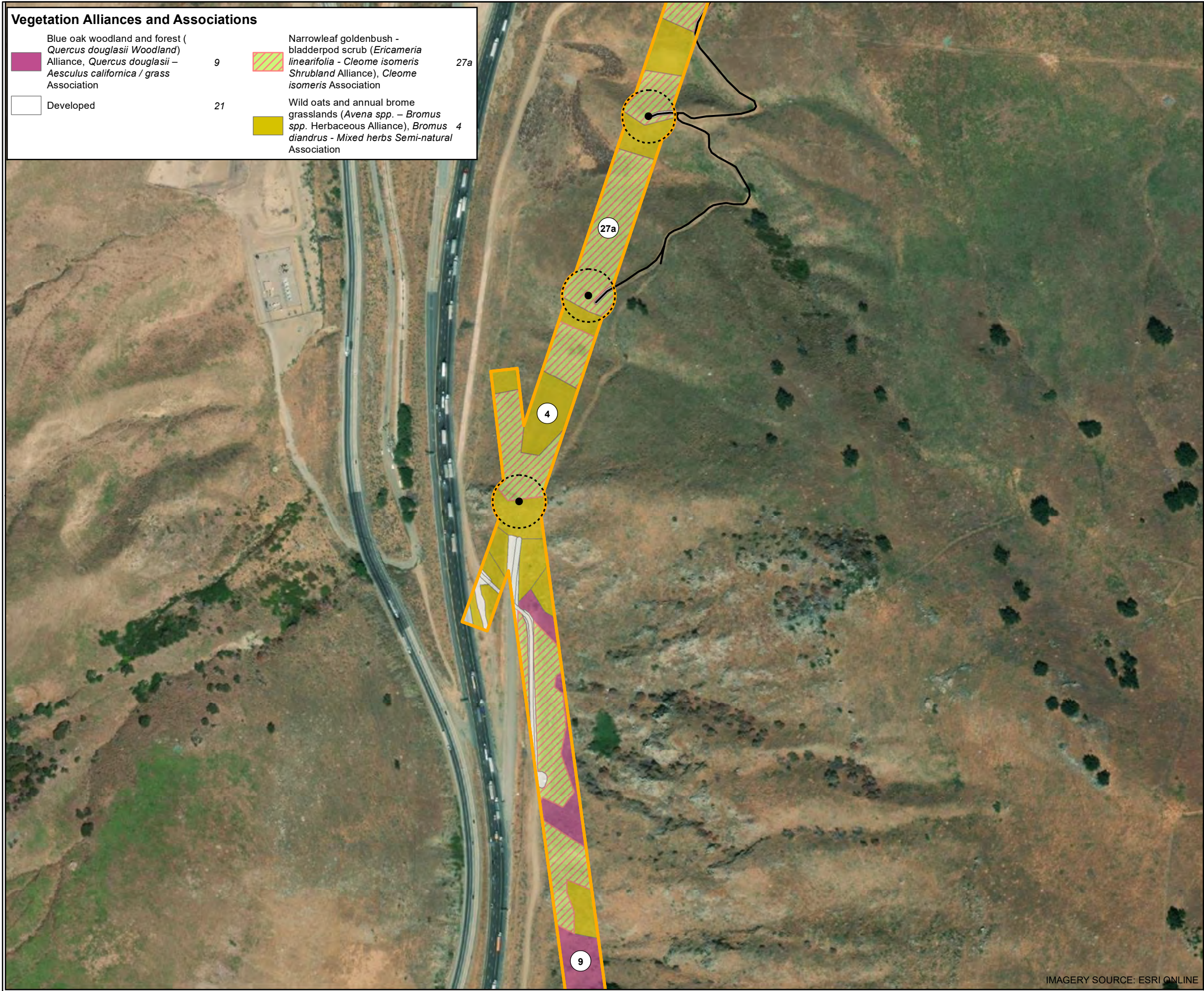
**ARCADIS**





**FIGURESET**  
57 of 92


IMAGERY SOURCE: ESRI ONLINE




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Coordinate System: NAD 1983 UTM Zone 11N








Vegetation Alliances and Associations			
	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> – <i>Aesculus californica</i> / grass Association	9	
	Developed	21	
	Narrowleaf goldenbush - bladderpod scrub ( <i>Ericameria linearifolia</i> - <i>Cleome isomeris</i> Shrubland Alliance), <i>Cleome isomeris</i> Association	27a	
	Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4	



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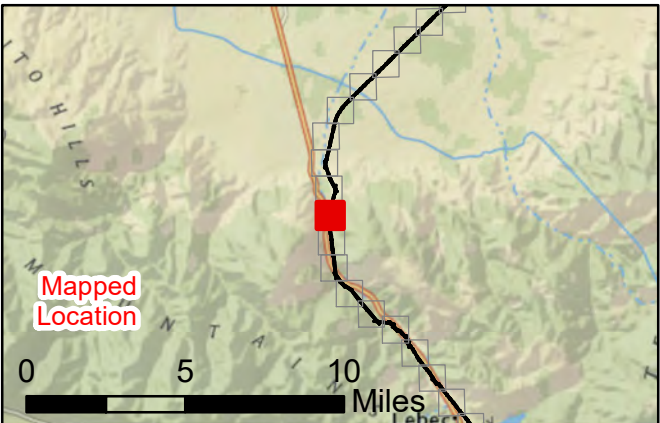


**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA

05001,000

Feet




Mapped Location

0510Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



**ARCADIS**

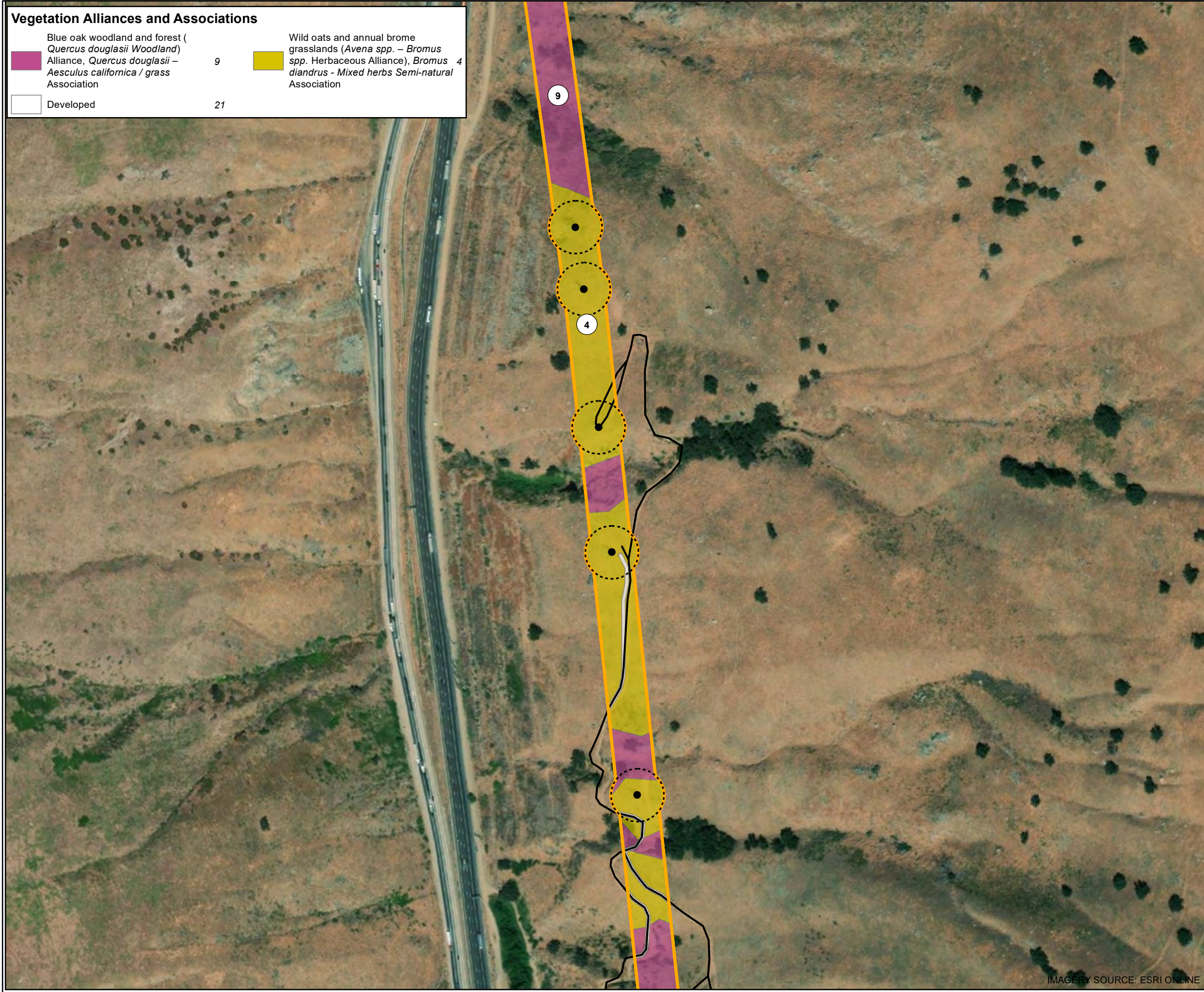
FIGURESET

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IMAGERY SOURCE: ESRI ONLINE



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Vegetation Alliances and Associations		
<div></div> Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> – <i>Aesculus californica</i> / grass Association	9	<div></div> Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association
<div></div> Developed	21	



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LEGEND

●

 STRUCTURE LOCATION

⬜

 100 FOOT RADIUS TOWER BUFFER

⬜

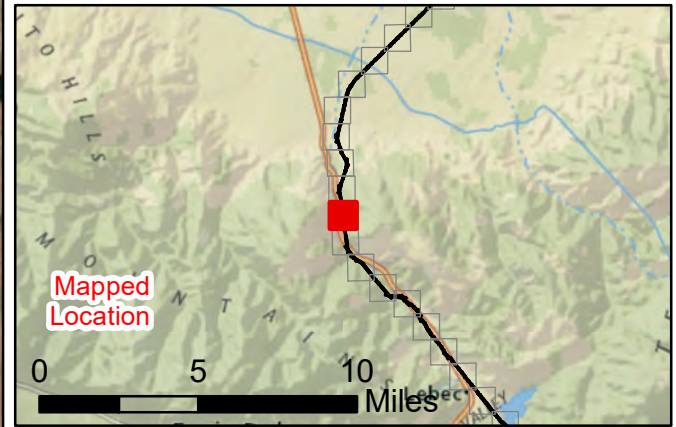
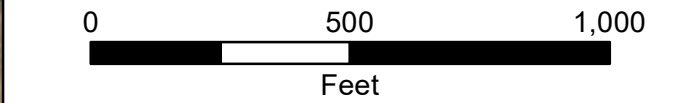
 SUBSTATION LOCATION

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 ACCESS ROADS


⬜

 SURVEY AREA



GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES

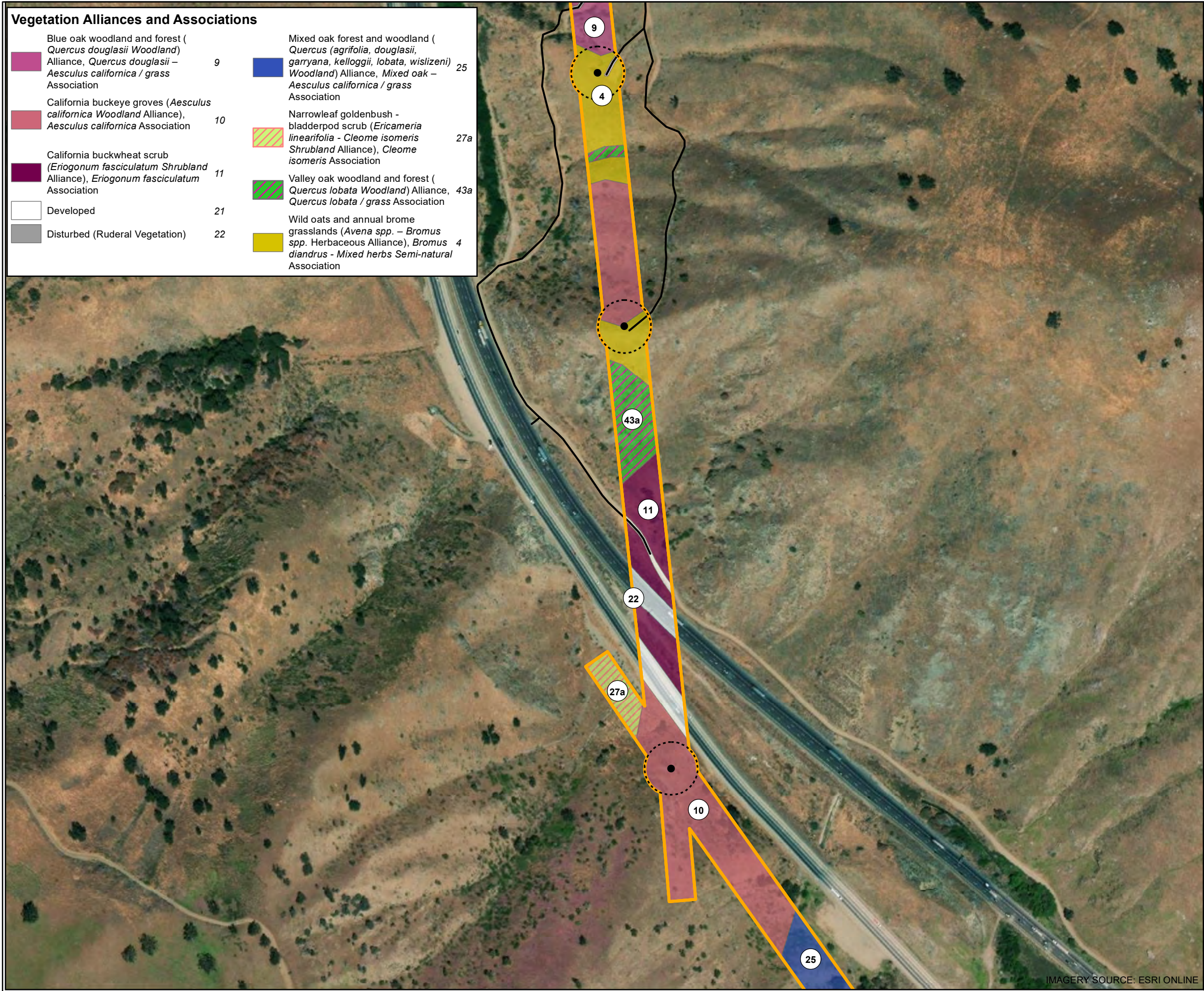
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FIGURESET  
59 of 92

IMAGERY SOURCE: ESRI ONLINE








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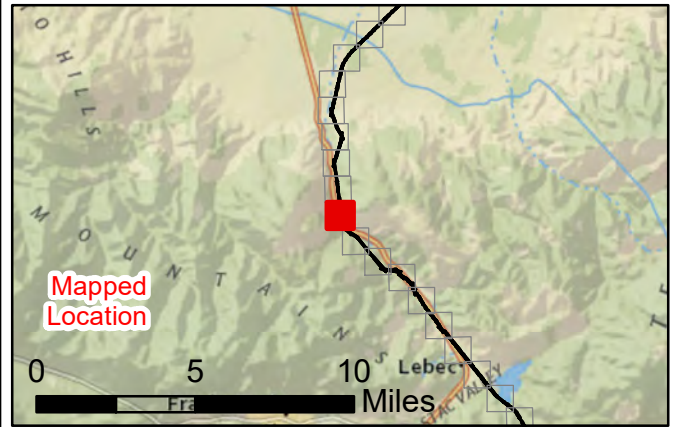
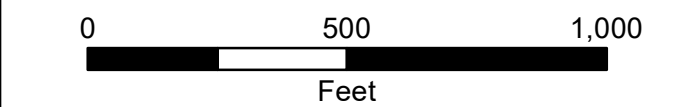


Vegetation Alliances and Associations		
 Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> – <i>Aesculus californica</i> / grass Association	9	
 California buckeye groves ( <i>Aesculus californica</i> Woodland Alliance), <i>Aesculus californica</i> Association	10	
 California buckwheat scrub ( <i>Eriogonum fasciculatum</i> Shrubland Alliance), <i>Eriogonum fasciculatum</i> Association	11	
 Developed	21	
 Disturbed (Ruderal Vegetation)	22	
 Mixed oak forest and woodland ( <i>Quercus agrifolia</i> , <i>douglasii</i> , <i>garryana</i> , <i>kelloggii</i> , <i>lobata</i> , <i>wislizeni</i> ) Woodland) Alliance, <i>Mixed oak</i> – <i>Aesculus californica</i> / grass Association	25	
 Narrowleaf goldenbush - bladderpod scrub ( <i>Ericameria linearifolia</i> - <i>Cleome isomeris</i> Shrubland Alliance), <i>Cleome isomeris</i> Association	27a	
 Valley oak woodland and forest ( <i>Quercus lobata</i> Woodland) Alliance, <i>Quercus lobata</i> / grass Association	43a	
 Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - <i>Mixed herbs</i> Semi-natural Association	4	




**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

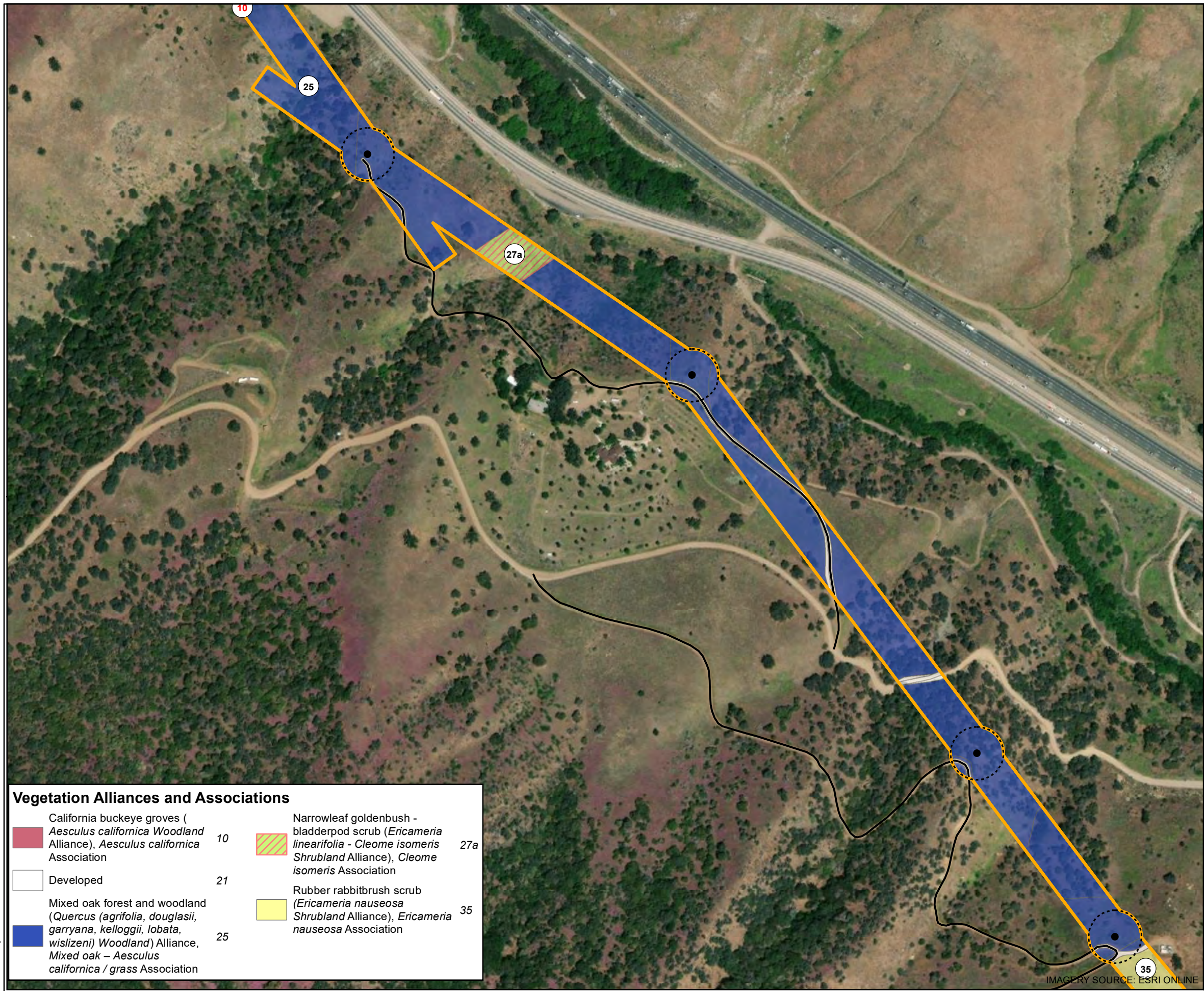
**NATURAL COMMUNITIES**



FIGURESET  
60 of 92

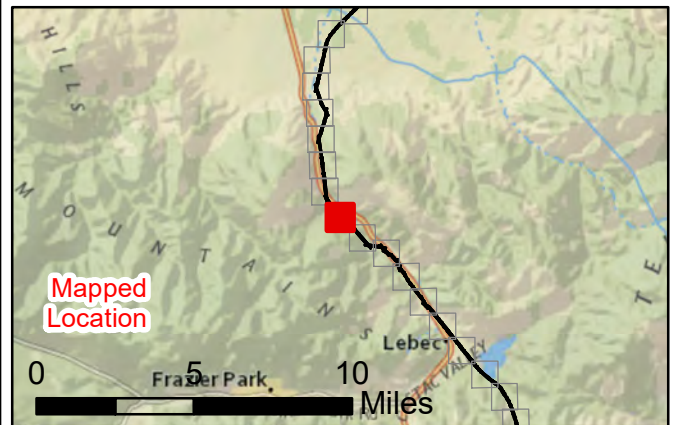
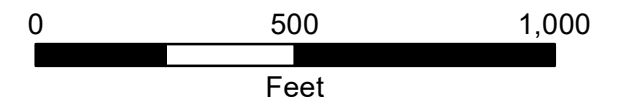


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Coordinate System: NAD 1983 UTM Zone 11N








**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**Vegetation Alliances and Associations**

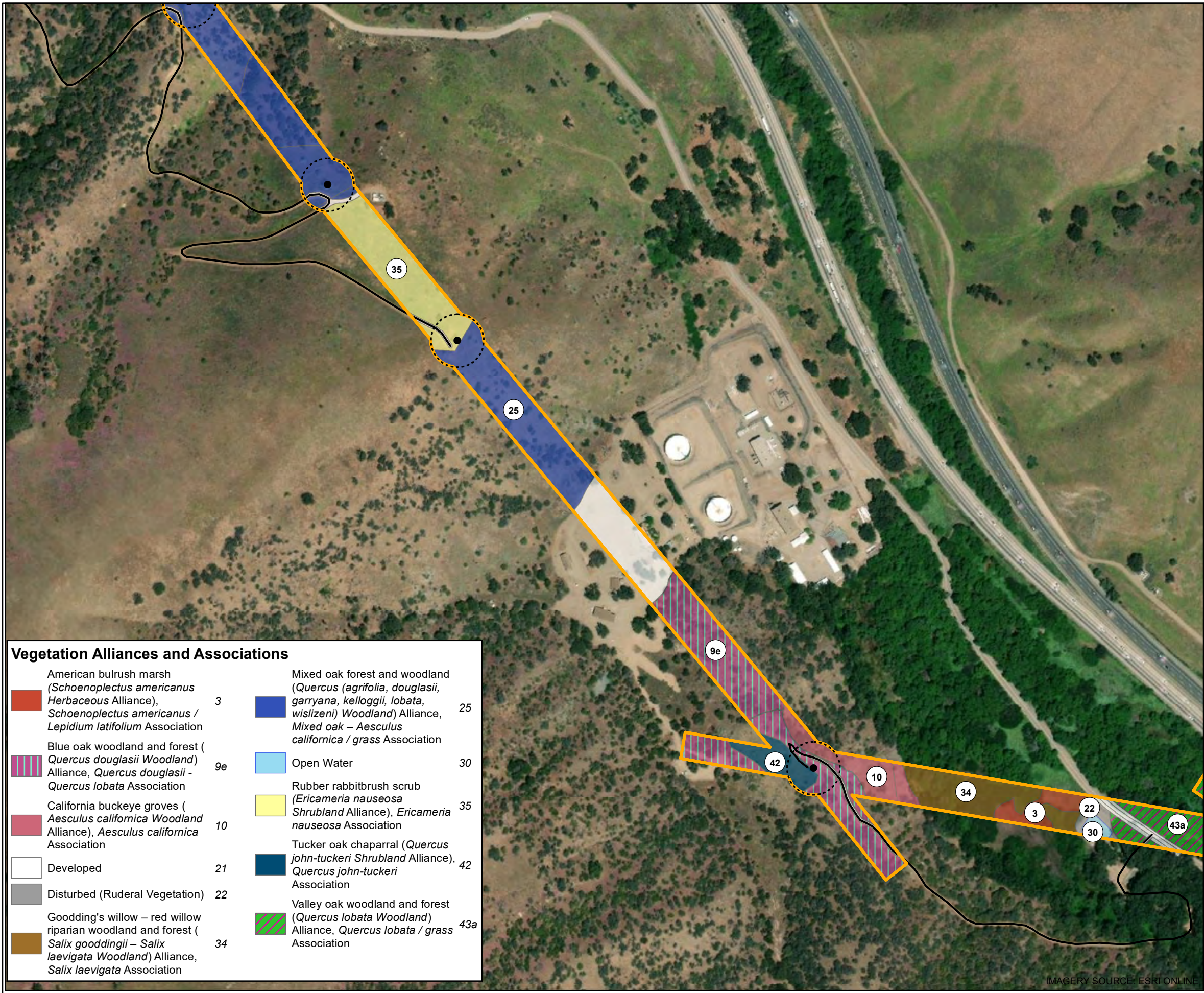
	California buckeye groves ( <i>Aesculus californica</i> Woodland Alliance), <i>Aesculus californica</i> Association	10		Narrowleaf goldenbush - bladderpod scrub ( <i>Ericameria linearifolia</i> - <i>Cleome isomeris</i> Shrubland Alliance), <i>Cleome isomeris</i> Association	27a
	Developed	21			
	Mixed oak forest and woodland ( <i>Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni)</i> Woodland) Alliance, <i>Mixed oak</i> - <i>Aesculus californica</i> / grass Association	25		Rubber rabbitbrush scrub ( <i>Ericameria nauseosa</i> Shrubland Alliance), <i>Ericameria nauseosa</i> Association	35

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



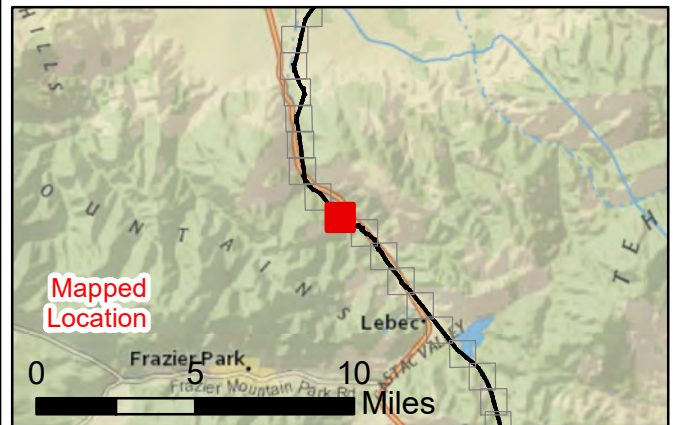
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







**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

0 500 1,000  
Feet



**Vegetation Alliances and Associations**

	American bulrush marsh ( <i>Schoenoplectus americanus</i> Herbaceous Alliance), <i>Schoenoplectus americanus</i> / <i>Lepidium latifolium</i> Association	3		Mixed oak forest and woodland ( <i>Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni)</i> Woodland) Alliance, Mixed oak – <i>Aesculus californica</i> / grass Association	25
	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> - <i>Quercus lobata</i> Association	9e		Open Water	30
	California buckeye groves ( <i>Aesculus californica</i> Woodland Alliance), <i>Aesculus californica</i> Association	10		Rubber rabbitbrush scrub ( <i>Ericameria nauseosa</i> Shrubland Alliance), <i>Ericameria nauseosa</i> Association	35
	Developed	21		Tucker oak chaparral ( <i>Quercus john-tuckeri</i> Shrubland Alliance), <i>Quercus john-tuckeri</i> Association	42
	Disturbed (Ruderal Vegetation)	22		Valley oak woodland and forest ( <i>Quercus lobata</i> Woodland) Alliance, <i>Quercus lobata</i> / grass Association	43a
	Goodding's willow – red willow riparian woodland and forest ( <i>Salix gooddingii</i> – <i>Salix laevigata</i> Woodland) Alliance, <i>Salix laevigata</i> Association	34			

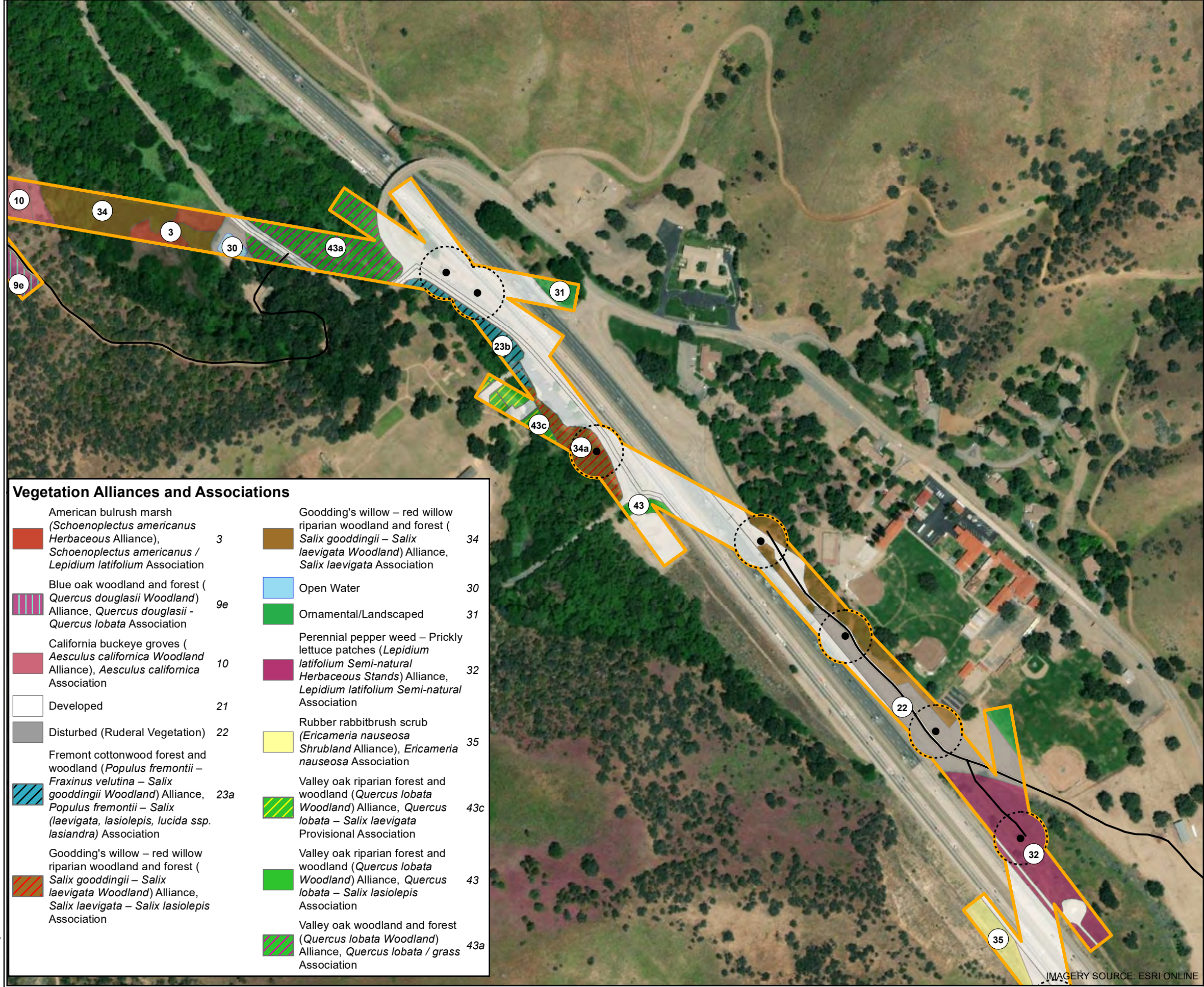
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




**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**




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Coordinate System: NAD 1983 UTM Zone 11N




Vegetation Alliances and Associations		
	American bulrush marsh ( <i>Schoenoplectus americanus</i> Herbaceous Alliance), <i>Schoenoplectus americanus</i> / <i>Lepidium latifolium</i> Association	3
	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> - <i>Quercus lobata</i> Association	9e
	California buckeye groves ( <i>Aesculus californica</i> Woodland Alliance), <i>Aesculus californica</i> Association	10
	Developed	21
	Disturbed (Ruderal Vegetation)	22
	Fremont cottonwood forest and woodland ( <i>Populus fremontii</i> – <i>Fraxinus velutina</i> – <i>Salix gooddingii</i> Woodland) Alliance, <i>Populus fremontii</i> – <i>Salix (laevigata, lasiolepis, lucida ssp. lasiandra)</i> Association	23a
	Goodding's willow – red willow riparian woodland and forest ( <i>Salix gooddingii</i> – <i>Salix laevigata</i> Woodland) Alliance, <i>Salix laevigata</i> – <i>Salix lasiolepis</i> Association	
	Goodding's willow – red willow riparian woodland and forest ( <i>Salix gooddingii</i> – <i>Salix laevigata</i> Woodland) Alliance, <i>Salix laevigata</i> Association	34
	Open Water	30
	Ornamental/Landscaped	31
	Perennial pepper weed – Prickly lettuce patches ( <i>Lepidium latifolium</i> Semi-natural Herbaceous Stands) Alliance, <i>Lepidium latifolium</i> Semi-natural Association	32
	Rubber rabbitbrush scrub ( <i>Ericameria nauseosa</i> Shrubland Alliance), <i>Ericameria nauseosa</i> Association	35
	Valley oak riparian forest and woodland ( <i>Quercus lobata</i> Woodland) Alliance, <i>Quercus lobata</i> – <i>Salix laevigata</i> Provisional Association	43c
	Valley oak riparian forest and woodland ( <i>Quercus lobata</i> Woodland) Alliance, <i>Quercus lobata</i> – <i>Salix lasiolepis</i> Association	43
	Valley oak woodland and forest ( <i>Quercus lobata</i> Woodland) Alliance, <i>Quercus lobata</i> / grass Association	43a


LEGEND




STRUCTURE LOCATION




100 FOOT RADIUS TOWER BUFFER



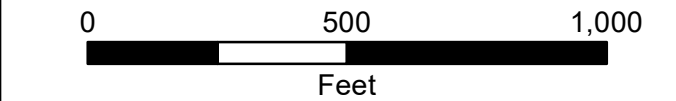
SUBSTATION LOCATION



ACCESS ROADS

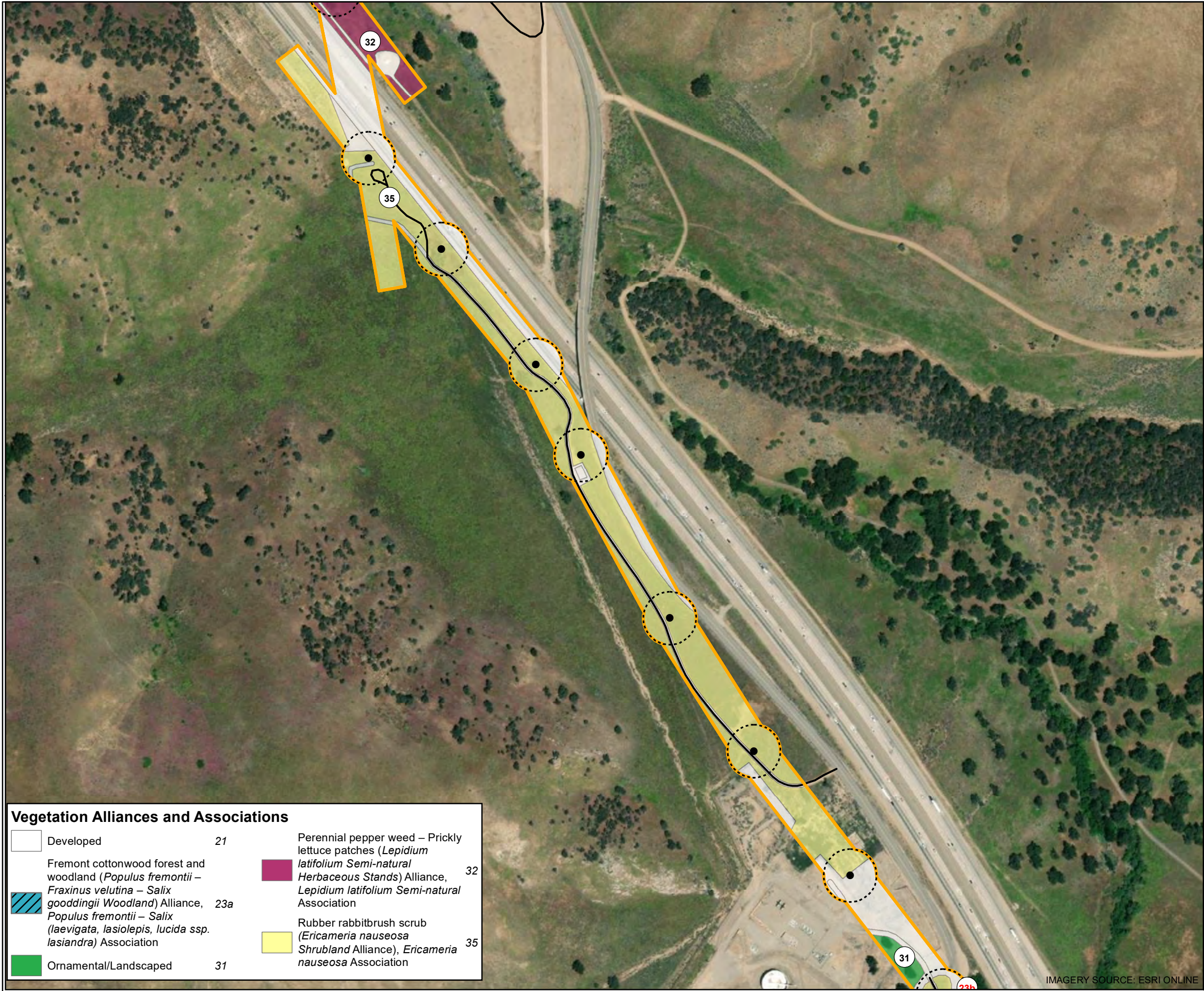


SURVEY AREA



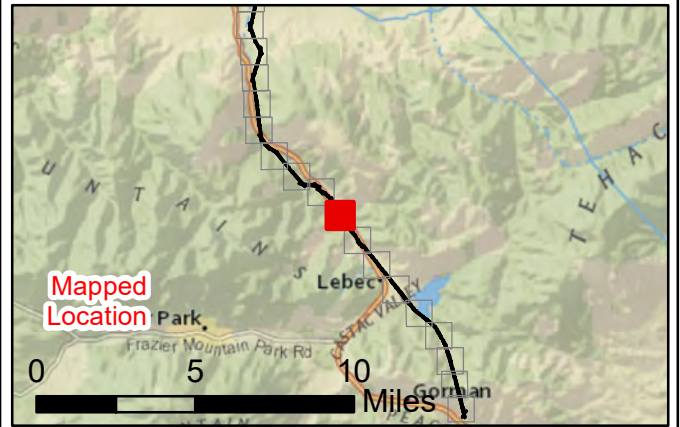
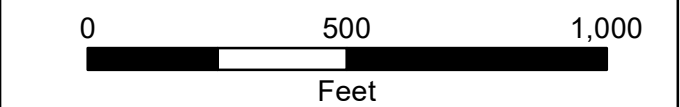







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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

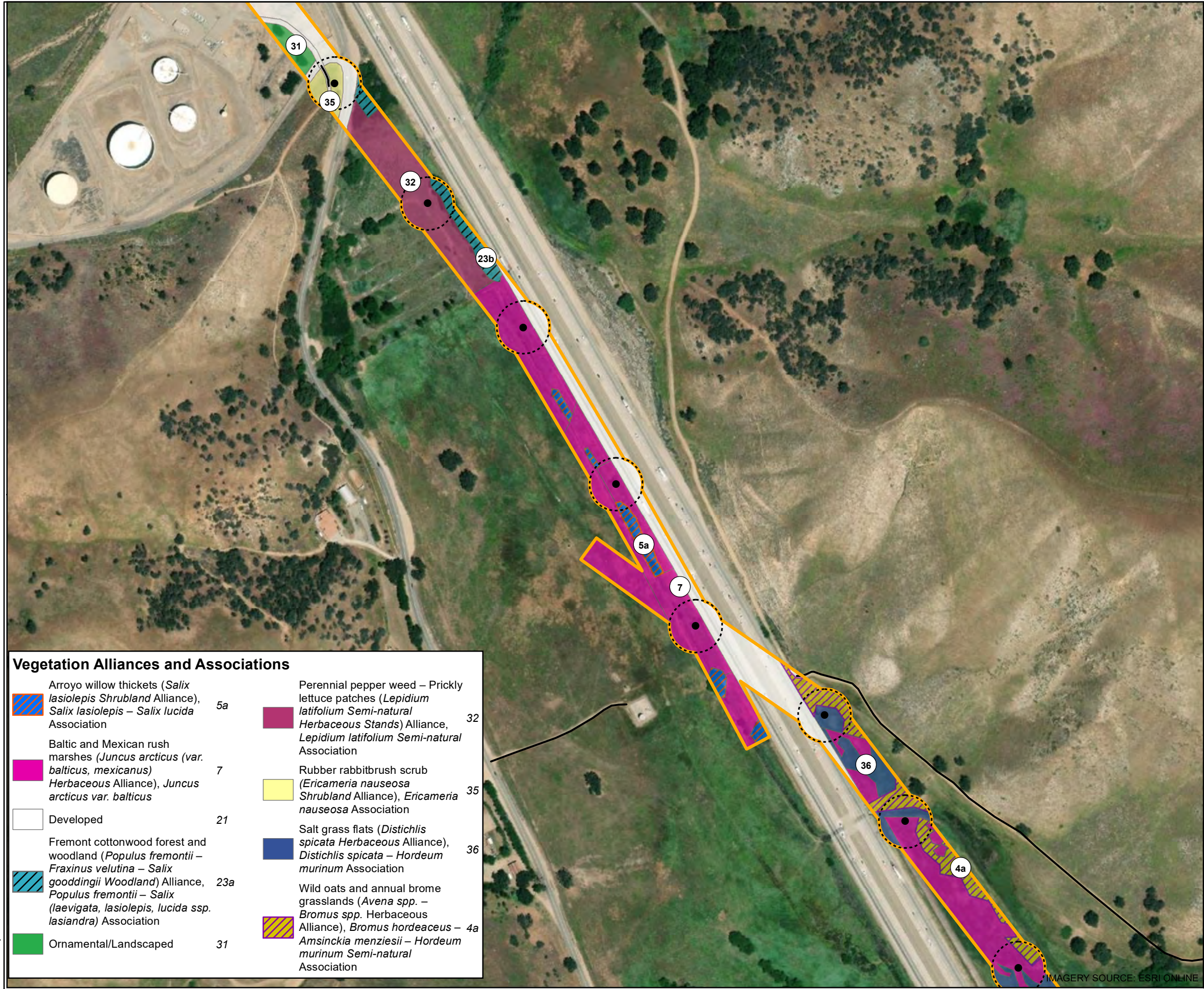


Vegetation Alliances and Associations			
	Developed	21	
	Fremont cottonwood forest and woodland ( <i>Populus fremontii</i> – <i>Fraxinus velutina</i> – <i>Salix gooddingii</i> Woodland) Alliance, <i>Populus fremontii</i> – <i>Salix (laevigata, lasiolepis, lucida ssp. lasiandra)</i> Association	23a	
	Ornamental/Landscaped	31	
	Perennial pepper weed – Prickly lettuce patches ( <i>Lepidium latifolium</i> Semi-natural Herbaceous Stands) Alliance, <i>Lepidium latifolium</i> Semi-natural Association	32	
	Rubber rabbitbrush scrub ( <i>Ericameria nauseosa</i> Shrubland Alliance), <i>Ericameria nauseosa</i> Association	35	


IMAGERY SOURCE: ESRI ONLINE





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LEGEND

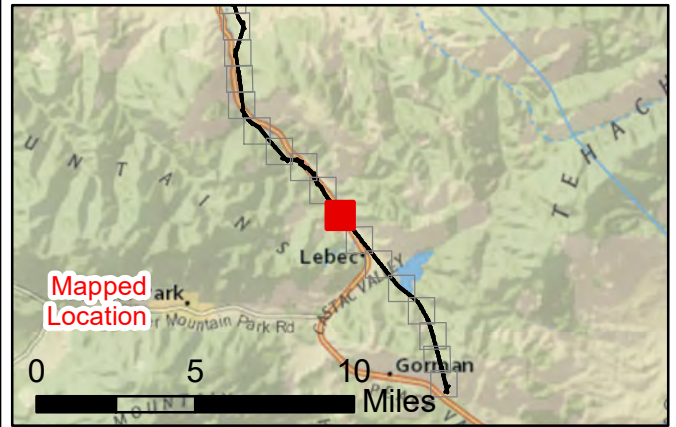
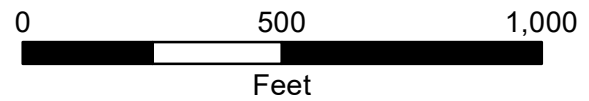
 STRUCTURE LOCATION

 100 FOOT RADIUS TOWER BUFFER










 SUBSTATION LOCATION

 ACCESS ROADS

 SURVEY AREA



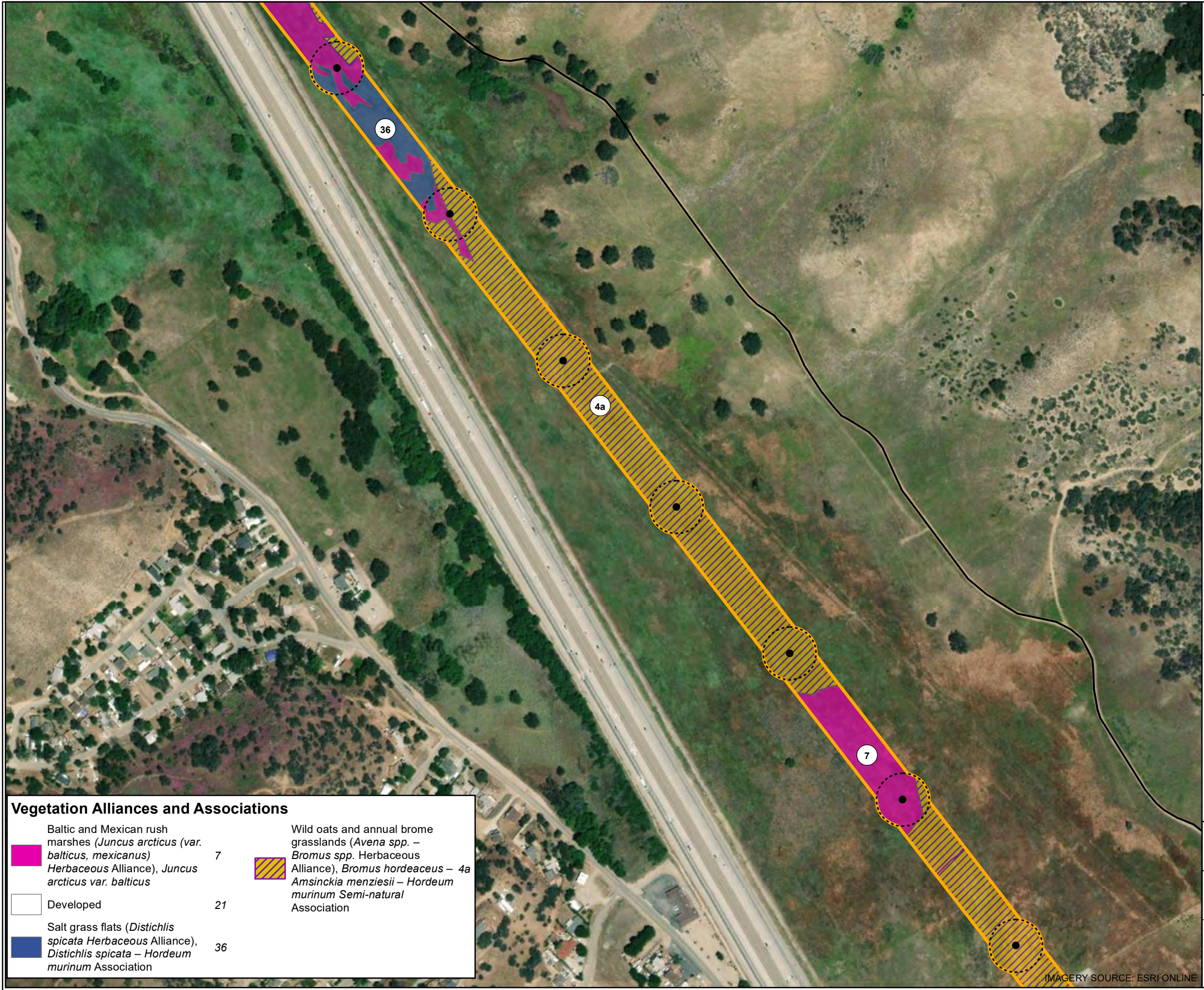
**Vegetation Alliances and Associations**

	Arroyo willow thickets ( <i>Salix lasiolepis</i> Shrubland Alliance), <i>Salix lasiolepis</i> – <i>Salix lucida</i> Association	5a		Perennial pepper weed – Prickly lettuce patches ( <i>Lepidium latifolium</i> Semi-natural Herbaceous Stands) Alliance, <i>Lepidium latifolium</i> Semi-natural Association	32
	Baltic and Mexican rush marshes ( <i>Juncus arcticus</i> (var. <i>balticus</i> , <i>mexicanus</i> ) Herbaceous Alliance), <i>Juncus arcticus</i> var. <i>balticus</i>	7		Rubber rabbitbrush scrub ( <i>Ericameria nauseosa</i> Shrubland Alliance), <i>Ericameria nauseosa</i> Association	35
	Developed	21		Salt grass flats ( <i>Distichlis spicata</i> Herbaceous Alliance), <i>Distichlis spicata</i> – <i>Hordeum murinum</i> Association	36
	Fremont cottonwood forest and woodland ( <i>Populus fremontii</i> – <i>Fraxinus velutina</i> – <i>Salix gooddingii</i> Woodland) Alliance, <i>Populus fremontii</i> – <i>Salix (laevigata, lasiolepis, lucida ssp. lasiandra)</i> Association	23a		Wild oats and annual brome grasslands ( <i>Avena spp.</i> – <i>Bromus spp.</i> Herbaceous Alliance), <i>Bromus hordeaceus</i> – <i>Amsinckia menziesii</i> – <i>Hordeum murinum</i> Semi-natural Association	4a
	Ornamental/Landscaped	31			

IMAGERY SOURCE: ESRI ONLINE

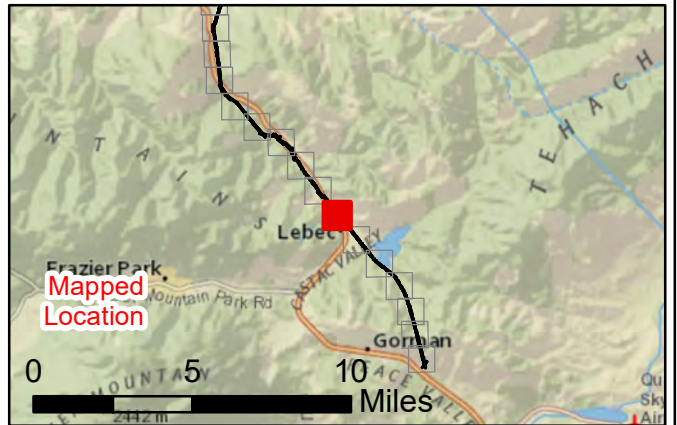
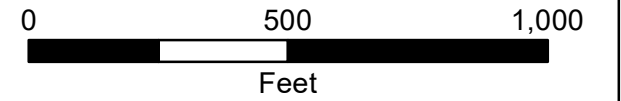


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Coordinate System: NAD 1983 UTM Zone 11N







**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**Vegetation Alliances and Associations**

	Baltic and Mexican rush marshes ( <i>Juncus arcticus</i> (var. <i>balticus</i> , <i>mexicanus</i> ) Herbaceous Alliance), <i>Juncus arcticus</i> var. <i>balticus</i>	7		Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus hordeaceus</i> – 4a
	Developed	21		<i>Amsinckia menziesii</i> – <i>Hordeum murinum</i> Semi-natural Association
	Salt grass flats ( <i>Distichlis spicata</i> Herbaceous Alliance), <i>Distichlis spicata</i> – <i>Hordeum murinum</i> Association	36		

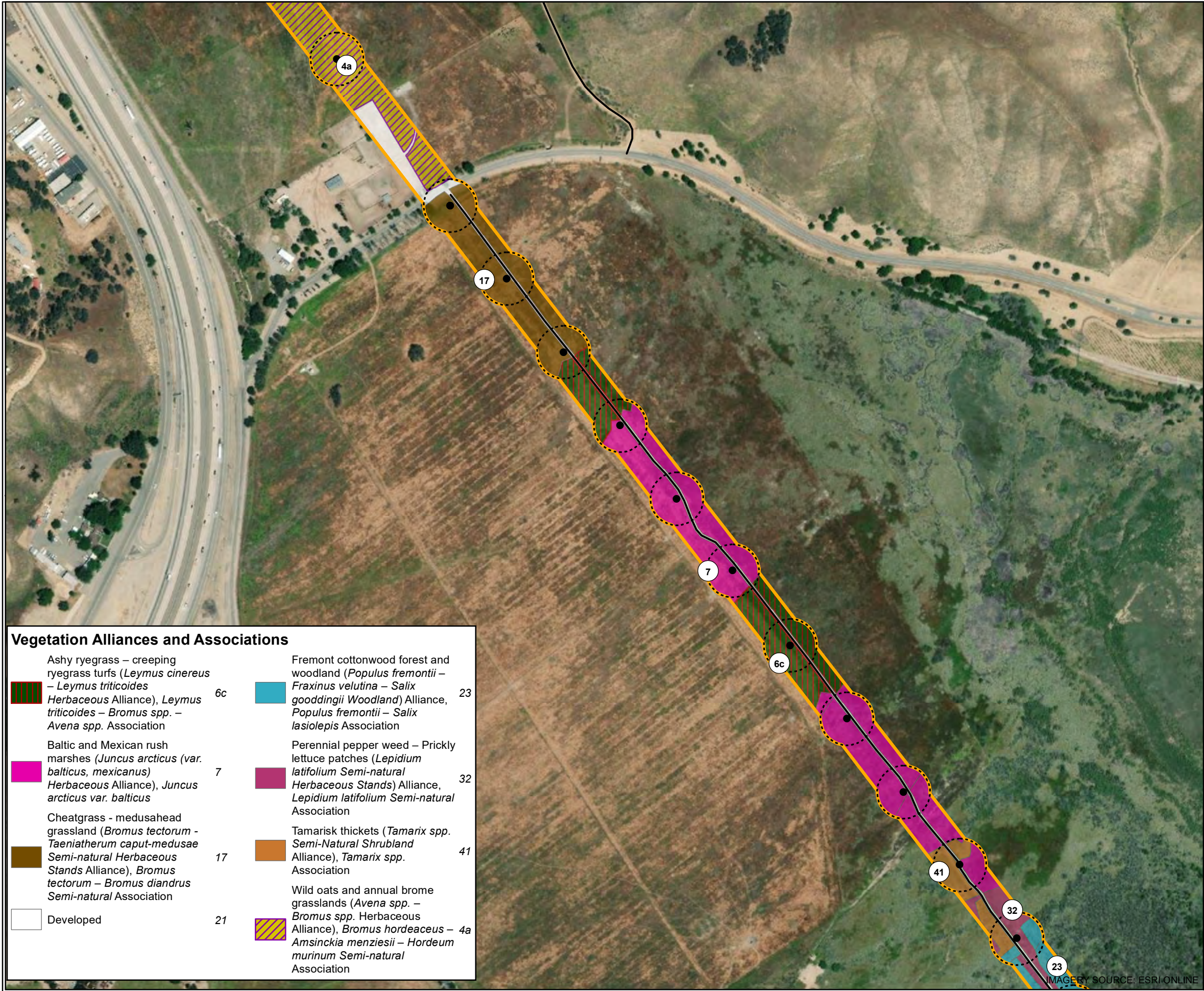
IMAGERY SOURCE: ESRI ONLINE

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



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LEGEND

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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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SUBSTATION LOCATION

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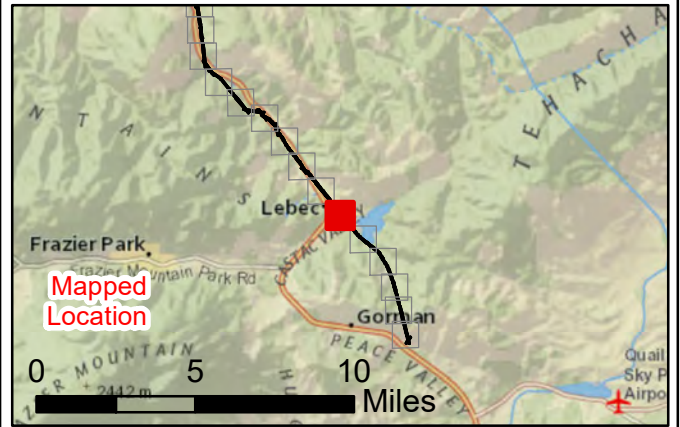
ACCESS ROADS

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SURVEY AREA

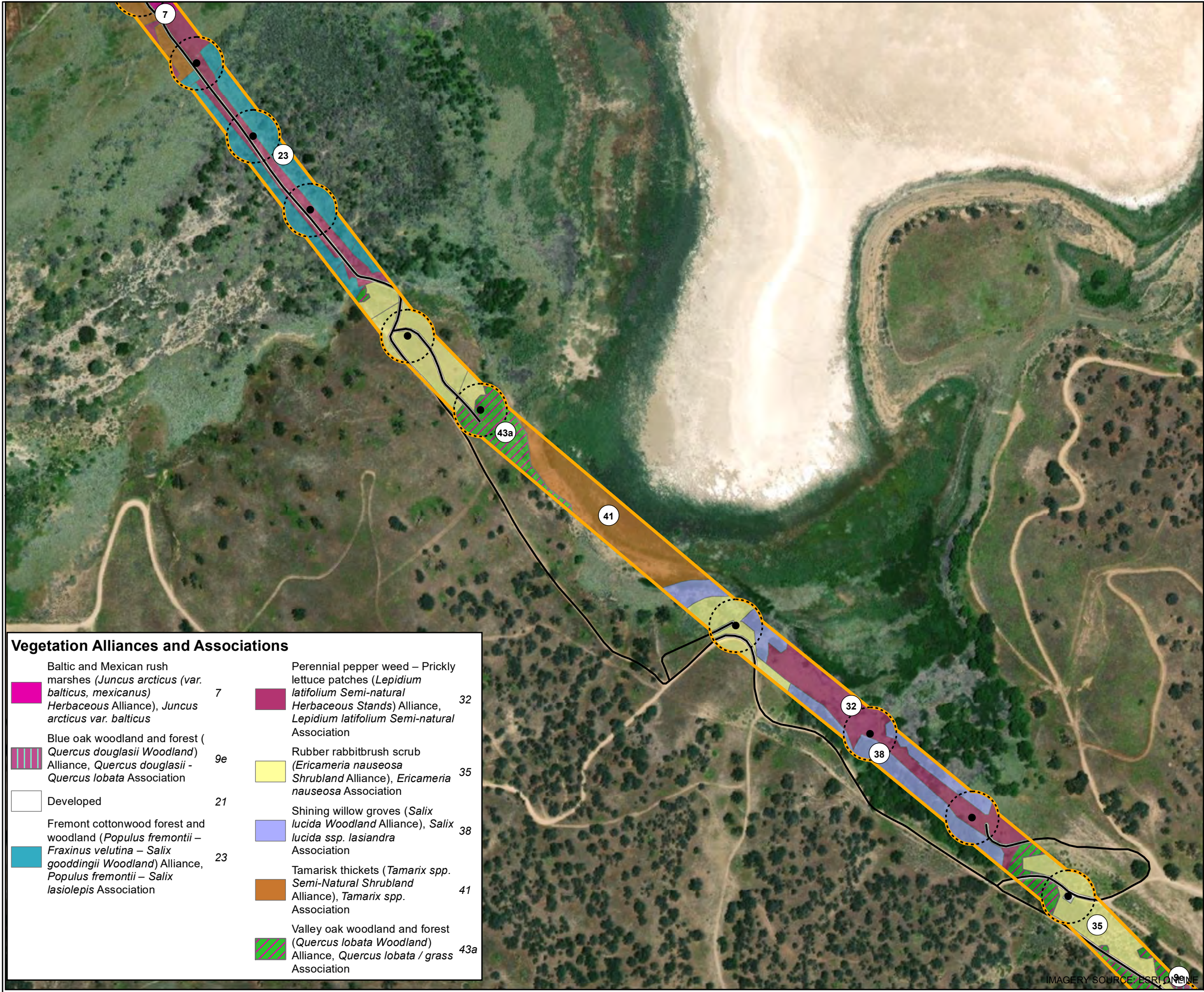
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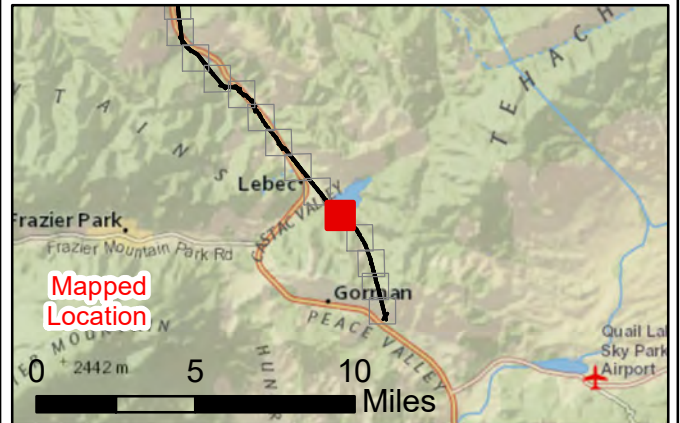
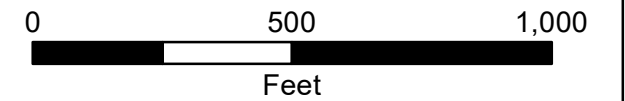


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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**Vegetation Alliances and Associations**

	Baltic and Mexican rush marshes ( <i>Juncus arcticus</i> (var. <i>balticus</i> , <i>mexicanus</i> ) Herbaceous Alliance), <i>Juncus arcticus</i> var. <i>balticus</i>	7		Perennial pepper weed – Prickly lettuce patches ( <i>Lepidium latifolium</i> Semi-natural Herbaceous Stands) Alliance, <i>Lepidium latifolium</i> Semi-natural Association	32
	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> - <i>Quercus lobata</i> Association	9e		Rubber rabbitbrush scrub ( <i>Ericameria nauseosa</i> Shrubland Alliance), <i>Ericameria nauseosa</i> Association	35
	Developed	21		Shining willow groves ( <i>Salix lucida</i> Woodland Alliance), <i>Salix lucida</i> ssp. <i>lasiandra</i> Association	38
	Fremont cottonwood forest and woodland ( <i>Populus fremontii</i> – <i>Fraxinus velutina</i> – <i>Salix gooddingii</i> Woodland) Alliance, <i>Populus fremontii</i> – <i>Salix lasiolepis</i> Association	23		Tamarisk thickets ( <i>Tamarix</i> spp. Semi-Natural Shrubland Alliance), <i>Tamarix</i> spp. Association	41
				Valley oak woodland and forest ( <i>Quercus lobata</i> Woodland) Alliance, <i>Quercus lobata</i> / grass Association	43a

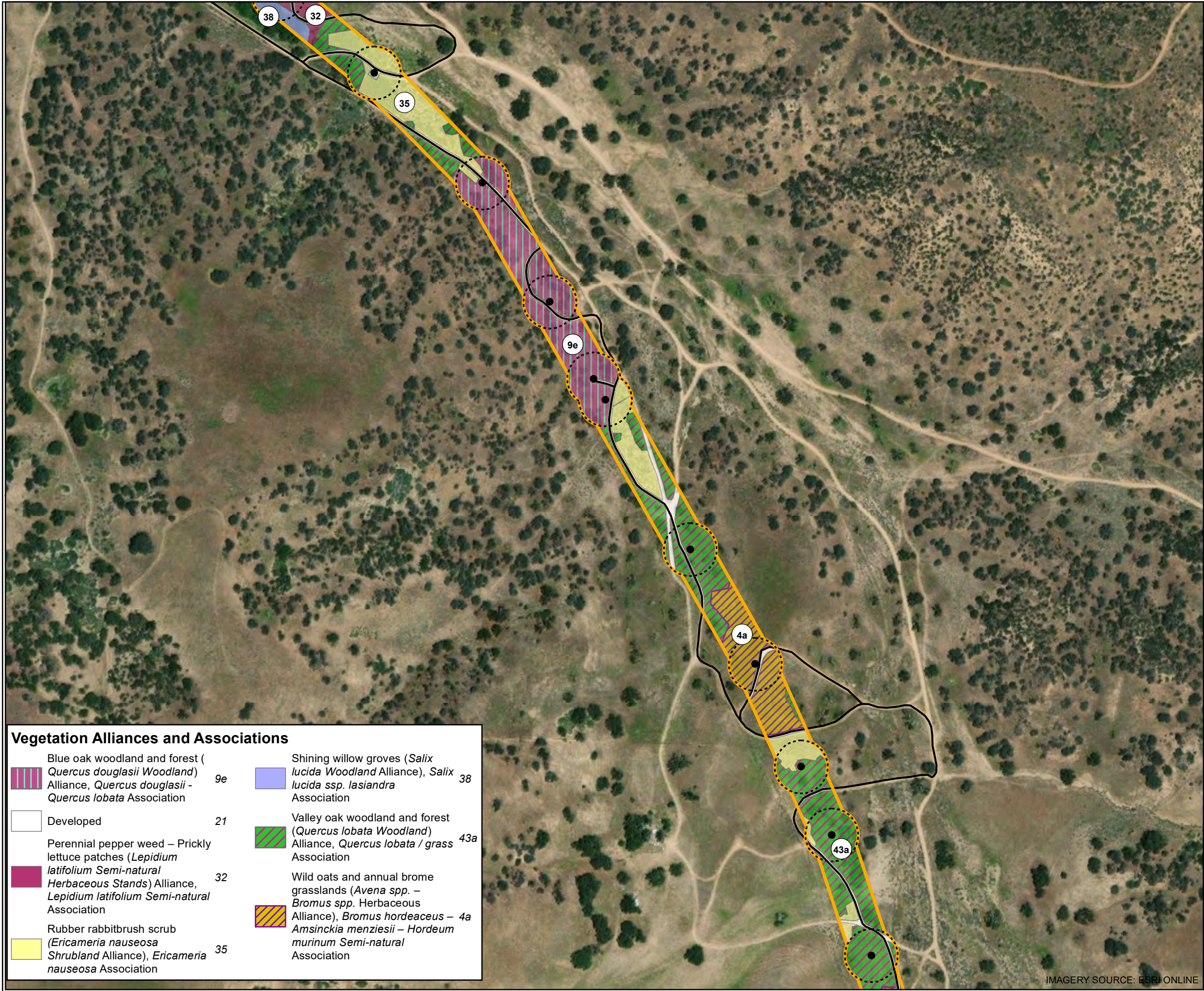
IMAGERY SOURCE: ESRI ONLINE

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



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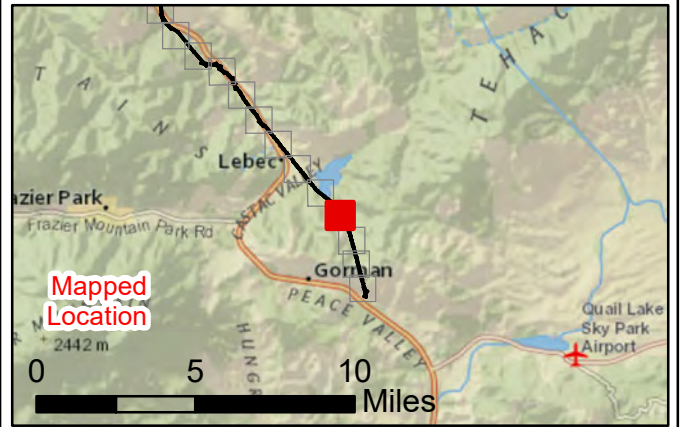
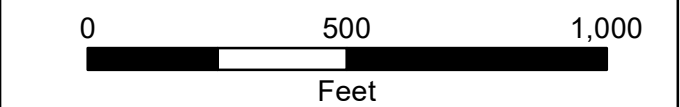
 STRUCTURE LOCATION








 100 FOOT RADIUS TOWER BUFFER

 SUBSTATION LOCATION

 ACCESS ROADS

 SURVEY AREA




Vegetation Alliances and Associations		
	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> - <i>Quercus lobata</i> Association	9e
	Developed	21
	Perennial pepper weed - Prickly lettuce patches ( <i>Lepidium latifolium</i> Semi-natural Herbaceous Stands) Alliance, <i>Lepidium latifolium</i> Semi-natural Association	32
	Rubber rabbitbrush scrub ( <i>Ericameria nauseosa</i> Shrubland Alliance), <i>Ericameria nauseosa</i> Association	35
	Shining willow groves ( <i>Salix lucida</i> Woodland Alliance), <i>Salix lucida</i> ssp. <i>lasiandra</i> Association	38
	Valley oak woodland and forest ( <i>Quercus lobata</i> Woodland) Alliance, <i>Quercus lobata</i> / grass Association	43a
	Wild oats and annual brome grasslands ( <i>Avena</i> spp. - <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus hordeaceus</i> - <i>Amsinckia menziesii</i> - <i>Hordeum murinum</i> Semi-natural Association	4a

IMAGERY SOURCE: ESRI ONLINE

GORMAN-KERN RIVER  
66 kV PROJECT

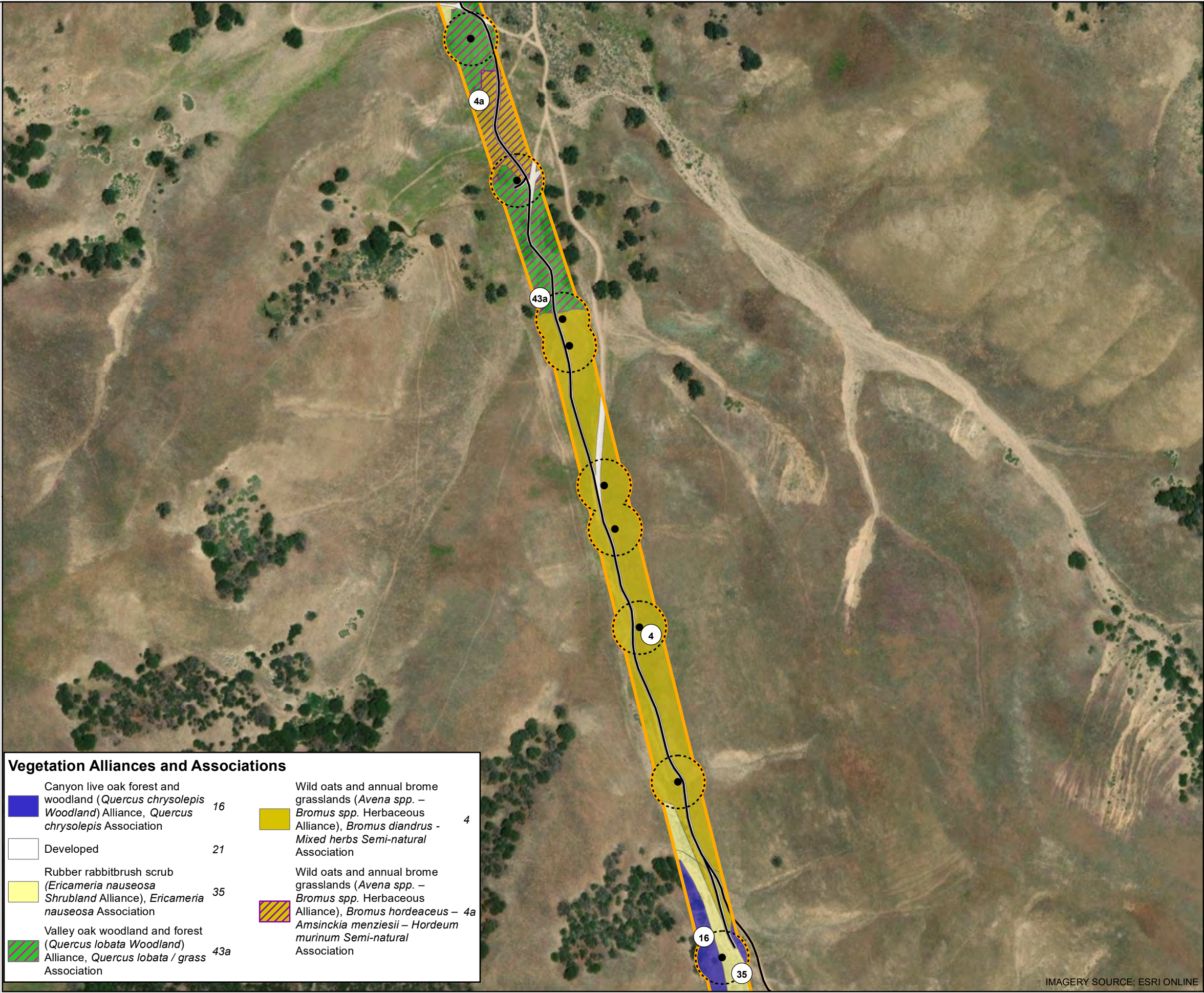
NATURAL COMMUNITIES



FIGURESET  
69 of 92

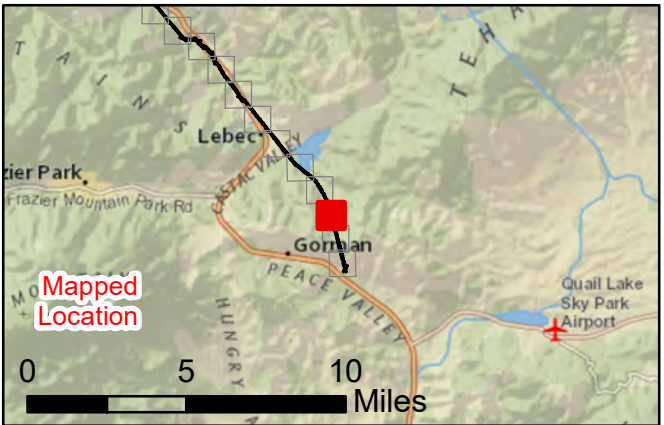
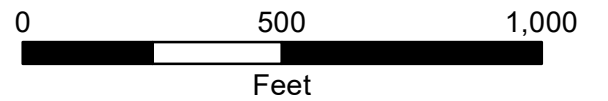


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LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



Vegetation Alliances and Associations

<div></div> Canyon live oak forest and woodland ( <i>Quercus chrysolepis</i> Woodland) Alliance, <i>Quercus chrysolepis</i> Association	16	<div></div> Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4
<div></div> Developed	21	<div></div> Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus hordeaceus</i> – 4a <i>Amsinckia menziesii</i> – <i>Hordeum murinum</i> Semi-natural Association	
<div></div> Rubber rabbitbrush scrub ( <i>Ericameria nauseosa</i> Shrubland Alliance), <i>Ericameria nauseosa</i> Association	35		
<div></div> Valley oak woodland and forest ( <i>Quercus lobata</i> Woodland) Alliance, <i>Quercus lobata</i> / grass Association	43a		

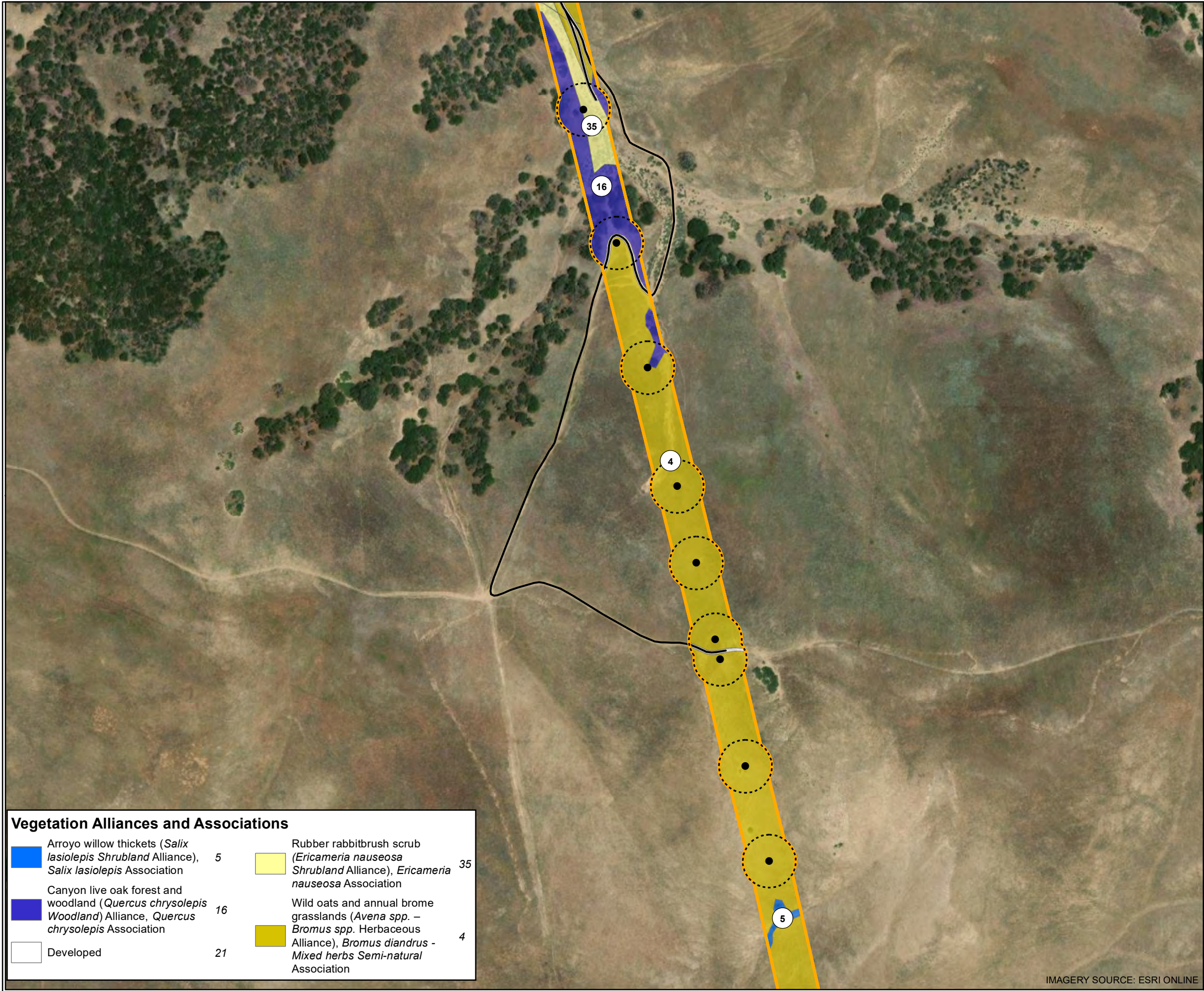
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GORMAN-KERN RIVER  
66 kV PROJECT

NATURAL COMMUNITIES



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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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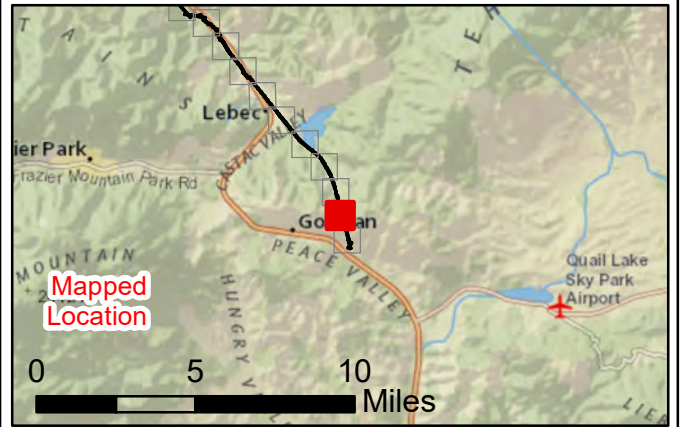
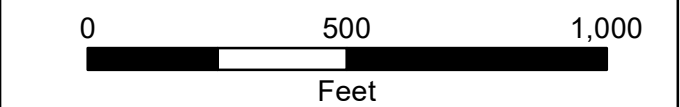
SUBSTATION LOCATION

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SURVEY AREA

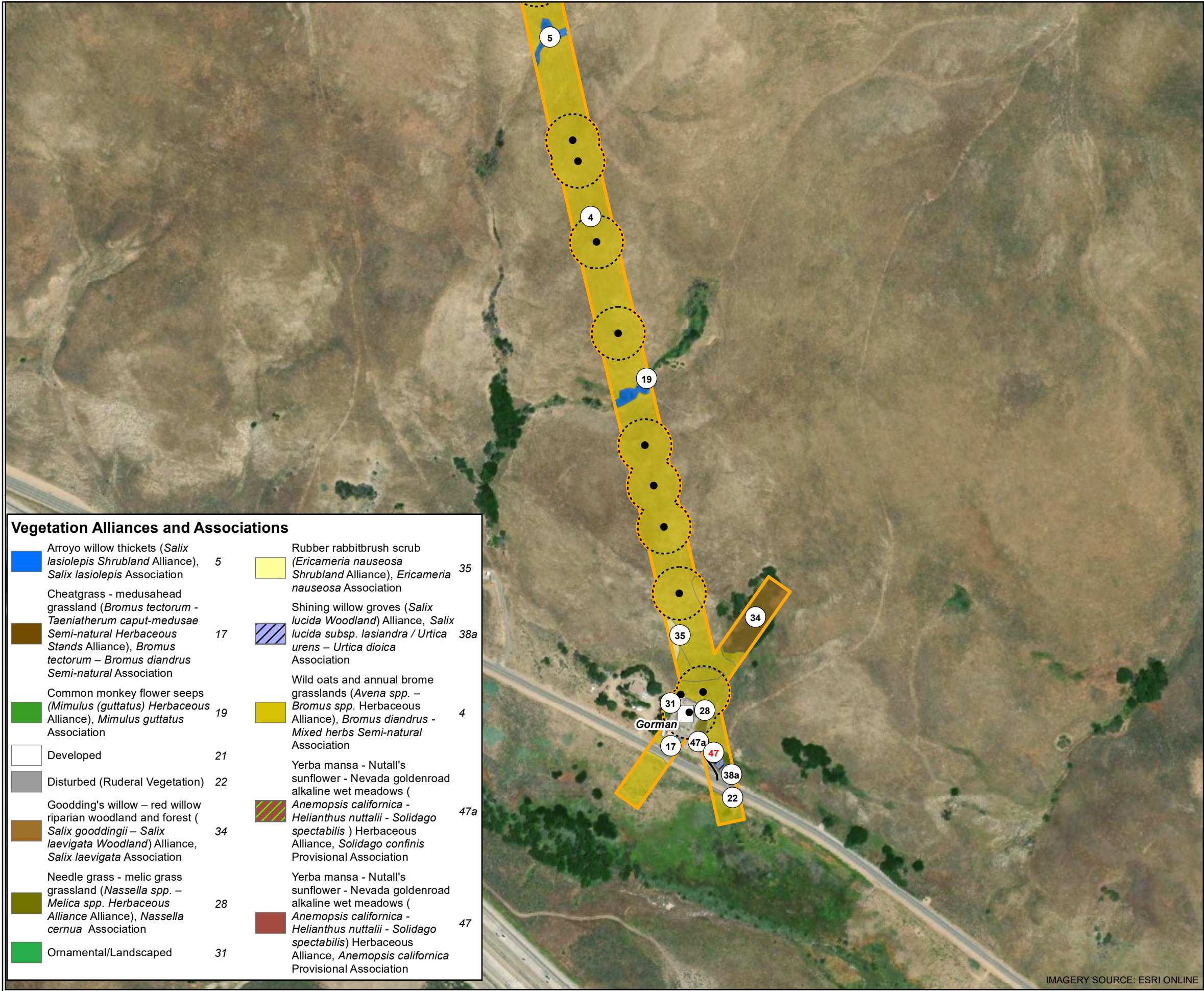















Vegetation Alliances and Associations			
<div></div> Arroyo willow thickets ( <i>Salix lasiolepis</i> Shrubland Alliance), <i>Salix lasiolepis</i> Association	5	<div></div> Rubber rabbitbrush scrub ( <i>Ericameria nauseosa</i> Shrubland Alliance), <i>Ericameria nauseosa</i> Association	35
<div></div> Canyon live oak forest and woodland ( <i>Quercus chrysolepis</i> Woodland) Alliance, <i>Quercus chrysolepis</i> Association	16	<div></div> Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4
<div></div> Developed	21		

IMAGERY SOURCE: ESRI ONLINE




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Vegetation Alliances and Associations		
	Arroyo willow thickets ( <i>Salix lasiolepis</i> Shrubland Alliance), <i>Salix lasiolepis</i> Association	5
	Cheatgrass - medusahead grassland ( <i>Bromus tectorum</i> - <i>Taeniatherum caput-medusae</i> Semi-natural Herbaceous Stands Alliance), <i>Bromus tectorum</i> - <i>Bromus diandrus</i> Semi-natural Association	17
	Common monkey flower seeps ( <i>Mimulus (guttatus) Herbaceous Alliance</i> ), <i>Mimulus guttatus</i> Association	19
	Developed	21
	Disturbed (Ruderal Vegetation)	22
	Goodding's willow - red willow riparian woodland and forest ( <i>Salix gooddingii</i> - <i>Salix laevigata</i> Woodland) Alliance, <i>Salix laevigata</i> Association	34
	Needle grass - melic grass grassland ( <i>Nassella spp.</i> - <i>Melica spp.</i> Herbaceous Alliance Alliance), <i>Nassella cernua</i> Association	28
	Ornamental/Landscaped	31
	Rubber rabbitbrush scrub ( <i>Ericameria nauseosa</i> Shrubland Alliance), <i>Ericameria nauseosa</i> Association	35
	Shining willow groves ( <i>Salix lucida</i> Woodland) Alliance, <i>Salix lucida</i> subsp. <i>lasiandra</i> / <i>Urtica urens</i> - <i>Urtica dioica</i> Association	38a
	Wild oats and annual brome grasslands ( <i>Avena spp.</i> - <i>Bromus spp.</i> Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4
	Yerba mansa - Nutall's sunflower - Nevada goldenroad alkaline wet meadows ( <i>Anemopsis californica</i> - <i>Helianthus nuttallii</i> - <i>Solidago spectabilis</i> ) Herbaceous Alliance, <i>Solidago confinis</i> Provisional Association	47a
	Yerba mansa - Nutall's sunflower - Nevada goldenroad alkaline wet meadows ( <i>Anemopsis californica</i> - <i>Helianthus nuttallii</i> - <i>Solidago spectabilis</i> ) Herbaceous Alliance, <i>Anemopsis californica</i> Provisional Association	47


LEGEND




STRUCTURE LOCATION




100 FOOT RADIUS TOWER BUFFER



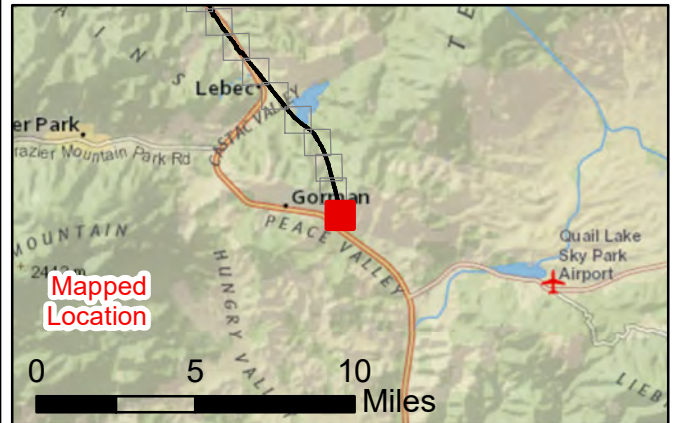
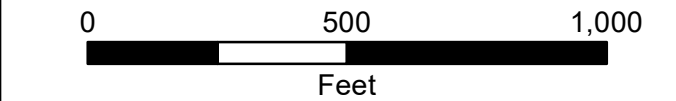
SUBSTATION LOCATION



ACCESS ROADS

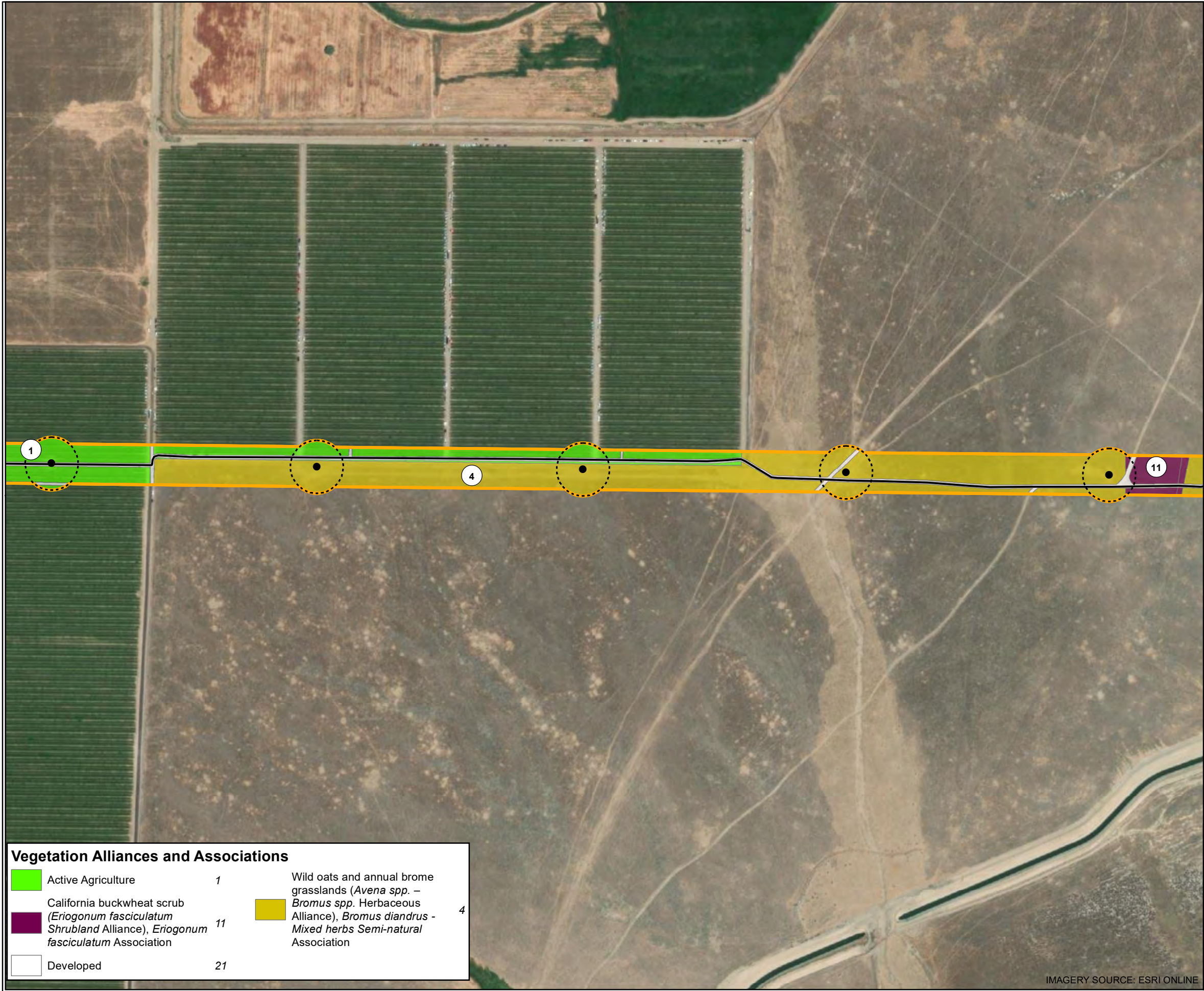


SURVEY AREA





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LEGEND

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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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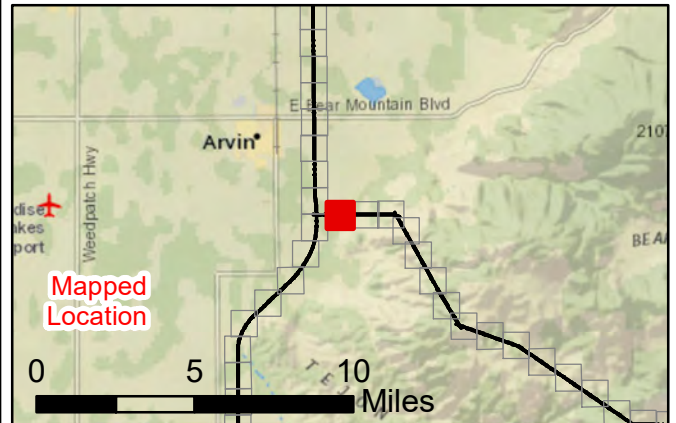
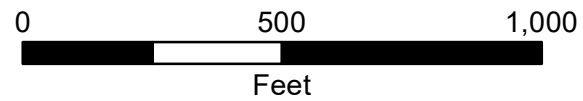
SUBSTATION LOCATION

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ACCESS ROADS

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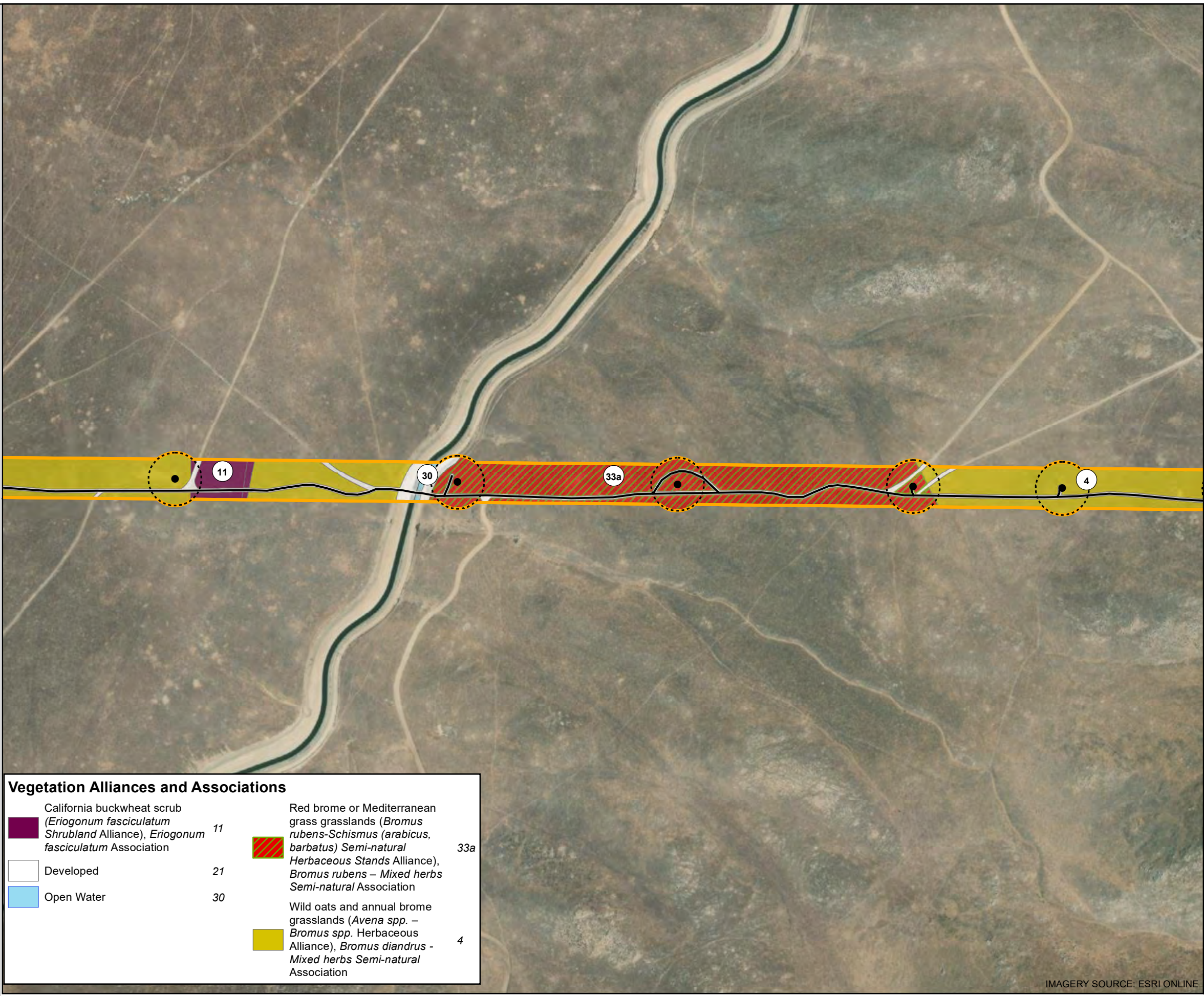
SURVEY AREA



Vegetation Alliances and Associations			
<div></div>	Active Agriculture	1	Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association
<div></div>	California buckwheat scrub ( <i>Eriogonum fasciculatum</i> Shrubland Alliance), <i>Eriogonum fasciculatum</i> Association	11	
<div></div>	Developed	21	

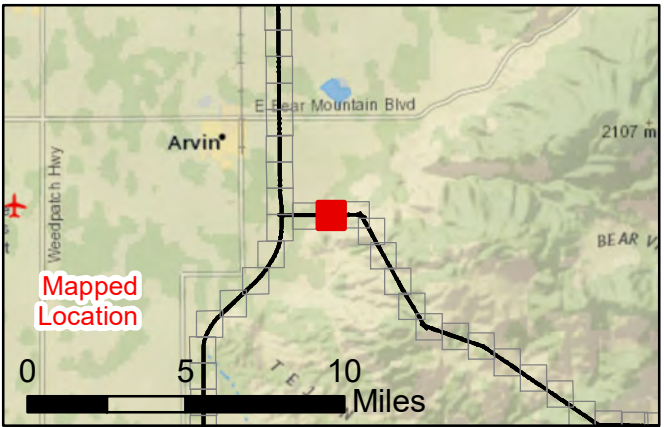
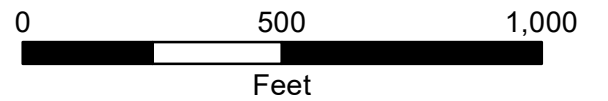







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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
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Vegetation Alliances and Associations			
	California buckwheat scrub ( <i>Eriogonum fasciculatum</i> Shrubland Alliance), <i>Eriogonum fasciculatum</i> Association	11	
	Developed	21	
	Open Water	30	
	Red brome or Mediterranean grass grasslands ( <i>Bromus rubens</i> - <i>Schismus (arabicus, barbatus)</i> Semi-natural Herbaceous Stands Alliance), <i>Bromus rubens</i> – Mixed herbs Semi-natural Association	33a	
	Wild oats and annual brome grasslands ( <i>Avena spp.</i> – <i>Bromus spp.</i> Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4	

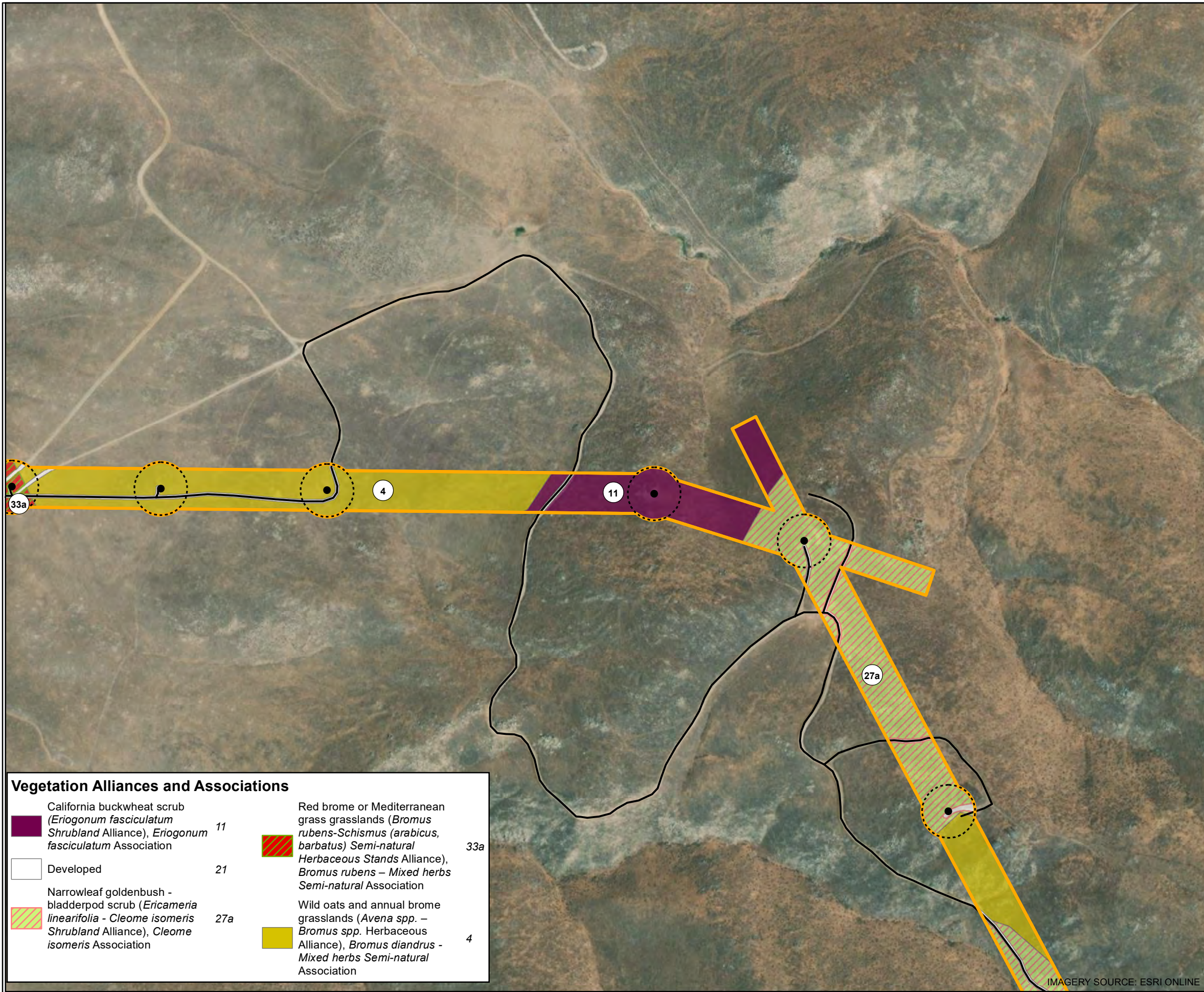
IMAGERY SOURCE: ESRI ONLINE

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**




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**Vegetation Alliances and Associations**


California buckwheat scrub ( <i>Eriogonum fasciculatum</i> Shrubland Alliance), <i>Eriogonum fasciculatum</i> Association	11	Red brome or Mediterranean grass grasslands ( <i>Bromus rubens</i> - <i>Schismus (arabicus, barbatus)</i> Semi-natural Herbaceous Stands Alliance), <i>Bromus rubens</i> – Mixed herbs Semi-natural Association	33a
Developed	21	Wild oats and annual brome grasslands ( <i>Avena spp.</i> – <i>Bromus spp.</i> Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4
Narrowleaf goldenbush - bladderpod scrub ( <i>Ericameria linearifolia</i> - <i>Cleome isomeris</i> Shrubland Alliance), <i>Cleome isomeris</i> Association	27a		



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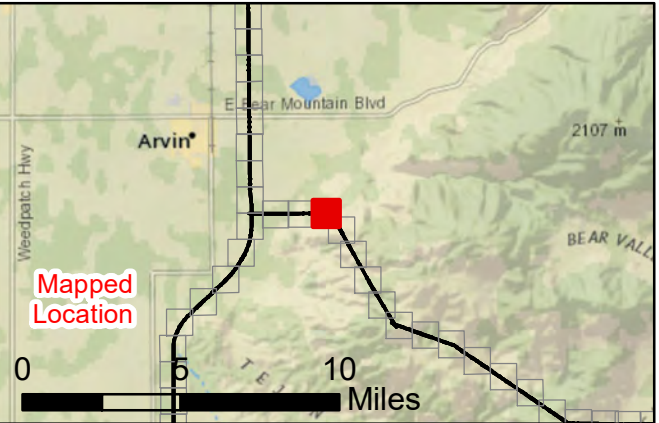
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- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- SURVEY AREA

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**GORMAN-KERN RIVER**

**66 kV PROJECT**

**NATURAL COMMUNITIES**



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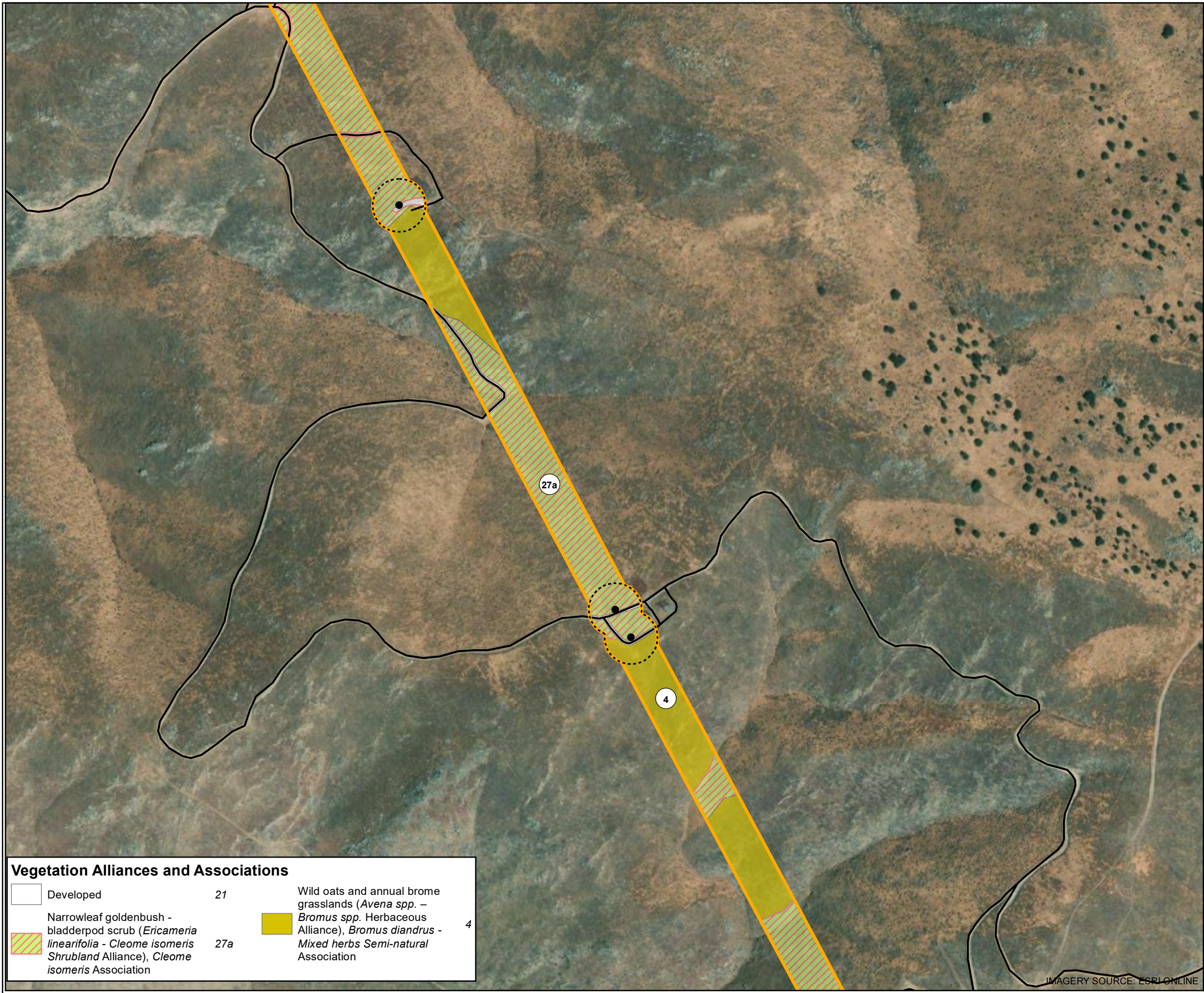
FIGURESET

75 of 92

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LEGEND

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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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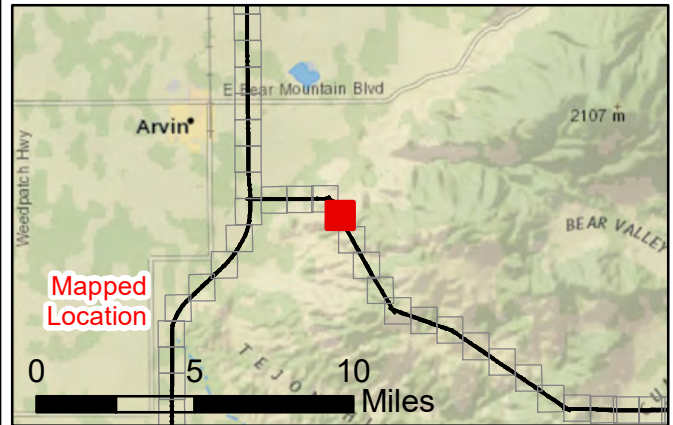
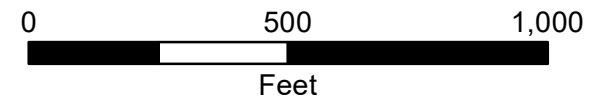
SUBSTATION LOCATION

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ACCESS ROADS

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SURVEY AREA



Vegetation Alliances and Associations

<div>▭</div> Developed	21	Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4
<div>▨</div> Narrowleaf goldenbush - bladderpod scrub ( <i>Ericameria linearifolia</i> - <i>Cleome isomeris</i> Shrubland Alliance), <i>Cleome isomeris</i> Association	27a		

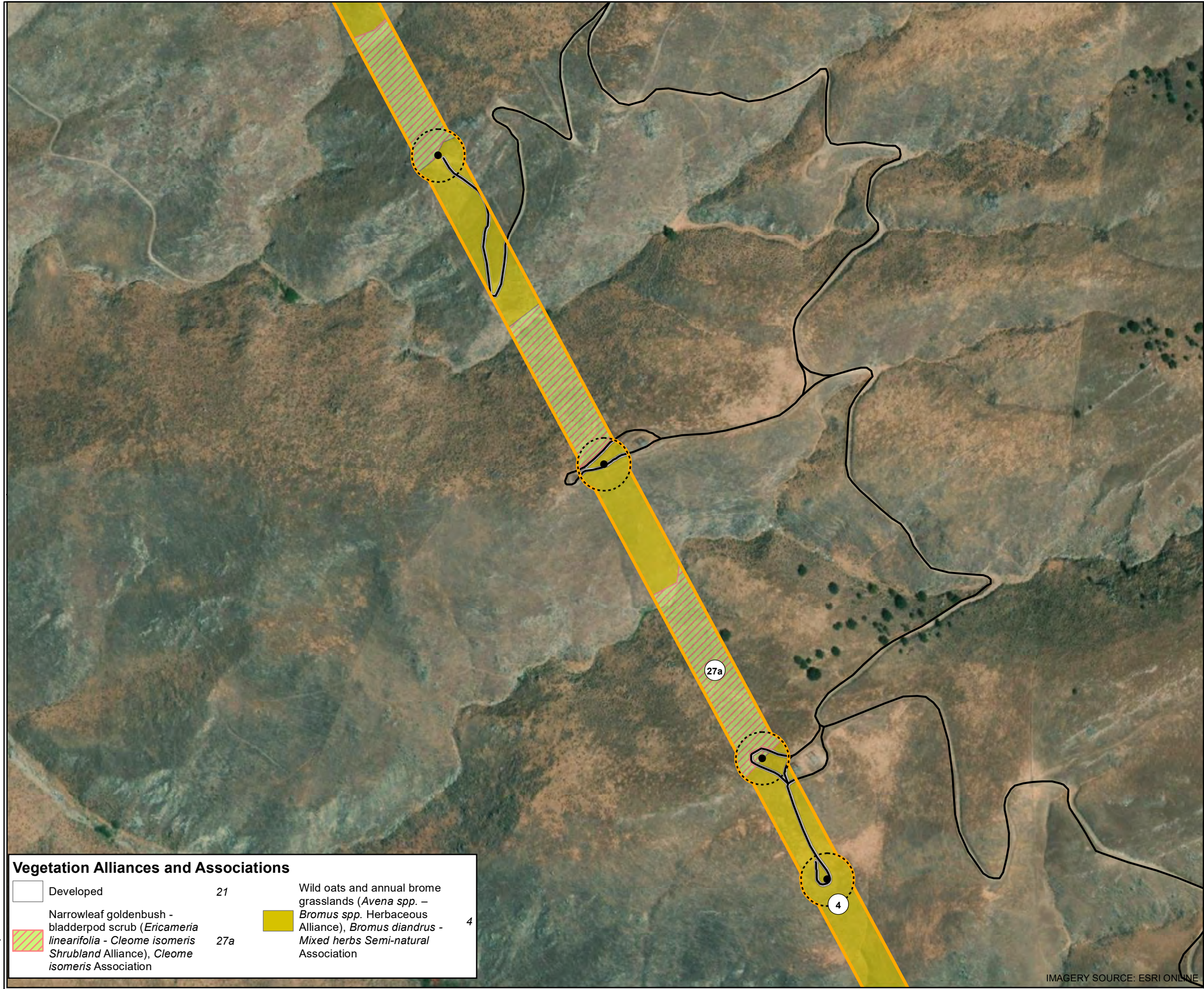
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66 kV PROJECT

NATURAL COMMUNITIES



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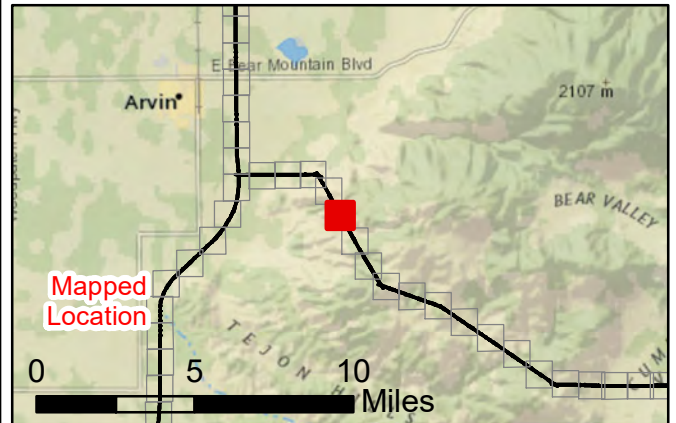
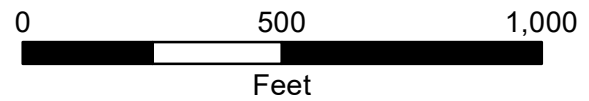
SUBSTATION LOCATION

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SURVEY AREA

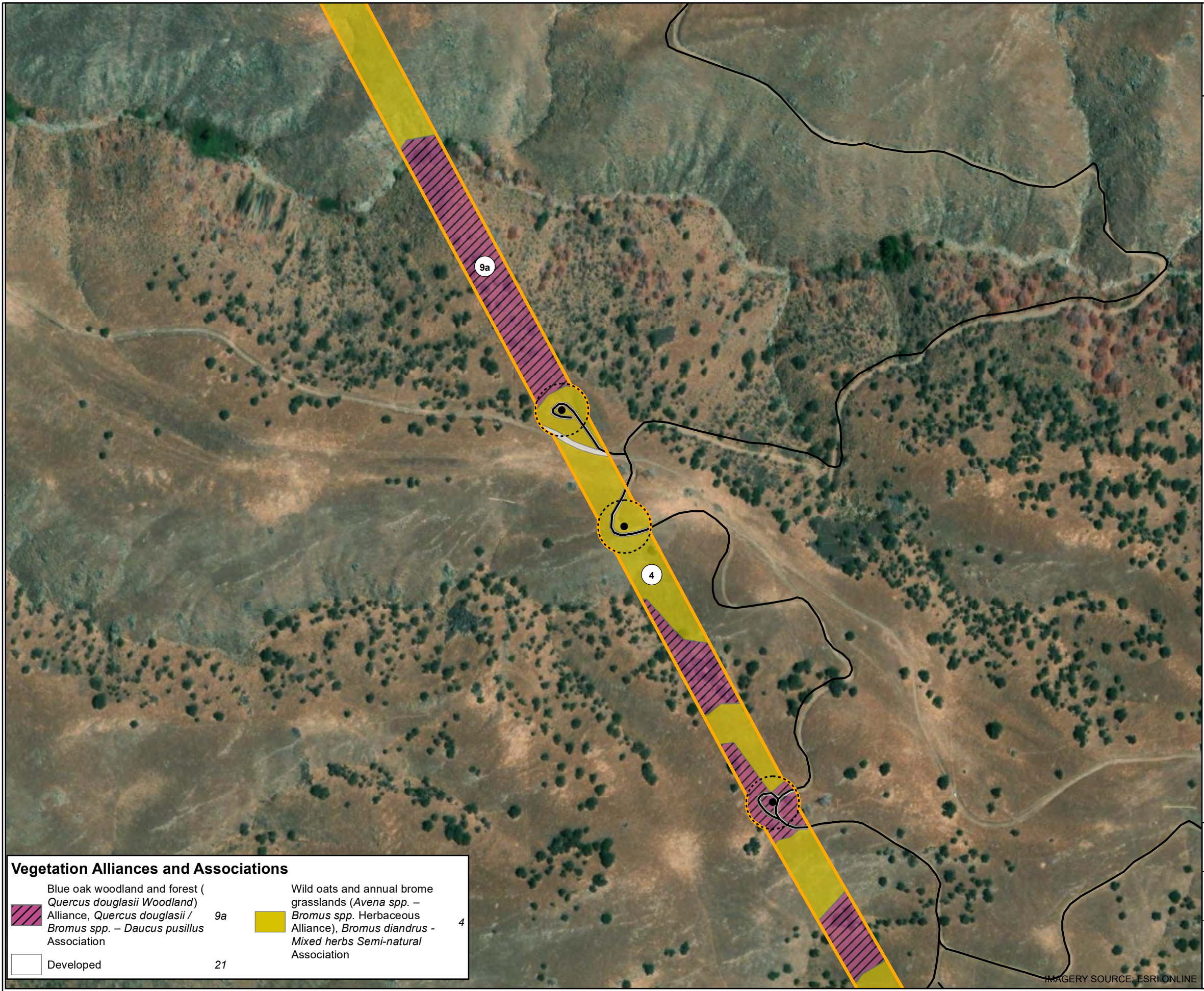


Vegetation Alliances and Associations			
<div></div>	Developed	21	
<div></div>	Narrowleaf goldenbush - bladderpod scrub ( <i>Ericameria linearifolia</i> - <i>Cleome isomeris</i> Shrubland Alliance), <i>Cleome isomeris</i> Association	27a	
<div></div>	Wild oats and annual brome grasslands ( <i>Avena</i> spp. - <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4	

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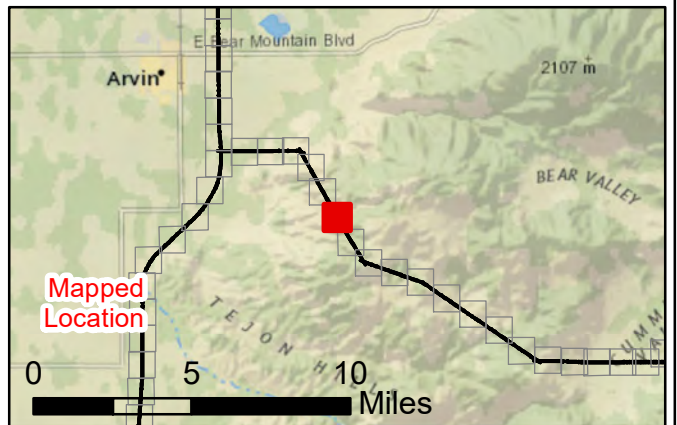
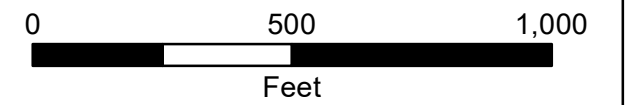


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LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
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Vegetation Alliances and Associations

	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> / <i>Bromus</i> spp. – <i>Daucus pusillus</i> Association	9a		Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4
	Developed	21			

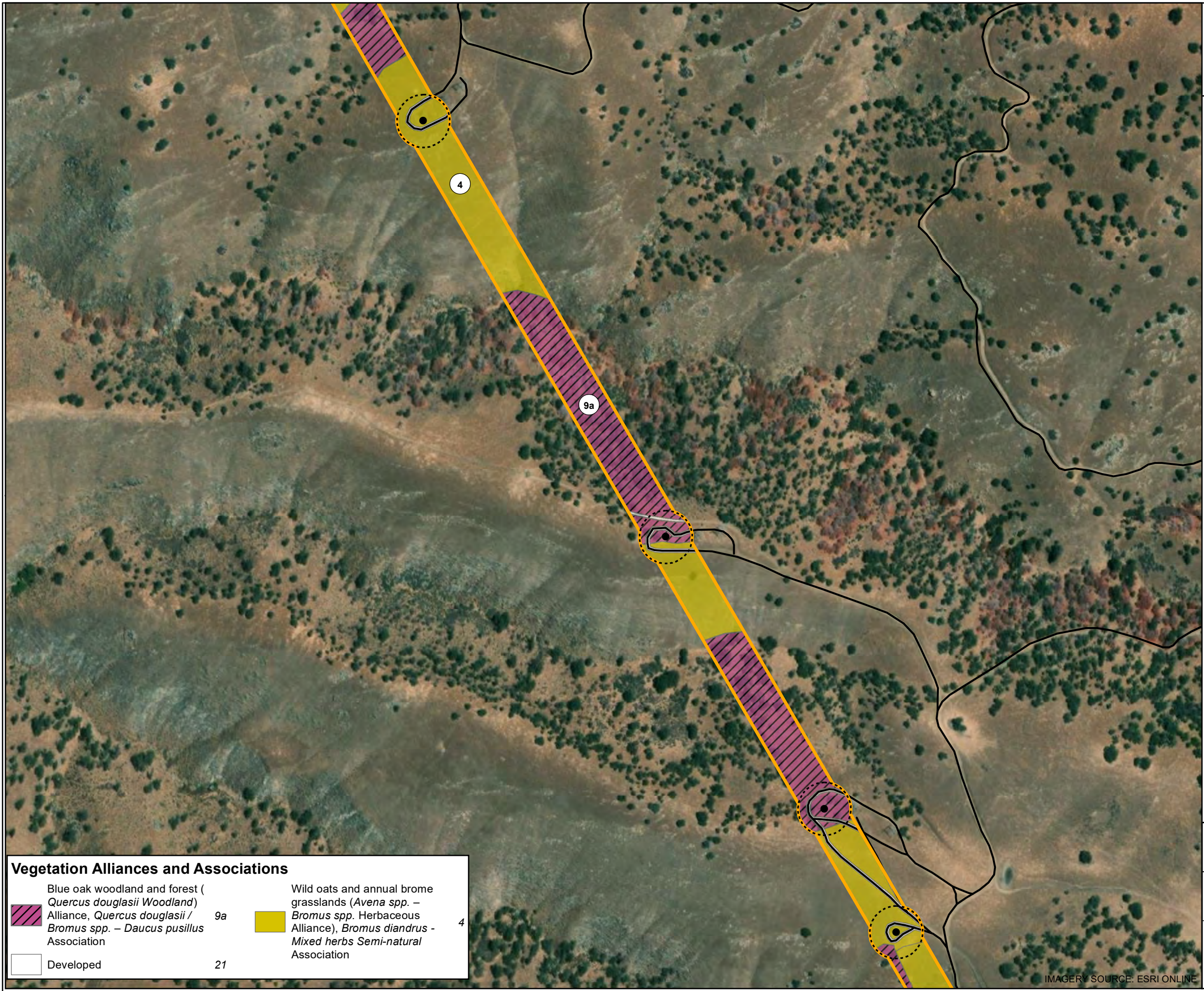
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66 kV PROJECT

NATURAL COMMUNITIES

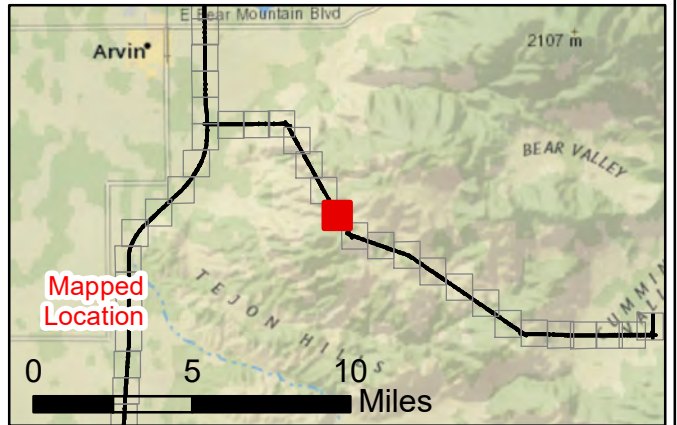
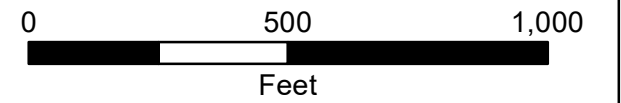


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Coordinate System: NAD 1983 UTM Zone 11N



**LEGEND**




- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**

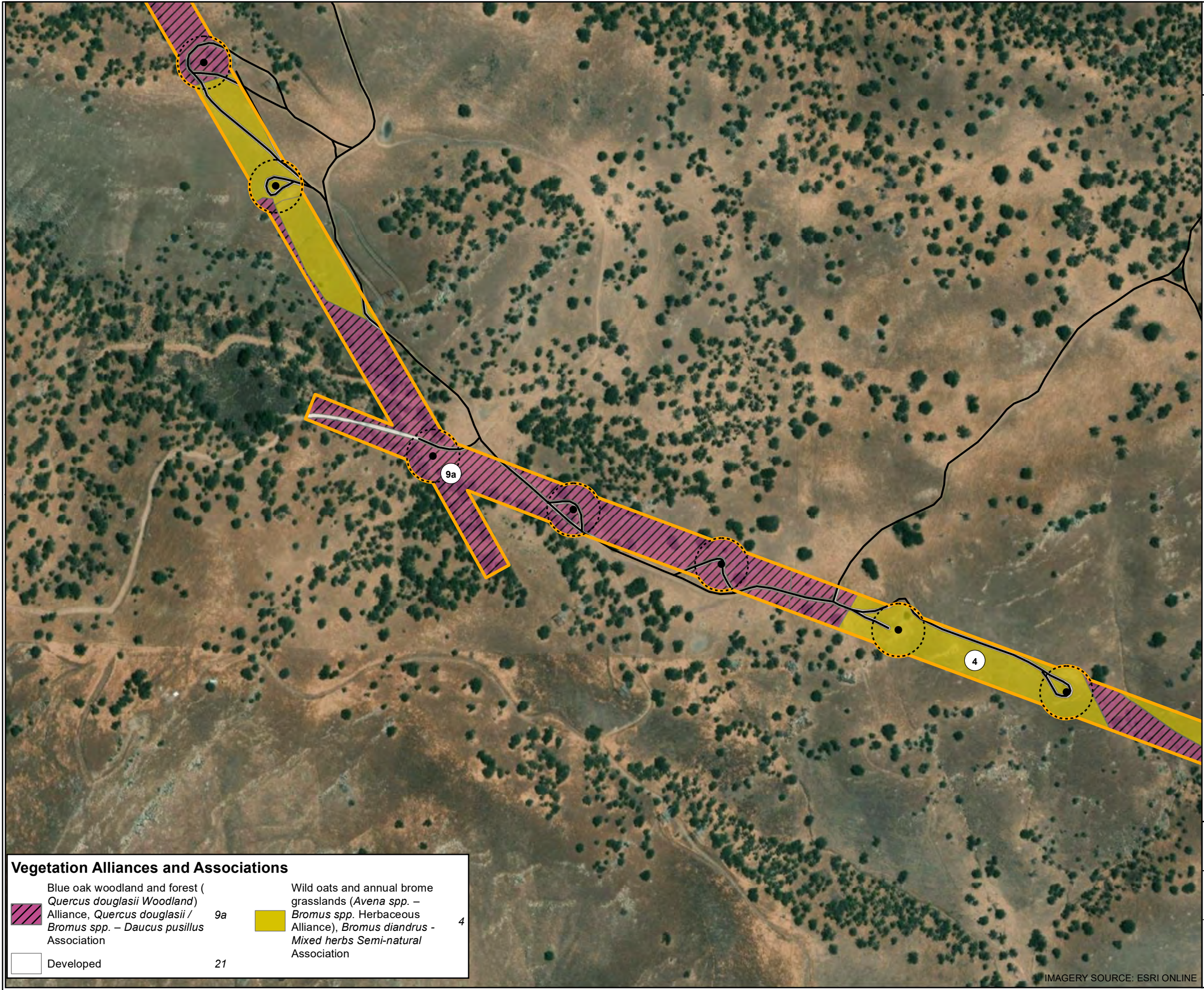
**Vegetation Alliances and Associations**

 Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> / <i>Bromus</i> spp. – <i>Daucus pusillus</i> Association	9a	 Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4
 Developed	21		

IMAGERY SOURCE: ESRI ONLINE

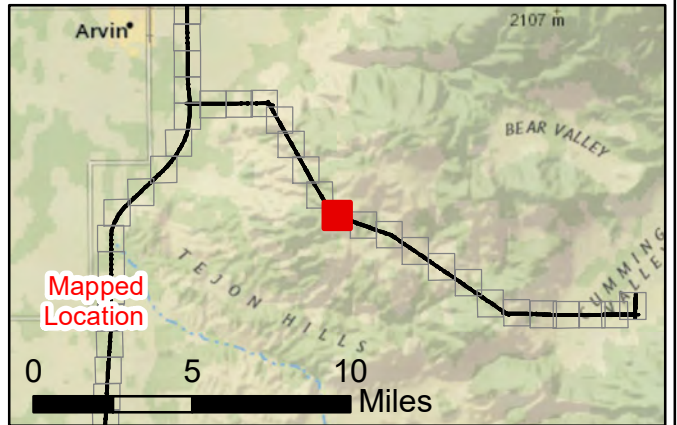
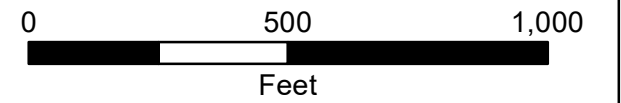


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Coordinate System: NAD 1983 UTM Zone 11N






**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**Vegetation Alliances and Associations**

	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> / <i>Bromus</i> spp. – <i>Daucus pusillus</i> Association	9a		Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4
	Developed	21			

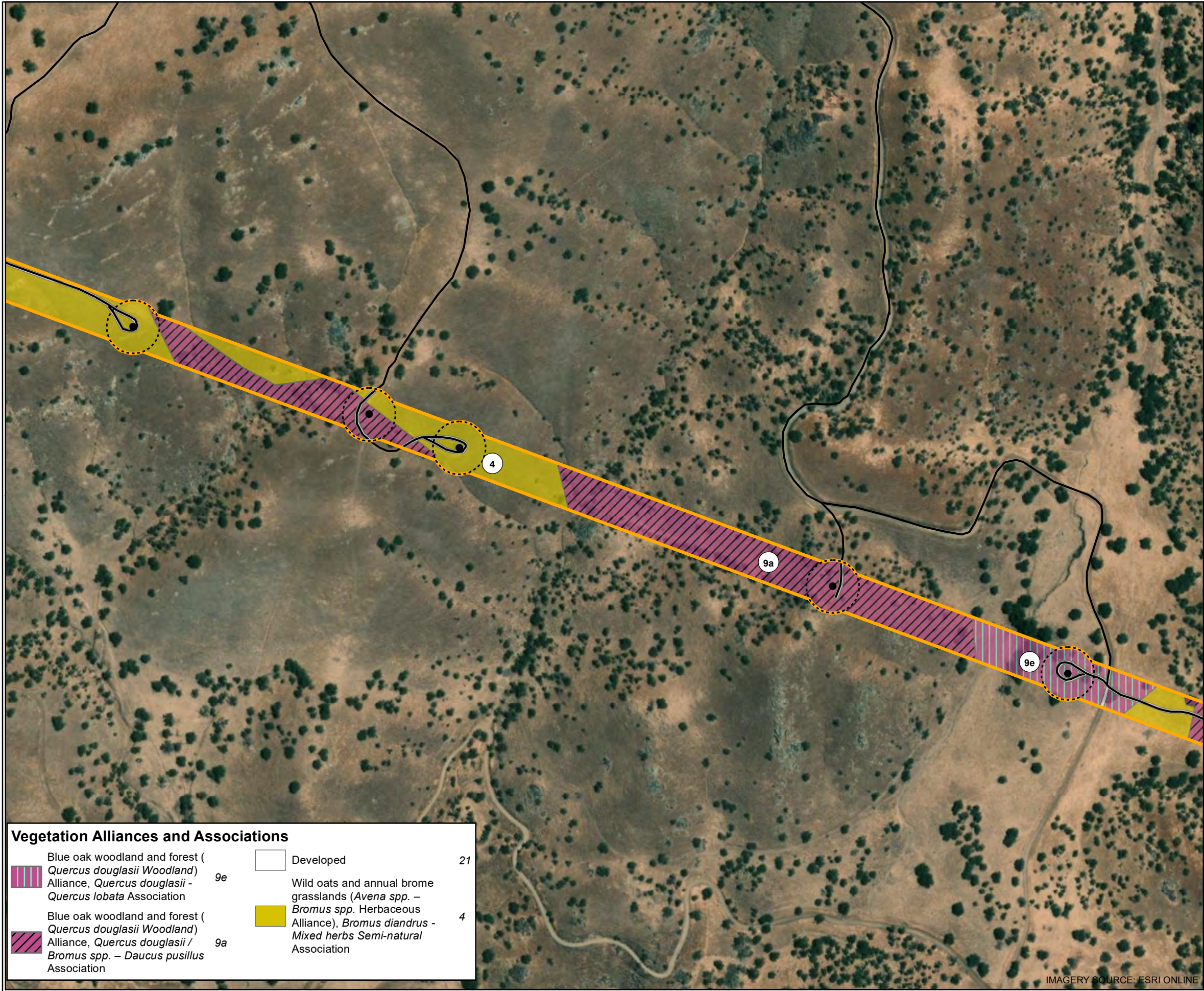
IMAGERY SOURCE: ESRI ONLINE

**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



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Coordinate System: NAD 1983 UTM Zone 11N



LEGEND

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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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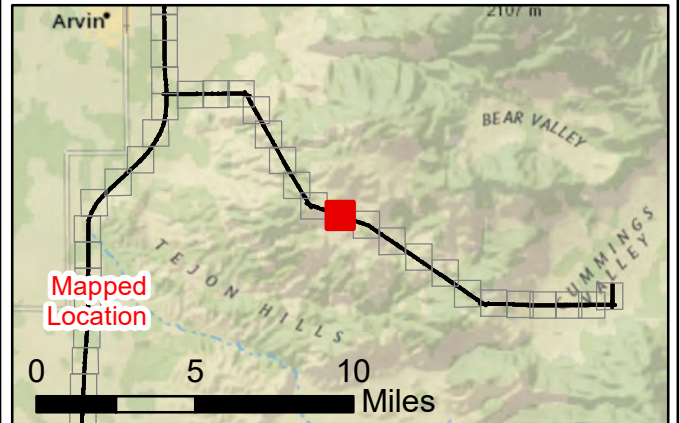
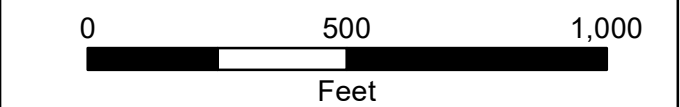
SUBSTATION LOCATION

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ACCESS ROADS

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SURVEY AREA

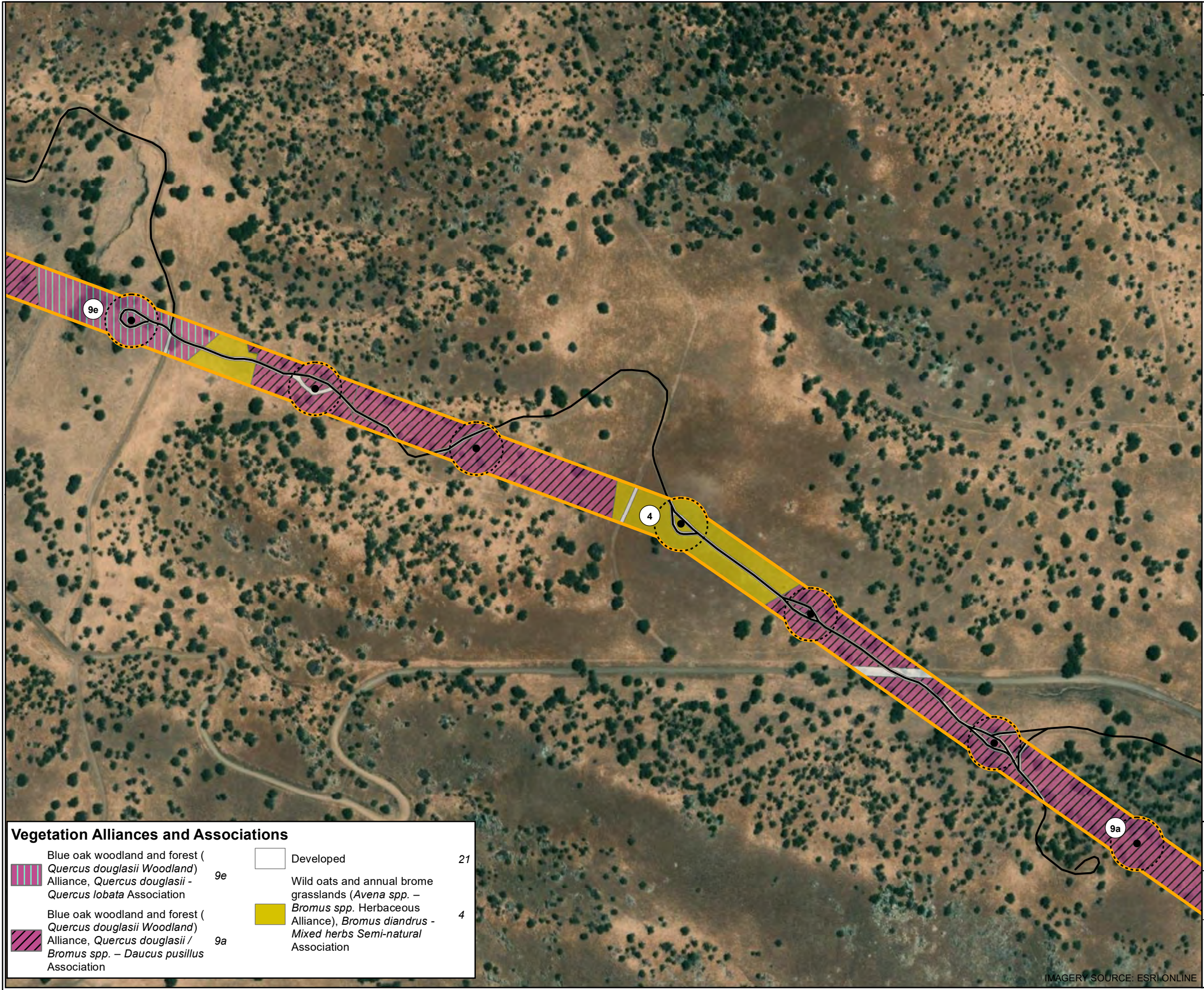


Vegetation Alliances and Associations			
<div><div></div></div>	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> - <i>Quercus lobata</i> Association	9e	21
<div><div></div></div>	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> / <i>Bromus</i> spp. - <i>Daucus pusillus</i> Association	9a	4
<div><div></div></div>	Wild oats and annual brome grasslands ( <i>Avena</i> spp. - <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association		
<div><div></div></div>	Developed		

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N



LEGEND

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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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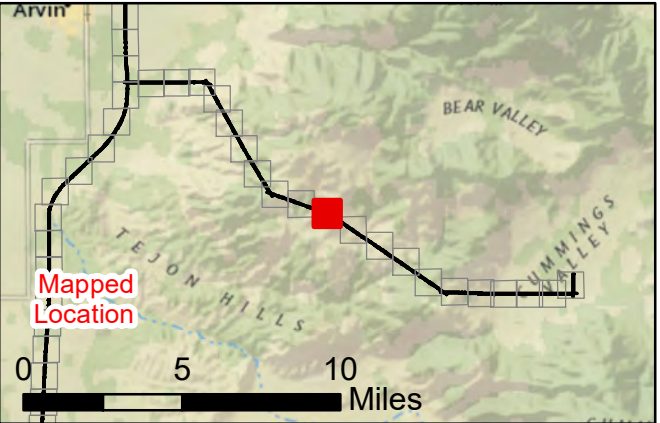
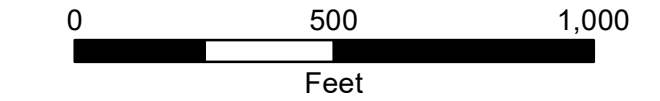
SUBSTATION LOCATION

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ACCESS ROADS

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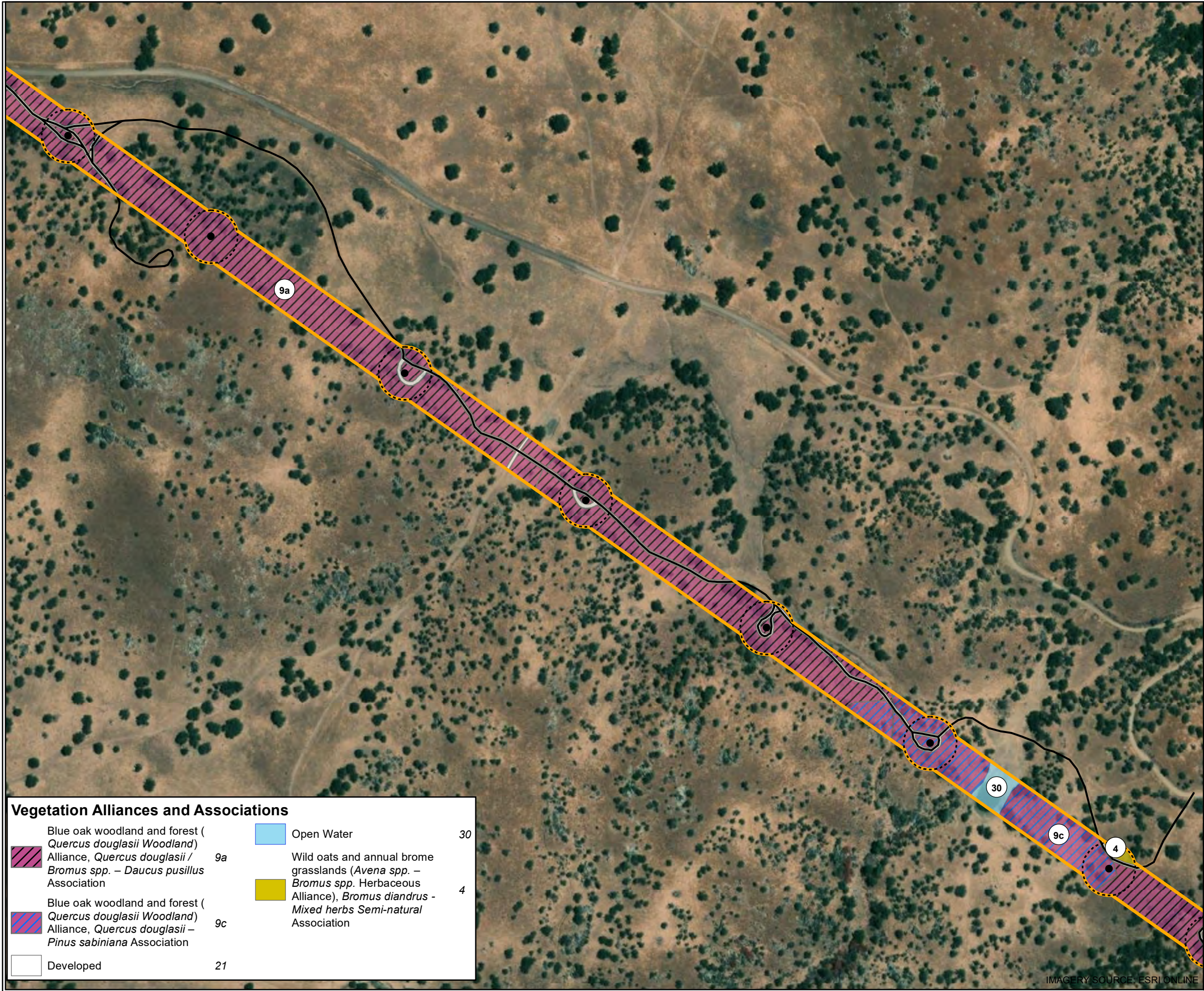
SURVEY AREA



Vegetation Alliances and Associations			
<div><div></div></div>	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> - <i>Quercus lobata</i> Association	9e	21
<div><div></div></div>	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> / <i>Bromus</i> spp. - <i>Daucus pusillus</i> Association	9a	4
<div><div></div></div>	Wild oats and annual brome grasslands ( <i>Avena</i> spp. - <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association		
<div><div></div></div>	Developed		



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Coordinate System: NAD 1983 UTM Zone 11N



LEGEND

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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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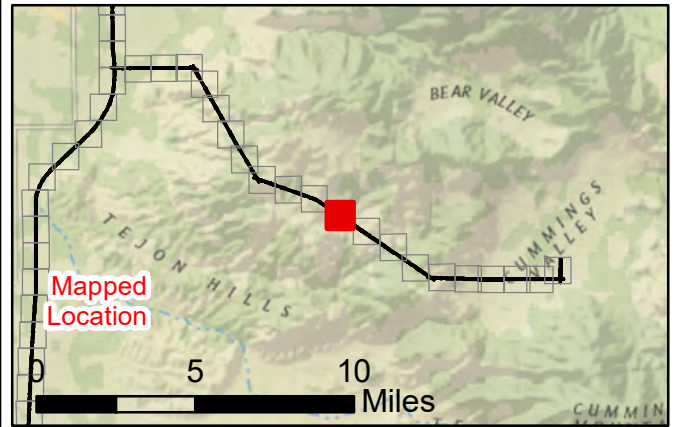
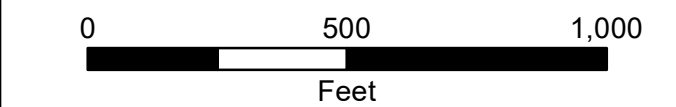
SUBSTATION LOCATION






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ACCESS ROADS

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SURVEY AREA

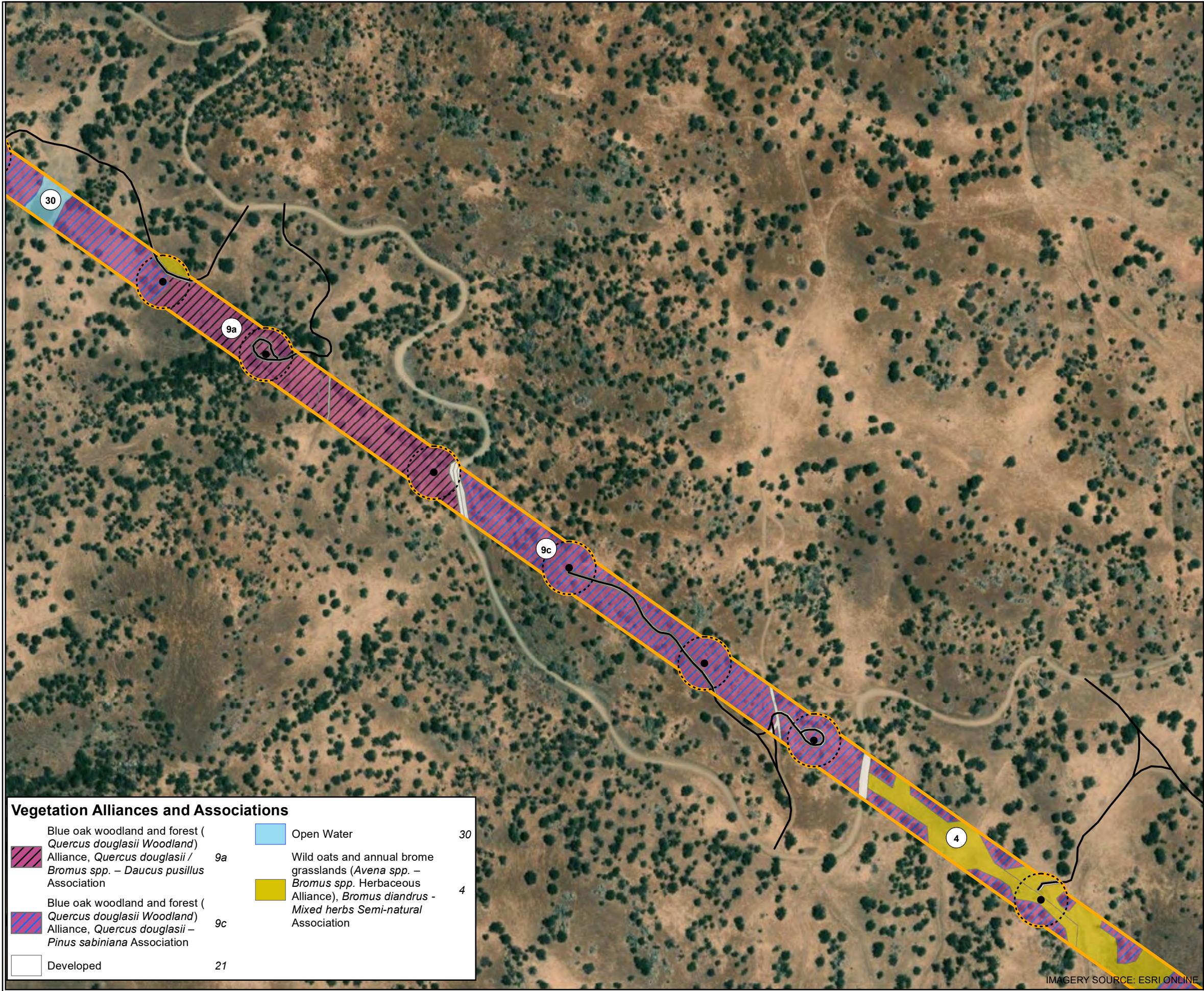


Vegetation Alliances and Associations		
	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> / <i>Bromus</i> spp. – <i>Daucus pusillus</i> Association	9a
	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> – <i>Pinus sabiniana</i> Association	9c
	Developed	21
	Open Water	30
	Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N



LEGEND

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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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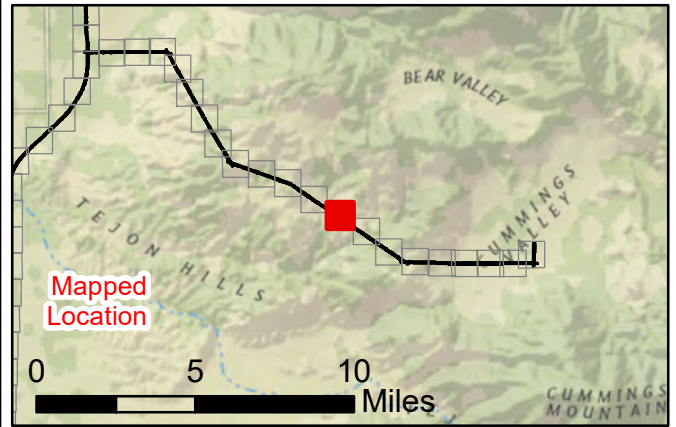
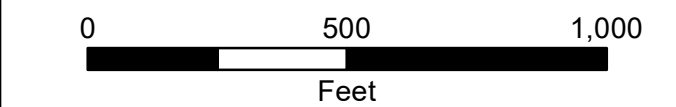
SUBSTATION LOCATION





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ACCESS ROADS

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SURVEY AREA

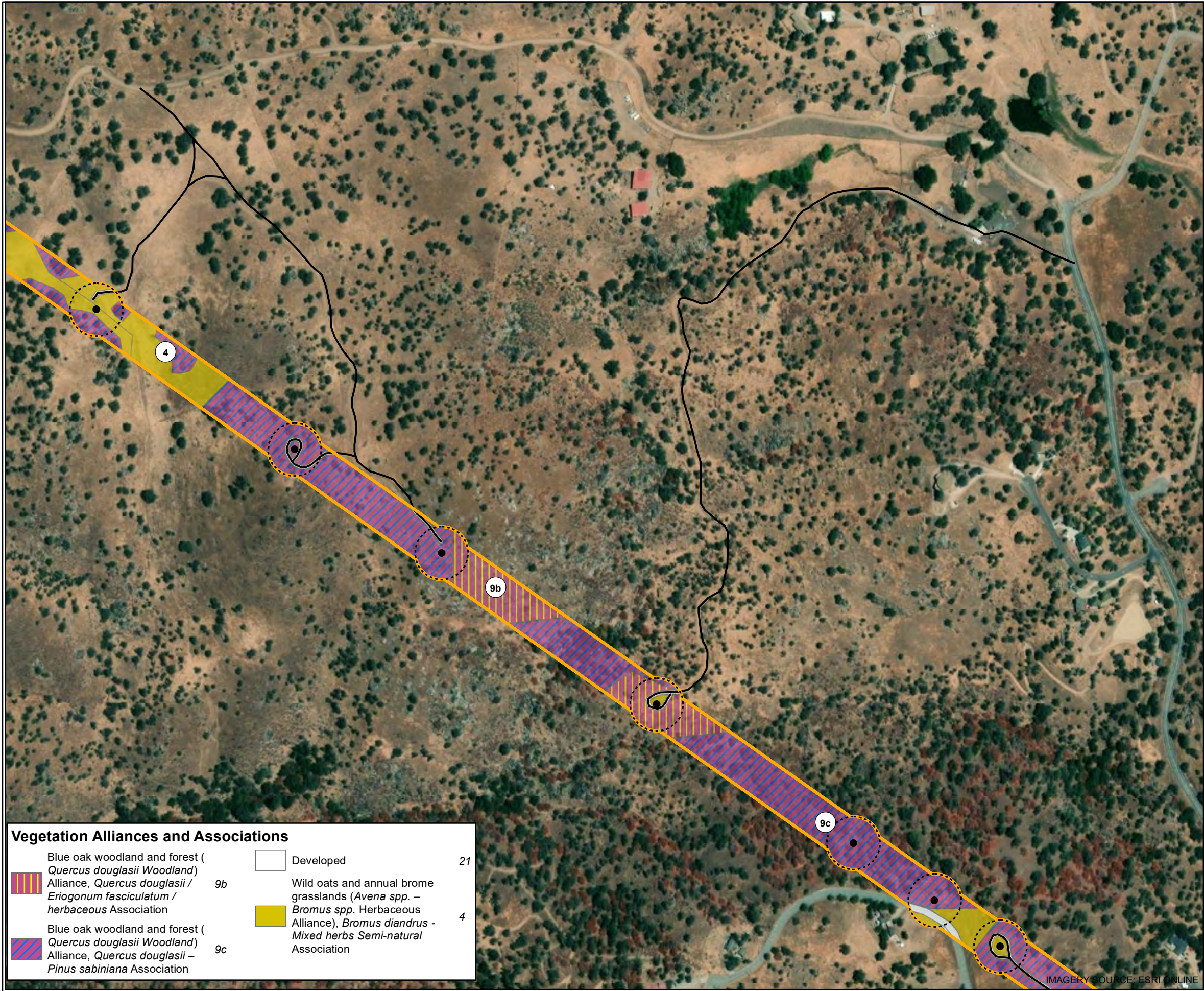


Vegetation Alliances and Associations		
	9a	Wild oats and annual brome grasslands ( <i>Avena</i> spp. - <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association
	9c	
	21	
		30

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N



LEGEND

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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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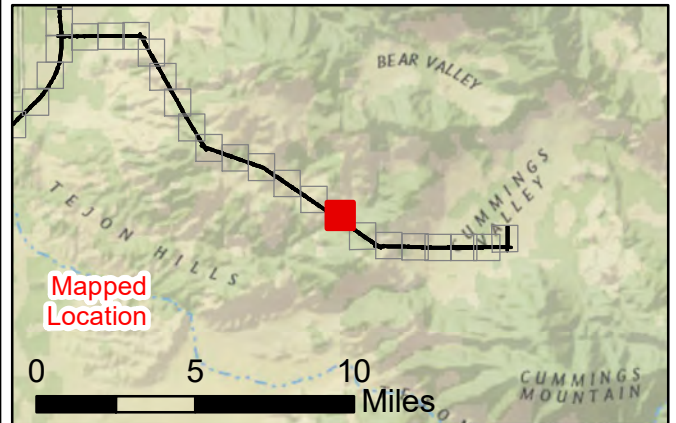
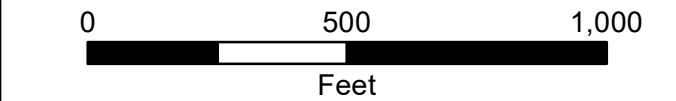
SUBSTATION LOCATION

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ACCESS ROADS

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SURVEY AREA

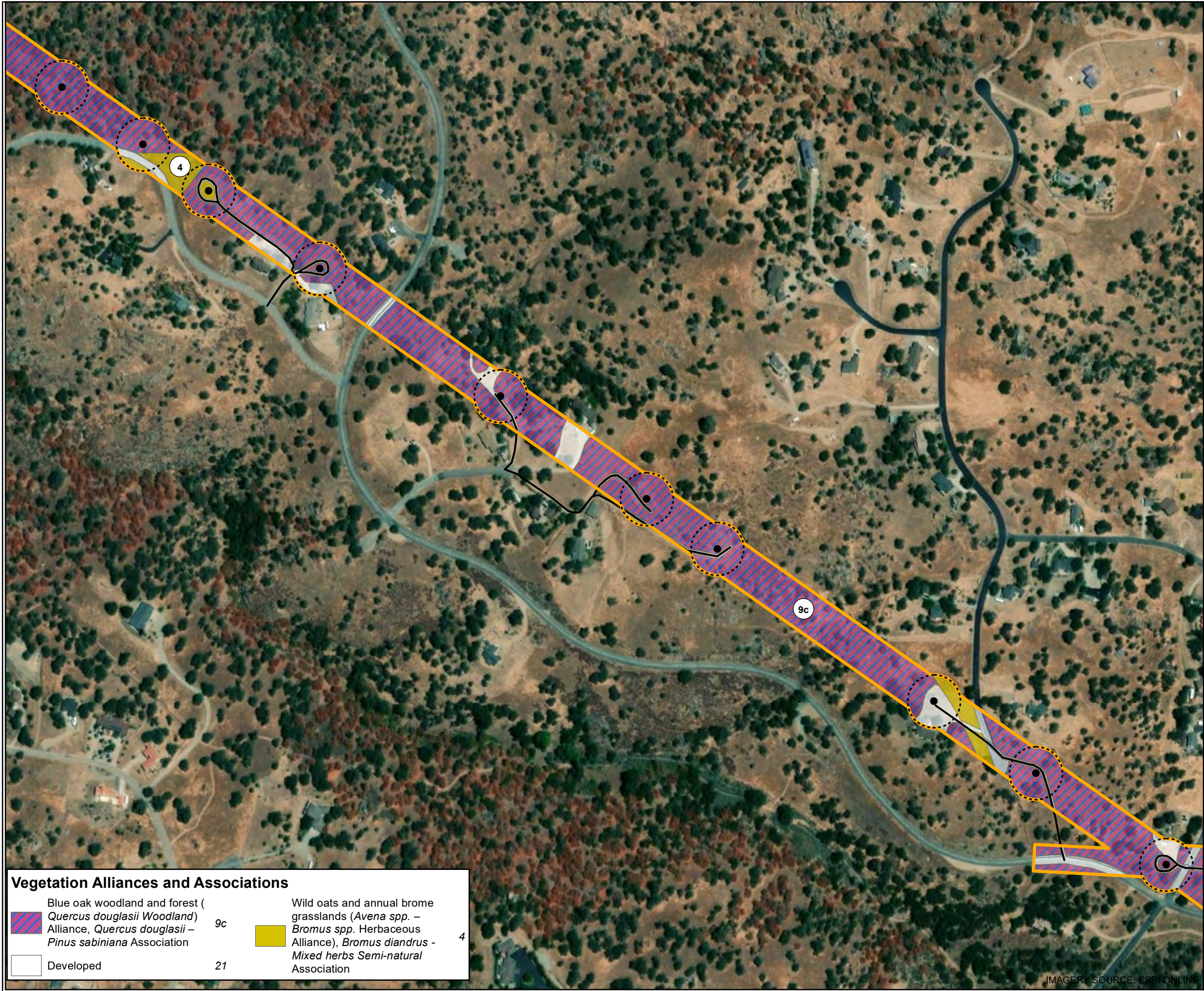


Vegetation Alliances and Associations		
<div><div></div>Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> / <i>Eriogonum fasciculatum</i> / herbaceous Association</div>	9b	21
<div><div></div>Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> – <i>Pinus sabiniana</i> Association</div>	9c	4
<div><div></div>Wild oats and annual brome grasslands (<i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association</div>		
<div><div></div>Developed</div>		

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N



LEGEND

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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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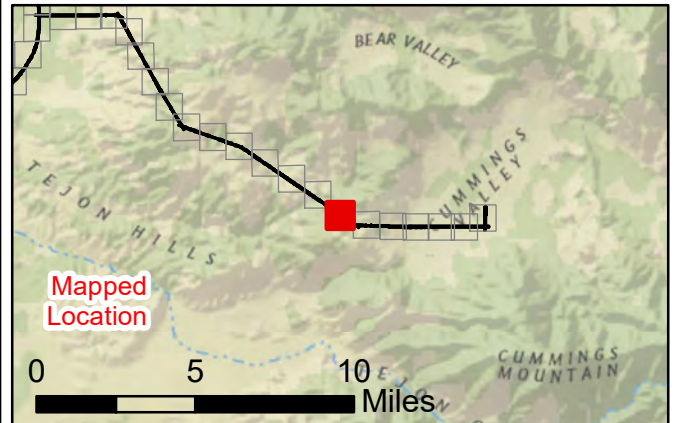
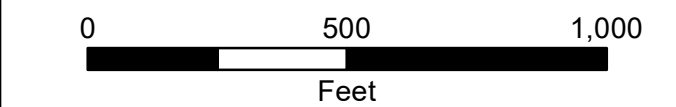
SUBSTATION LOCATION

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ACCESS ROADS

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SURVEY AREA

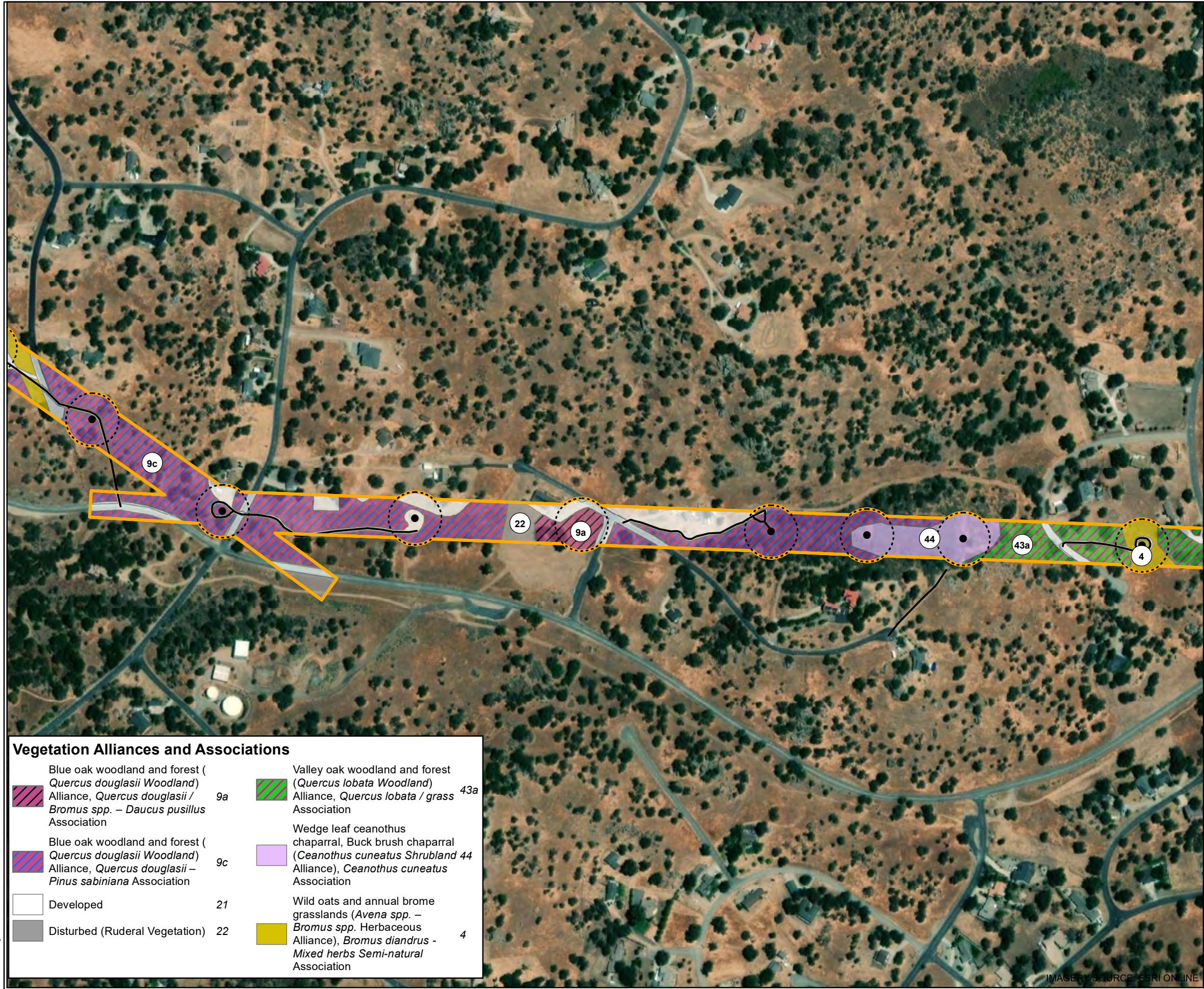


Vegetation Alliances and Associations			
<div></div> Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> – <i>Pinus sabiniana</i> Association	9c	<div></div> Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4
<div></div> Developed	21		

IMAGERY SOURCE: ESRI/ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N



LEGEND

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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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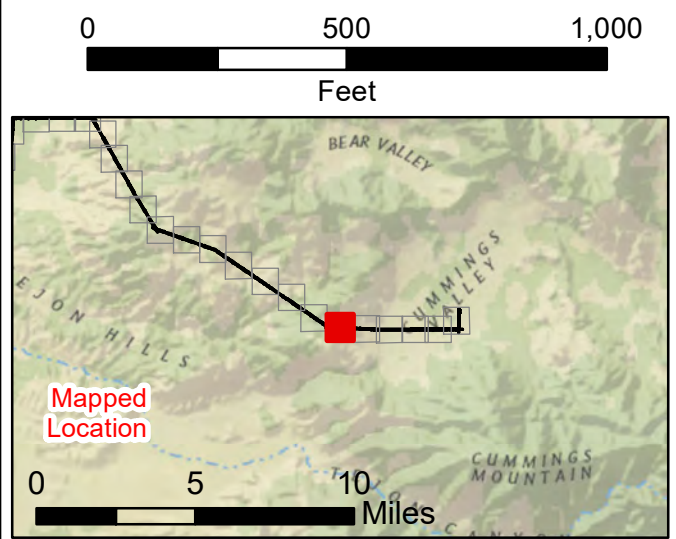
SUBSTATION LOCATION








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ACCESS ROADS

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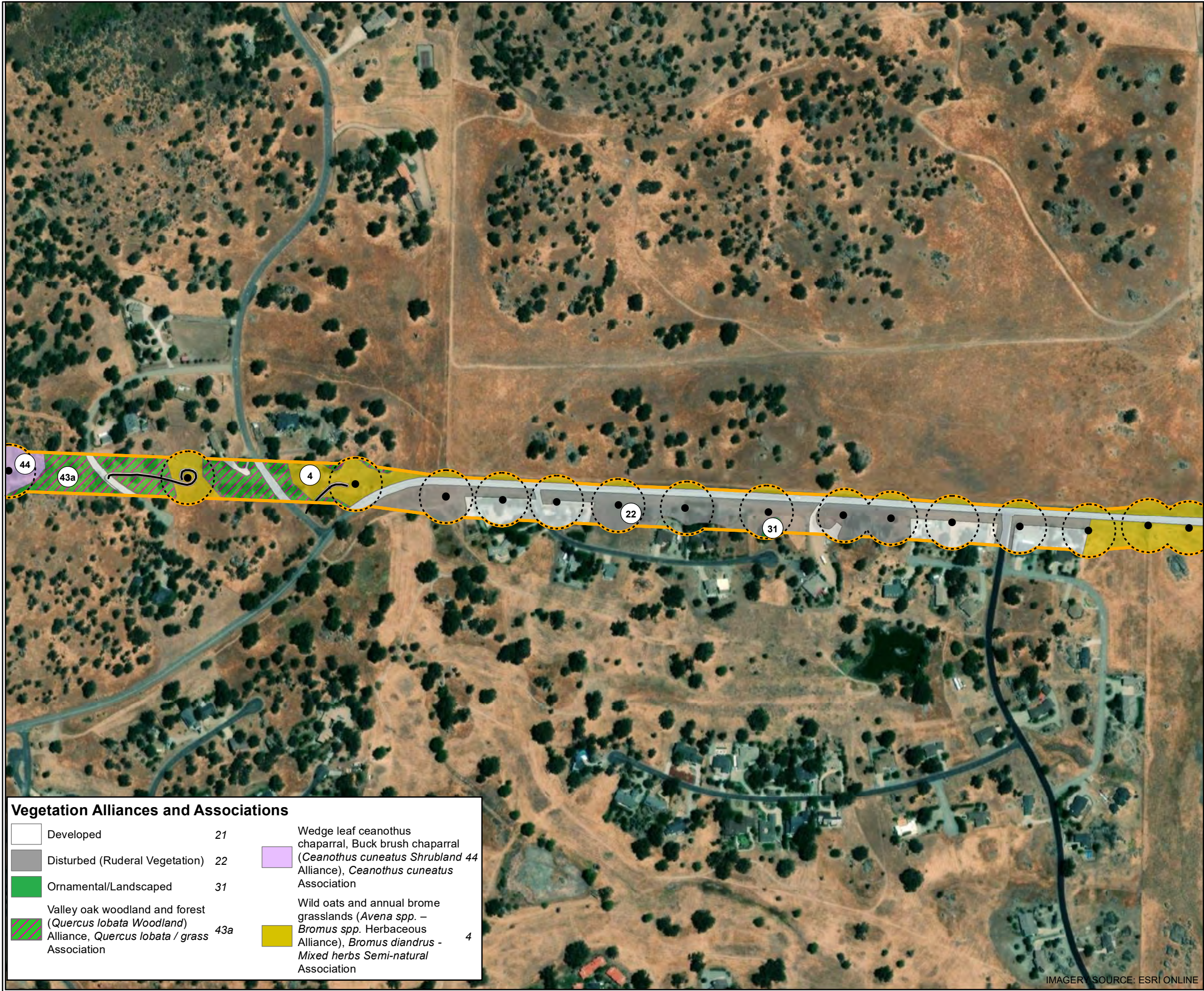
SURVEY AREA



Vegetation Alliances and Associations					
	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> / <i>Bromus</i> spp. – <i>Daucus pusillus</i> Association	9a		Valley oak woodland and forest ( <i>Quercus lobata</i> Woodland) Alliance, <i>Quercus lobata</i> / grass Association	43a
	Blue oak woodland and forest ( <i>Quercus douglasii</i> Woodland) Alliance, <i>Quercus douglasii</i> – <i>Pinus sabiniana</i> Association	9c		Wedge leaf ceanothus chaparral, Buck brush chaparral ( <i>Ceanothus cuneatus</i> Shrubland 44 Alliance), <i>Ceanothus cuneatus</i> Association	44
	Developed	21		Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4
	Disturbed (Ruderal Vegetation)	22			



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Coordinate System: NAD 1983 UTM Zone 11N



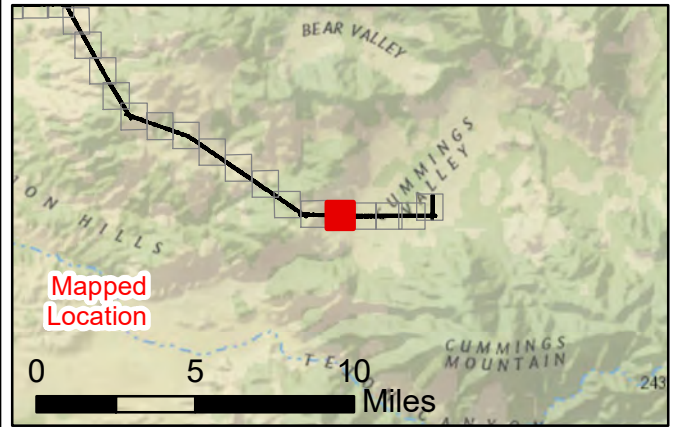
Vegetation Alliances and Associations			
	Developed	21	Wedge leaf ceanothus chaparral, Buck brush chaparral ( <i>Ceanothus cuneatus</i> Shrubland 44 Alliance), <i>Ceanothus cuneatus</i> Association
	Disturbed (Ruderal Vegetation)	22	Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association
	Ornamental/Landscaped	31	
	Valley oak woodland and forest ( <i>Quercus lobata</i> Woodland) Alliance, <i>Quercus lobata</i> / grass Association	43a	
		4	

**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- SURVEY AREA

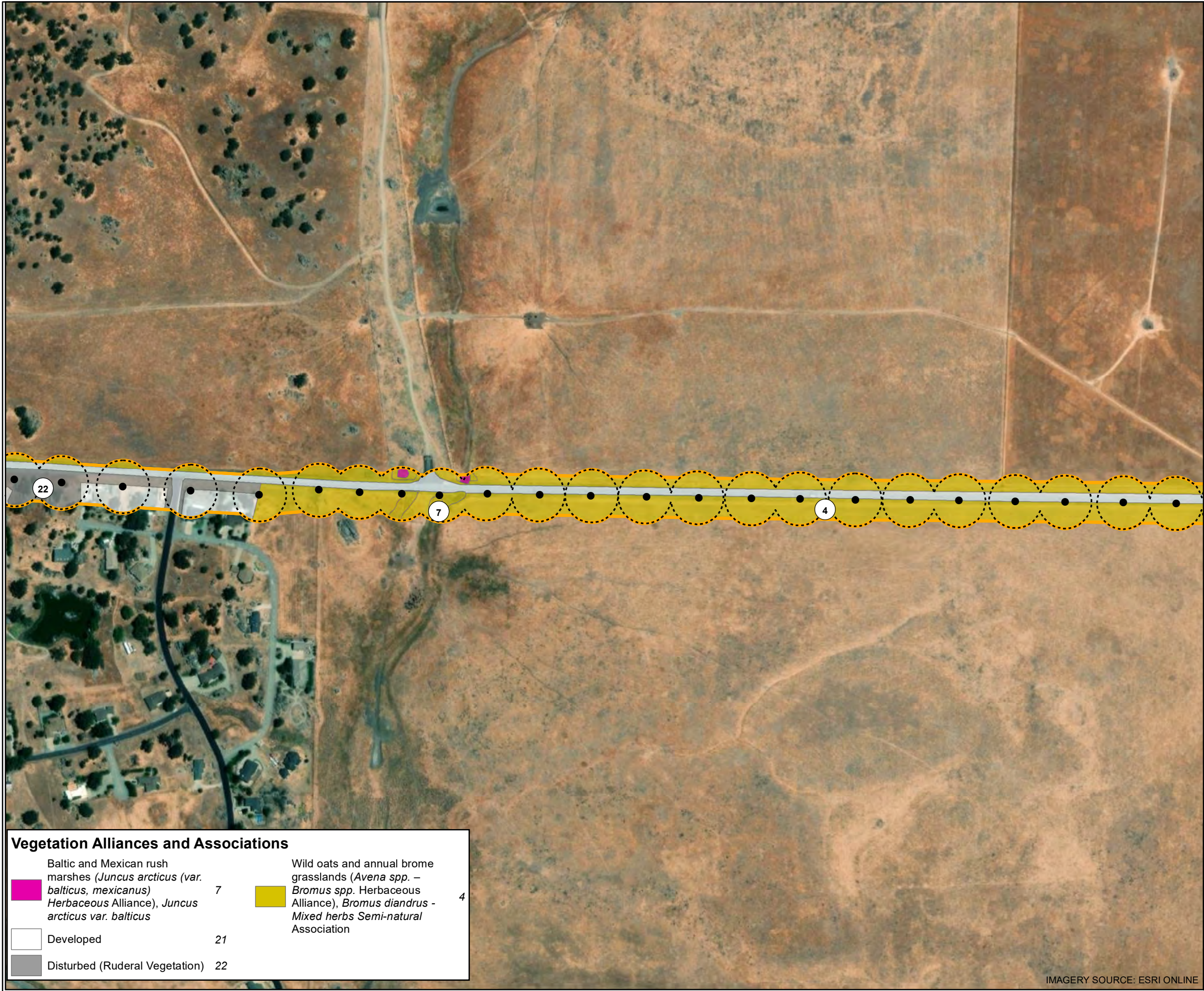
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Feet





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Coordinate System: NAD 1983 UTM Zone 11N



LEGEND

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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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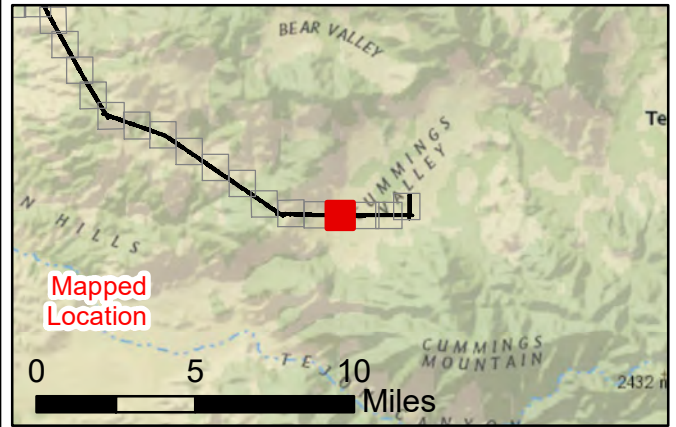
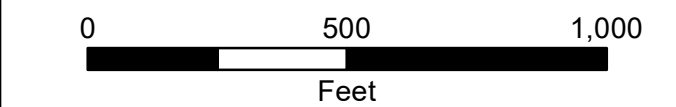
SUBSTATION LOCATION





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ACCESS ROADS

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SURVEY AREA

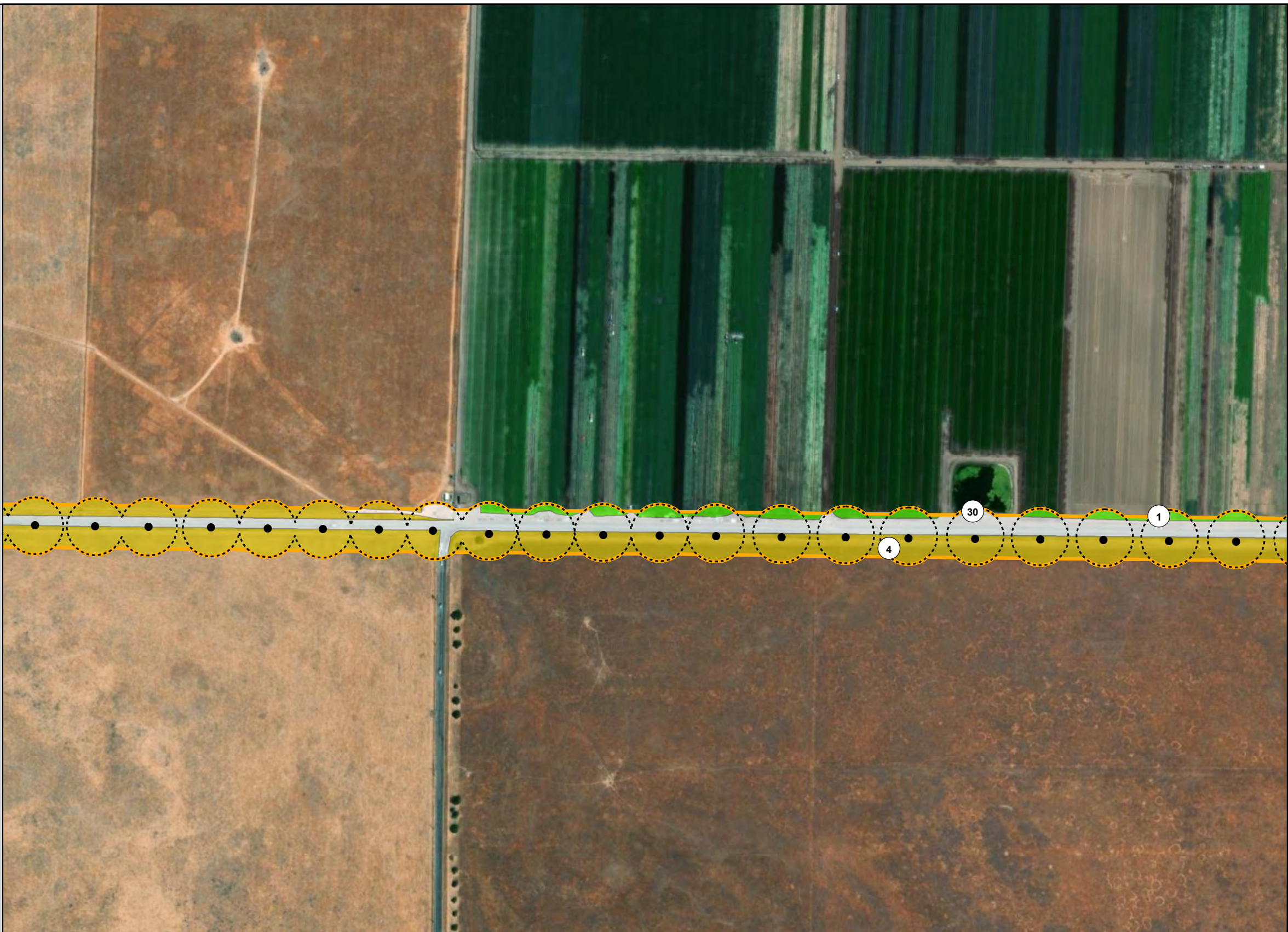



Vegetation Alliances and Associations			
	Baltic and Mexican rush marshes ( <i>Juncus arcticus</i> (var. <i>balticus</i> , <i>mexicanus</i> ) Herbaceous Alliance), <i>Juncus arcticus</i> var. <i>balticus</i>	7	
	Wild oats and annual brome grasslands ( <i>Avena</i> spp. – <i>Bromus</i> spp. Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4	
	Developed	21	
	Disturbed (Ruderal Vegetation)	22	

IMAGERY SOURCE: ESRI ONLINE




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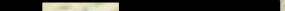
**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

0 500 1,000  
Feet




0 5 10 Miles






**GORMAN-KERN RIVER  
66 kV PROJECT**

**NATURAL COMMUNITIES**



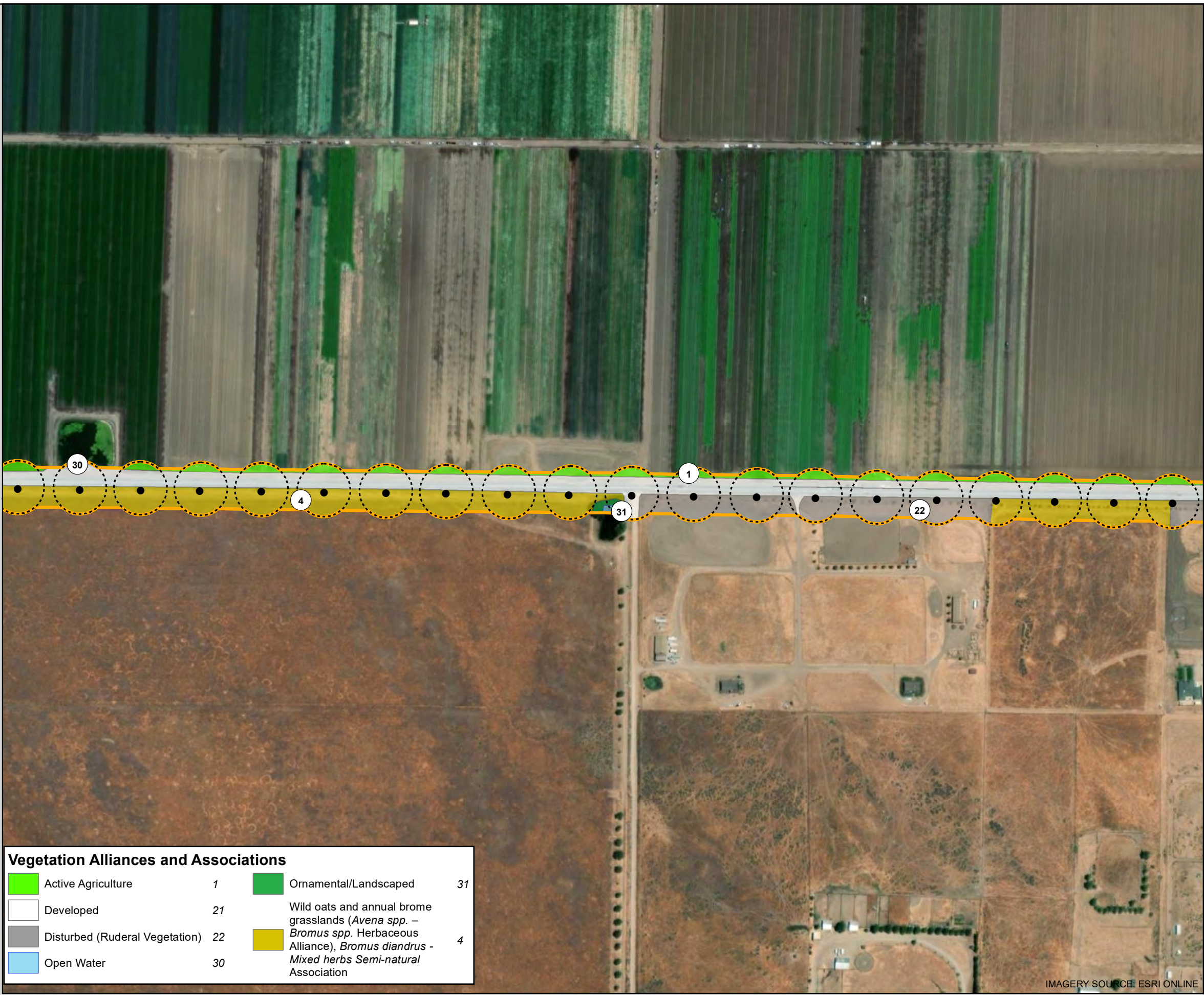
FIGURESET  
90 of 92


Vegetation Alliances and Associations			
	Active Agriculture	1	Wild oats and annual brome grasslands ( <i>Avena spp.</i> – <i>Bromus spp.</i> Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association
	Developed	21	
	Open Water	30	

IMAGERY SOURCE: ESRI ONLINE




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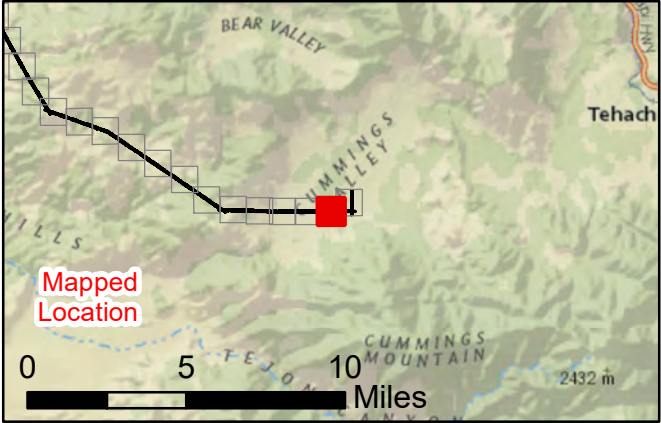


**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

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Feet









0510Miles

**GORMAN-KERN RIVER**  
**66 kV PROJECT**

**NATURAL COMMUNITIES**



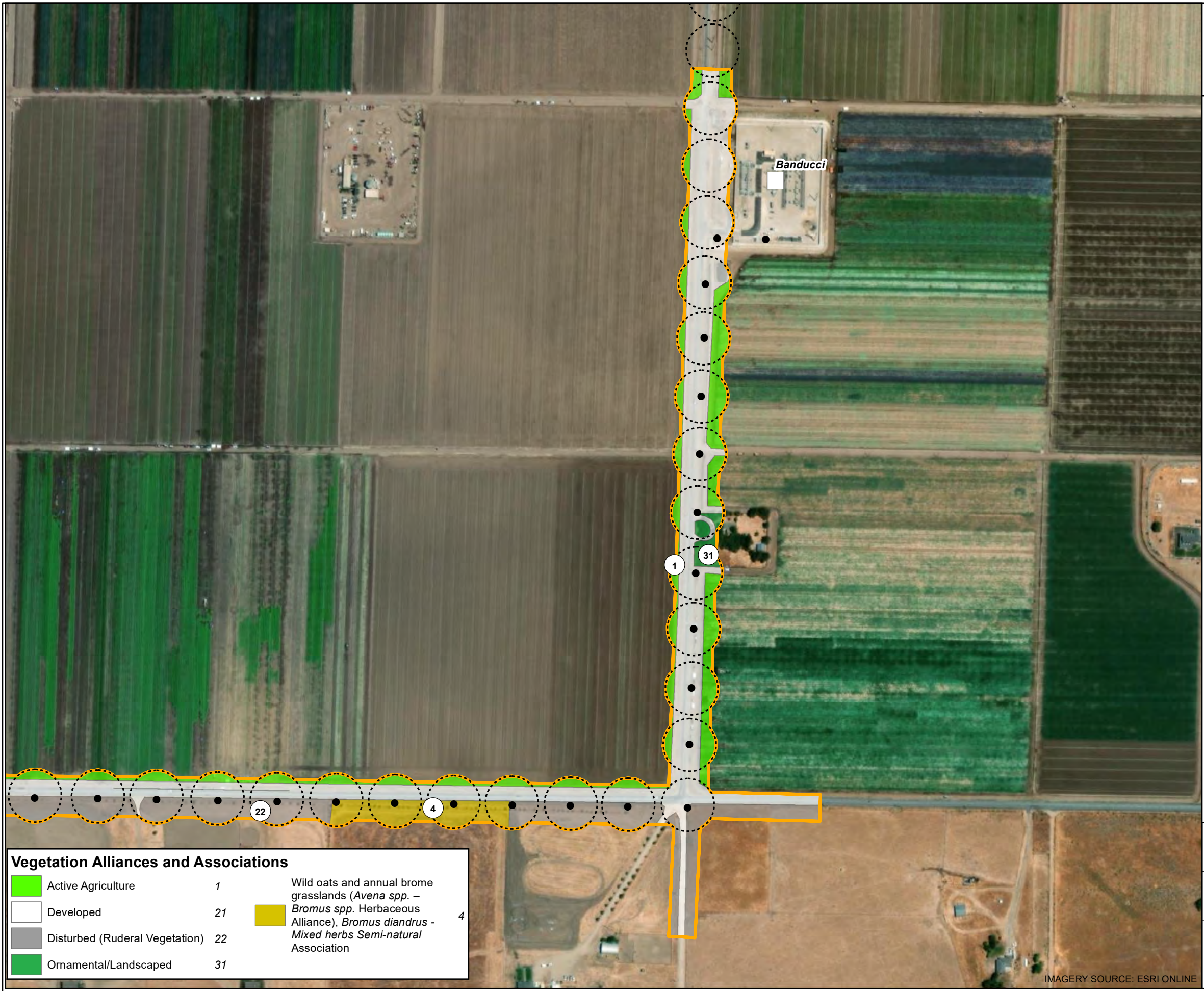
**FIGURESET**  
91 of 92

Vegetation Alliances and Associations			
	Active Agriculture	1	 Ornamental/Landscaped 31
	Developed	21	 Wild oats and annual brome grasslands ( <i>Avena spp.</i> – <i>Bromus spp.</i> Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association 4
	Disturbed (Ruderal Vegetation)	22	
	Open Water	30	

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N



LEGEND

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STRUCTURE LOCATION

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100 FOOT RADIUS TOWER BUFFER

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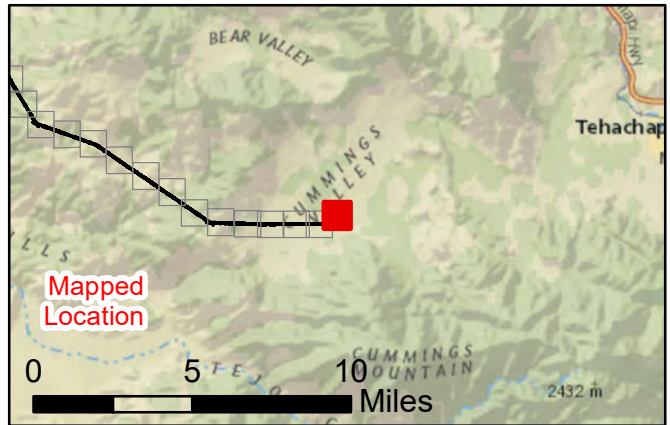
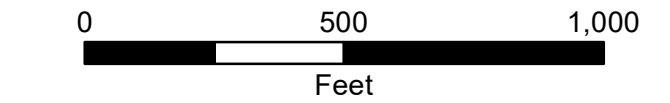
SUBSTATION LOCATION

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ACCESS ROADS

▭

SURVEY AREA



Vegetation Alliances and Associations			
<div></div>	Active Agriculture	1	
<div></div>	Developed	21	
<div></div>	Disturbed (Ruderal Vegetation)	22	
<div></div>	Ornamental/Landscaped	31	
<div></div>	Wild oats and annual brome grasslands ( <i>Avena spp.</i> – <i>Bromus spp.</i> Herbaceous Alliance), <i>Bromus diandrus</i> - Mixed herbs Semi-natural Association	4	



## Sensitive Natural Communities

Acton's and Virgin River brittle brush  
- Net-veined goldeneye scrub  
(*Encelia (actonii, virginensis)* -  
*Viguiera reticulata* Shrubland  
Alliance), *Encelia actonii* Association

Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance), *Salix lasiolepis* Association

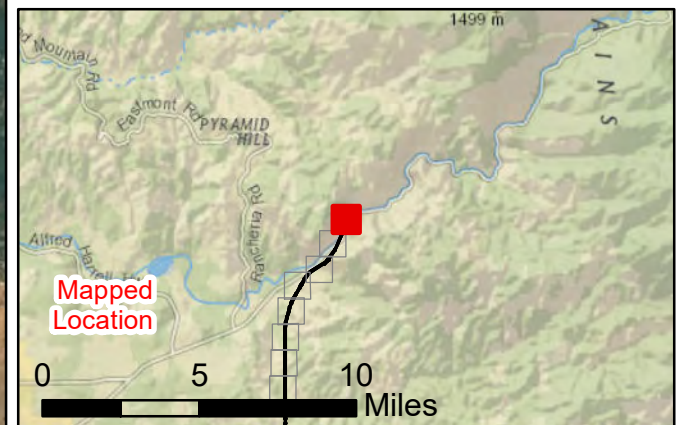
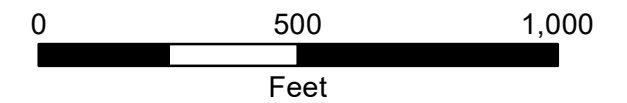
California sycamore – coast live oak  
riparian woodlands (*Platanus  
racemosa* Woodland) Alliance,  
*Platanus racemosa* – *Salix laevigata*  
/ *Salix lasiolepis* – *Baccharis  
salicifolia* Association

Goodding's willow – red willow  
riparian woodland and forest (*Salix  
gooddingii* – *Salix laevigata*  
Woodland) Alliance, *Salix laevigata*  
Association



### LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

## SENSITIVE BIOLOGICAL RESOURCES



FIGURESET


1 of 52

IMAGERY SOURCE: ESRI ONLINE





\\corparc\gis\Data\ArcGisData\GISPROJECTS\ENV T\ENVISCEISOE\_TLLR\ArcGIS\_Desktop\KERN\TLLR Kern Figure 4 Sensitive Biological Resources Mapbook.mxd 9/29/2021 mg01044  
Coordinate System: NAD 1983 UTM Zone 11N

**Sensitive Wildlife Locations**

 Double-Crested Cormorant  
(*Phalacrocorax auritus*)






**Sensitive Natural Communities**

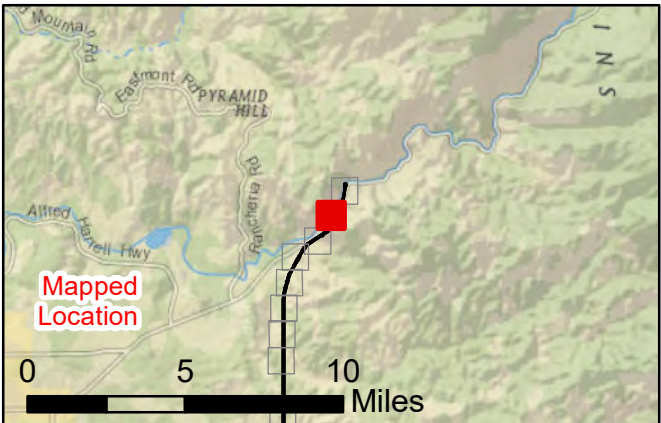
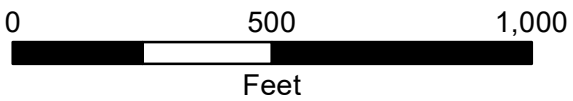
 Acton's and Virgin River brittle brush  
- Net-veined goldeneye scrub  
(*Encelia (actonii, virginensis)* -  
*Viguiera reticulata* Shrubland  
Alliance), *Encelia actonii* Association

 California sycamore – coast live oak  
riparian woodlands (*Platanus  
racemosa* Woodland) Alliance,  
*Platanus racemosa* – *Salix laevigata*  
/ *Salix lasiolepis* – *Baccharis  
salicifolia* Association



**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA

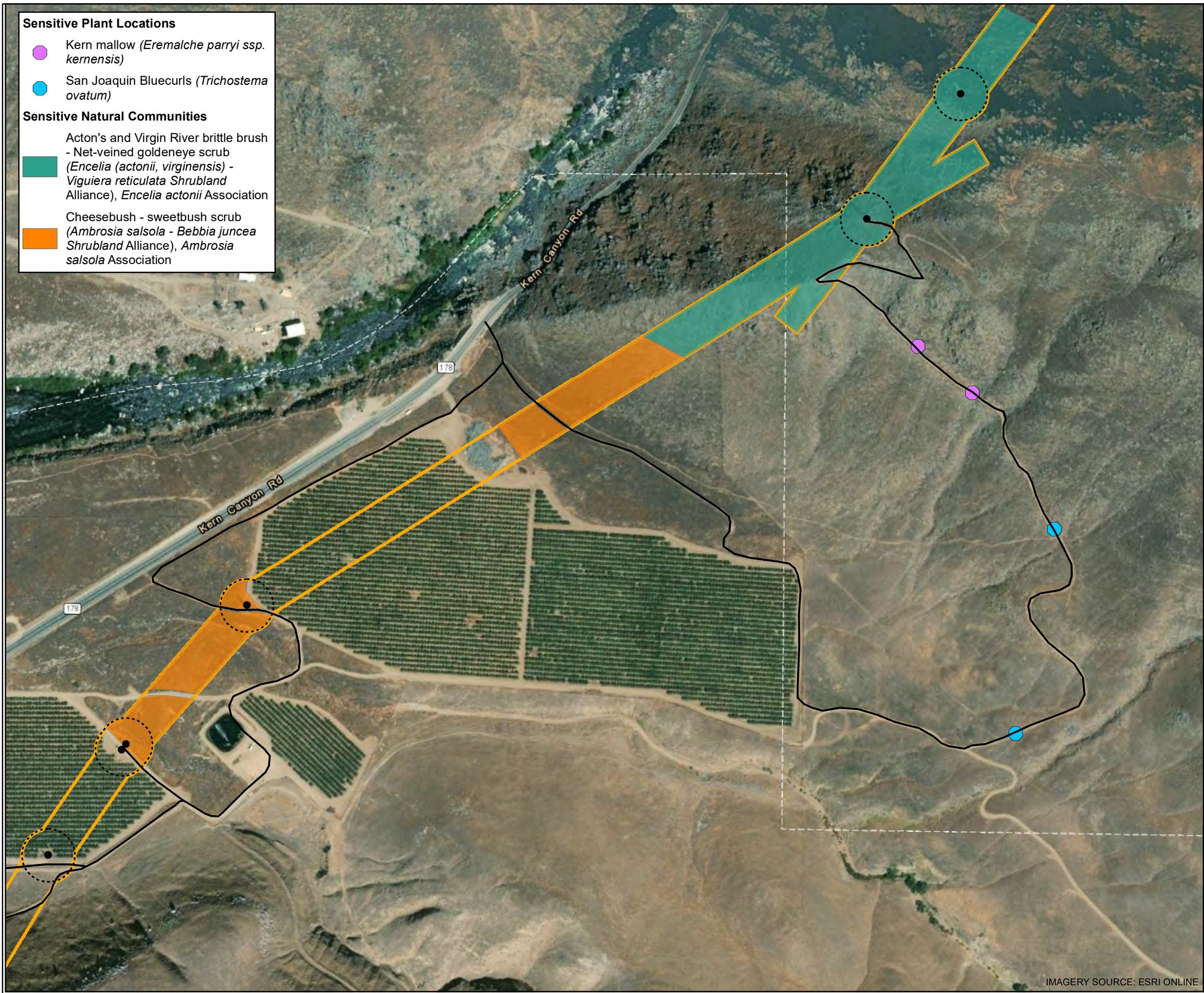


**GORMAN-KERN RIVER  
66 kV PROJECT**



**SENSITIVE BIOLOGICAL RESOURCES**





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Coordinate System: NAD 1983 UTM Zone 11N



**Sensitive Plant Locations**






-  Kern mallow (*Eremalche parryi* ssp. *kernensis*)
-  San Joaquin Bluecurls (*Trichostema ovatum*)

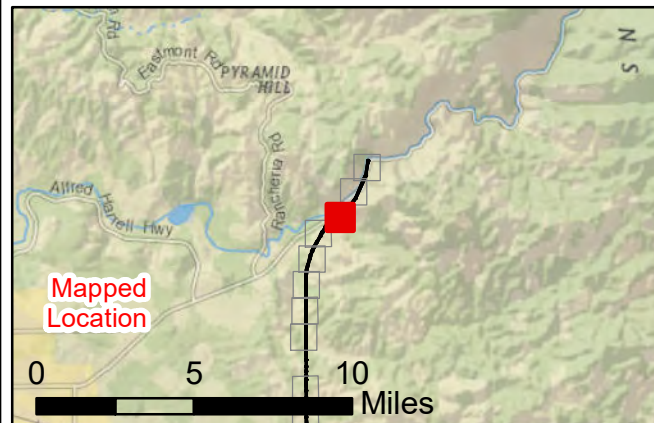
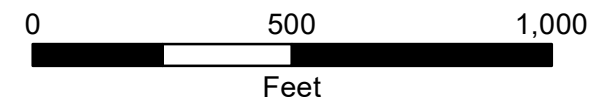
**Sensitive Natural Communities**

-  Acton's and Virgin River brittle brush - Net-veined goldeneye scrub (*Encelia (actonii, virginensis) - Viguiera reticulata* Shrubland Alliance), *Encelia actonii* Association
-  Cheesebush - sweetbush scrub (*Ambrosia salsola - Bebbia juncea* Shrubland Alliance), *Ambrosia salsola* Association



**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA

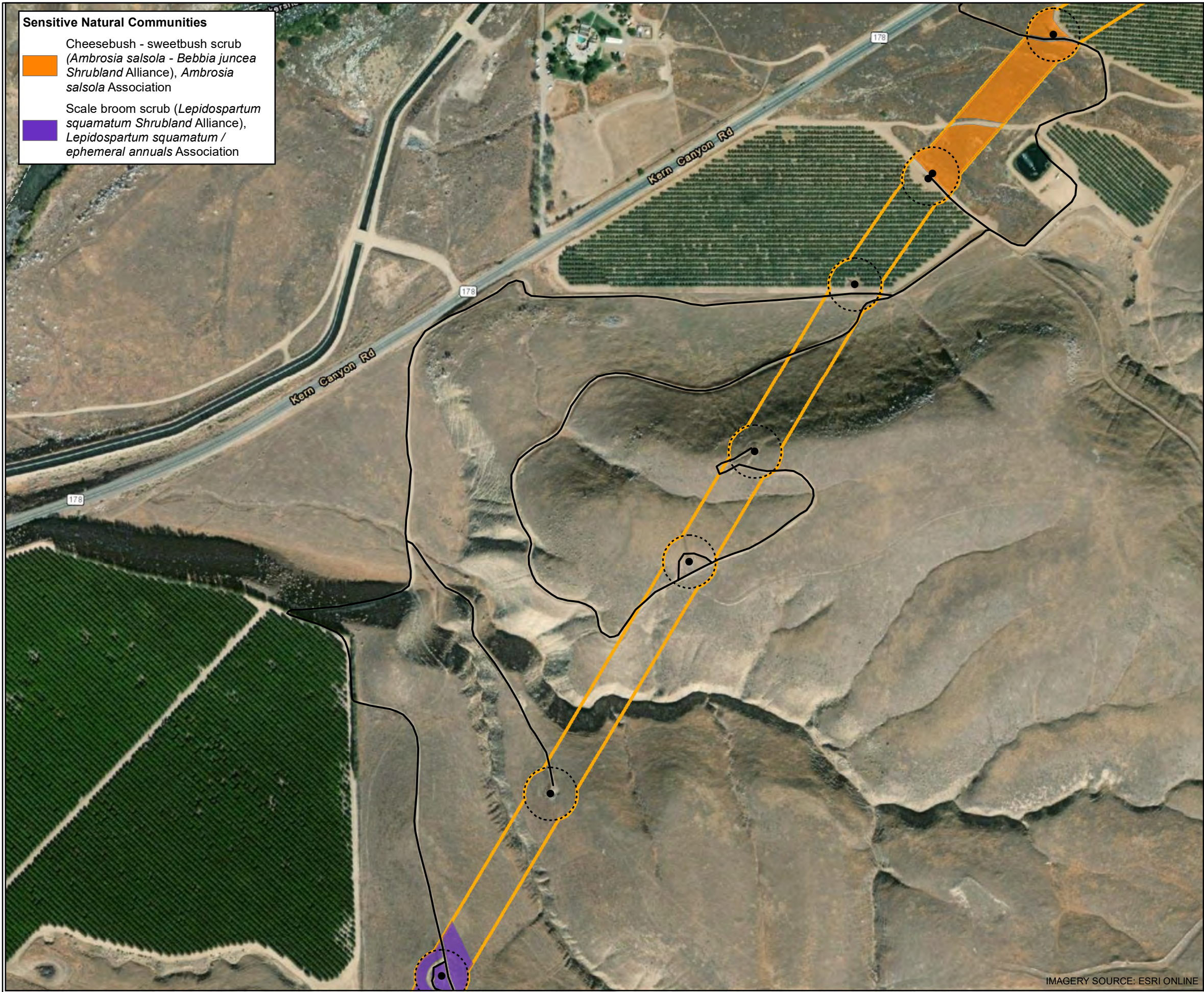


**GORMAN-KERN RIVER  
66 kV PROJECT**



**SENSITIVE BIOLOGICAL RESOURCES**



\\corparc\gis\Data\ArcGisData\GISPROJECTS\ENV T\1\ENVISCEISOE\_TLLR\ArcGIS\_Desktop\KERN\ITLLR Kern Figure 4 Sensitive Biological Resources Mapbook.mxd 9/29/2021 mg01044  
Coordinate System: NAD 1983 UTM Zone 11N







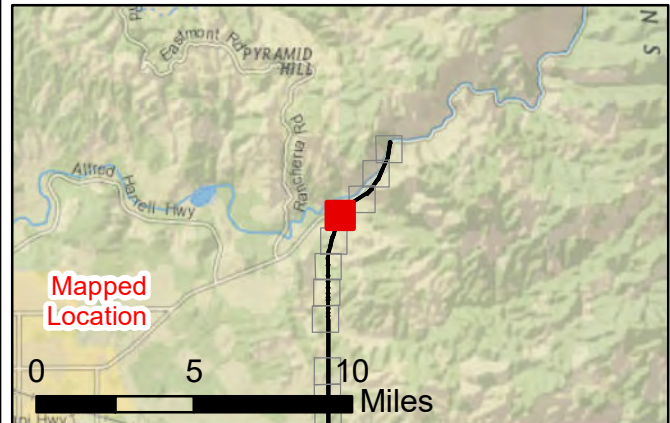
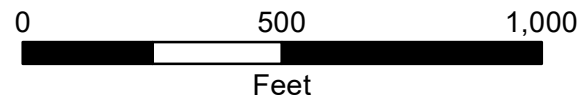
**Sensitive Natural Communities**

-  Cheesebush - sweetbush scrub (*Ambrosia salsola* - *Bebbia juncea* Shrubland Alliance), *Ambrosia salsola* Association
-  Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance), *Lepidospartum squamatum* / *ephemeral annuals* Association



**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



FIGURESET

4 of 52

IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N



**Sensitive Natural Communities**

Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance),  
*Lepidospartum squamatum* /  
*ephemeral annuals* Association



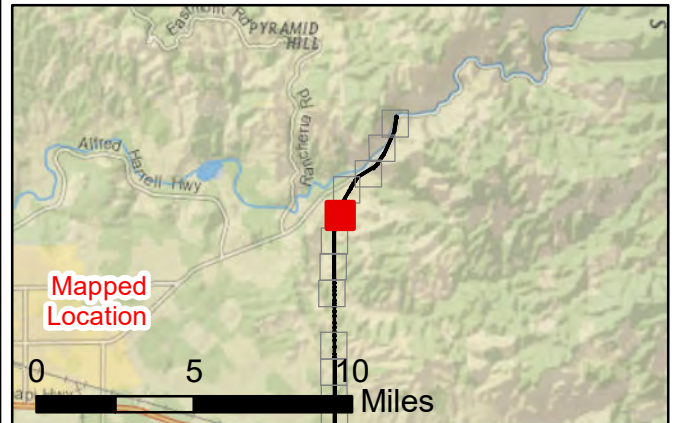
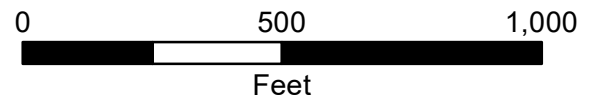
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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



**ARCADIS**

FIGURESET


5 of 52


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Coordinate System: NAD 1983 UTM Zone 11N





**Sensitive Natural Communities**

 Cheesebush - sweetbush scrub (*Ambrosia salsola* - *Bebbia juncea* Shrubland Alliance), *Ambrosia salsola* Association

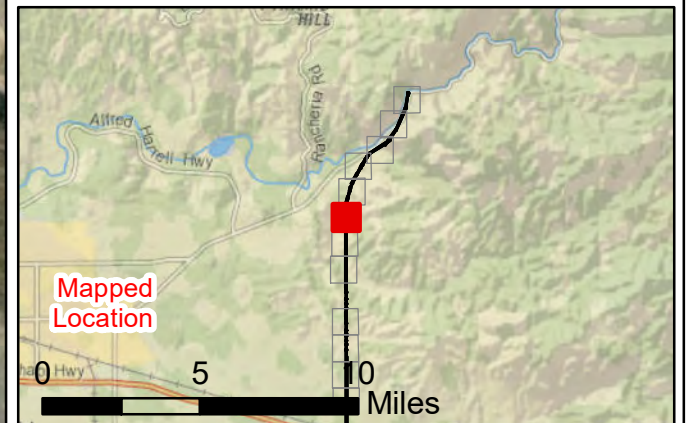
 Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance), *Lepidospartum squamatum* / *ephemeral annuals* Association



**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA

0 500 1,000  
Feet





**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**




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Coordinate System: NAD 1983 UTM Zone 11N

**Sensitive Wildlife Locations**






-  American Badger (*Taxidea taxus*)
-  Prairie Falcon (*Falco mexicanus*)

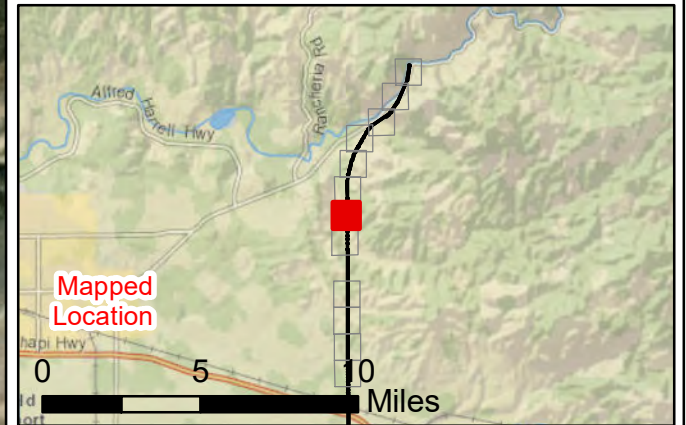
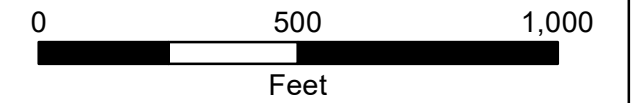
**Sensitive Natural Communities**

-  Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance), *Lepidospartum squamatum* / *ephemeral annuals* Association



**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



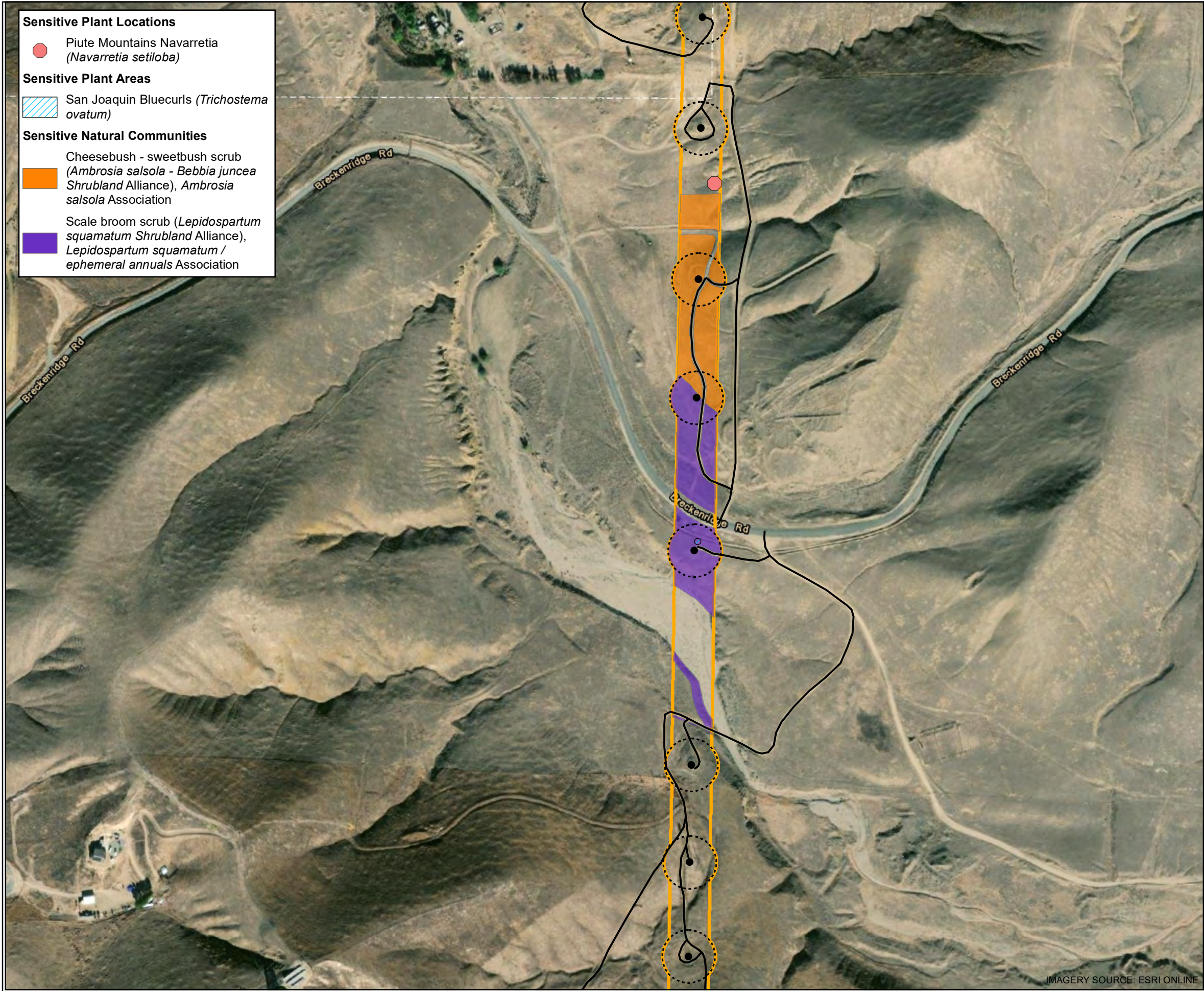
FIGURESET

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IMAGERY SOURCE: ESRI ONLINE



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Coordinate System: NAD 1983 UTM Zone 11N





#### Sensitive Plant Locations

-  Piute Mountains Navarretia (*Navarretia setiloba*)

#### Sensitive Plant Areas






-  San Joaquin Bluecurls (*Trichostema ovatum*)

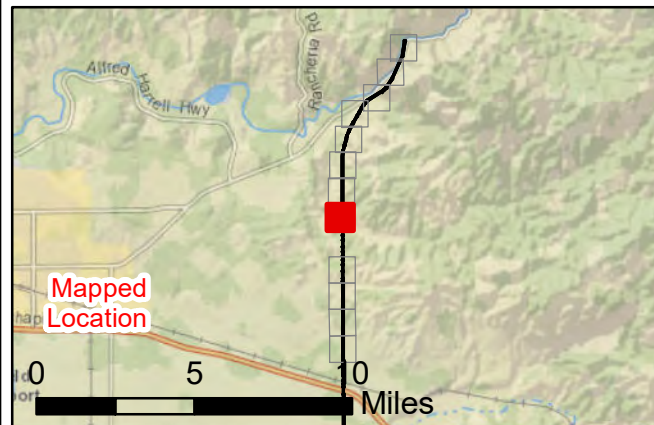
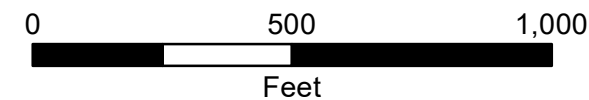
#### Sensitive Natural Communities

-  Cheesebush - sweetbush scrub (*Ambrosia salsola* - *Bebbia juncea* Shrubland Alliance), *Ambrosia salsola* Association
-  Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance), *Lepidospartum squamatum* / *ephemeral annuals* Association



#### LEGEND

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA




### GORMAN-KERN RIVER 66 kV PROJECT

#### SENSITIVE BIOLOGICAL RESOURCES




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Coordinate System: NAD 1983 UTM Zone 11N

**Sensitive Wildlife Locations**

 Prairie Falcon (*Falco mexicanus*)

**Sensitive Natural Communities**

 Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance),  
*Lepidospartum squamatum* /  
*ephemeral annuals* Association








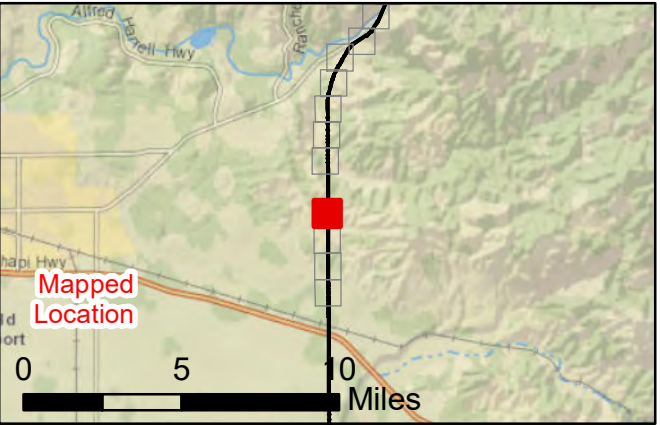
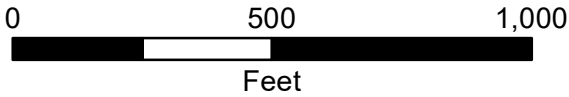
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**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA



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66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**





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**Sensitive Natural Communities**

Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance),  
*Lepidospartum squamatum* /  
*ephemeral annuals* Association



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**LEGEND**

● STRUCTURE LOCATION

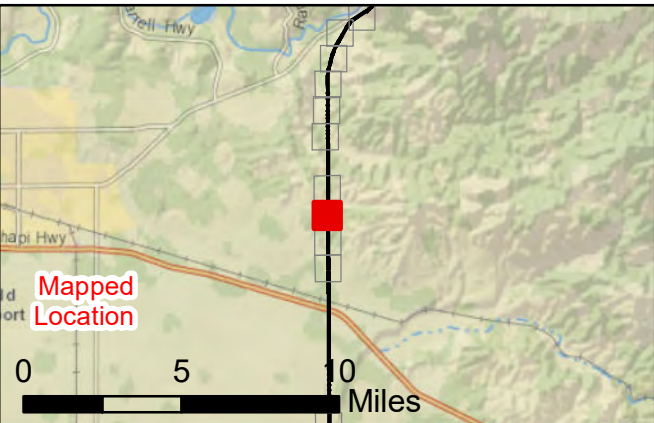
100 FOOT RADIUS TOWER BUFFER

□ SUBSTATION LOCATION

— ACCESS ROADS

□ SURVEY AREA

0 500 1,000  
Feet



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



FIGURESET

10 of 52

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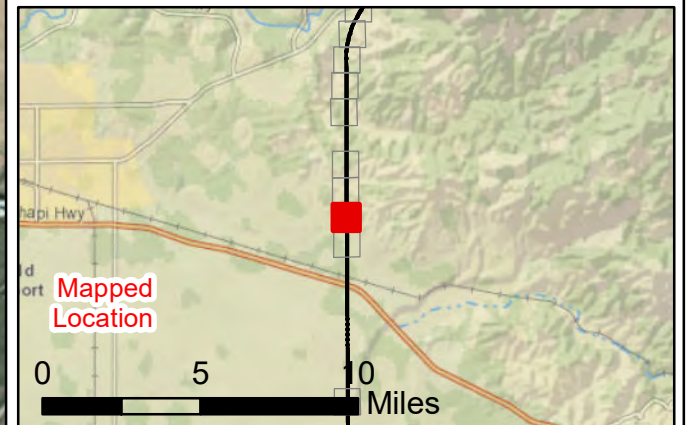
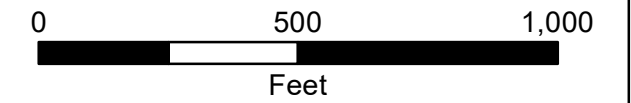
**Sensitive Natural Communities**

Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance),  
*Lepidospartum squamatum* /  
ephemeral annuals Association



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



FIGURESET



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IMAGERY SOURCE: ESRI ONLINE








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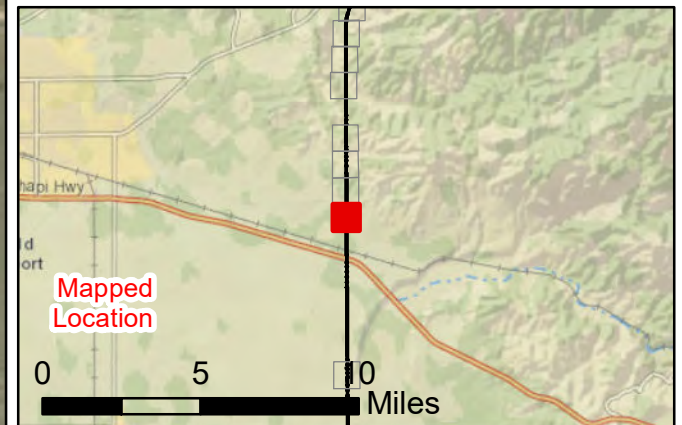
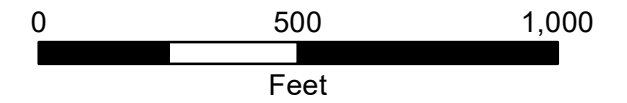
**Sensitive Natural Communities**

-  Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance), *Ericameria nauseosa* Association
-  Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance), *Lepidospartum squamatum* / *ephemeral annuals* Association



**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA

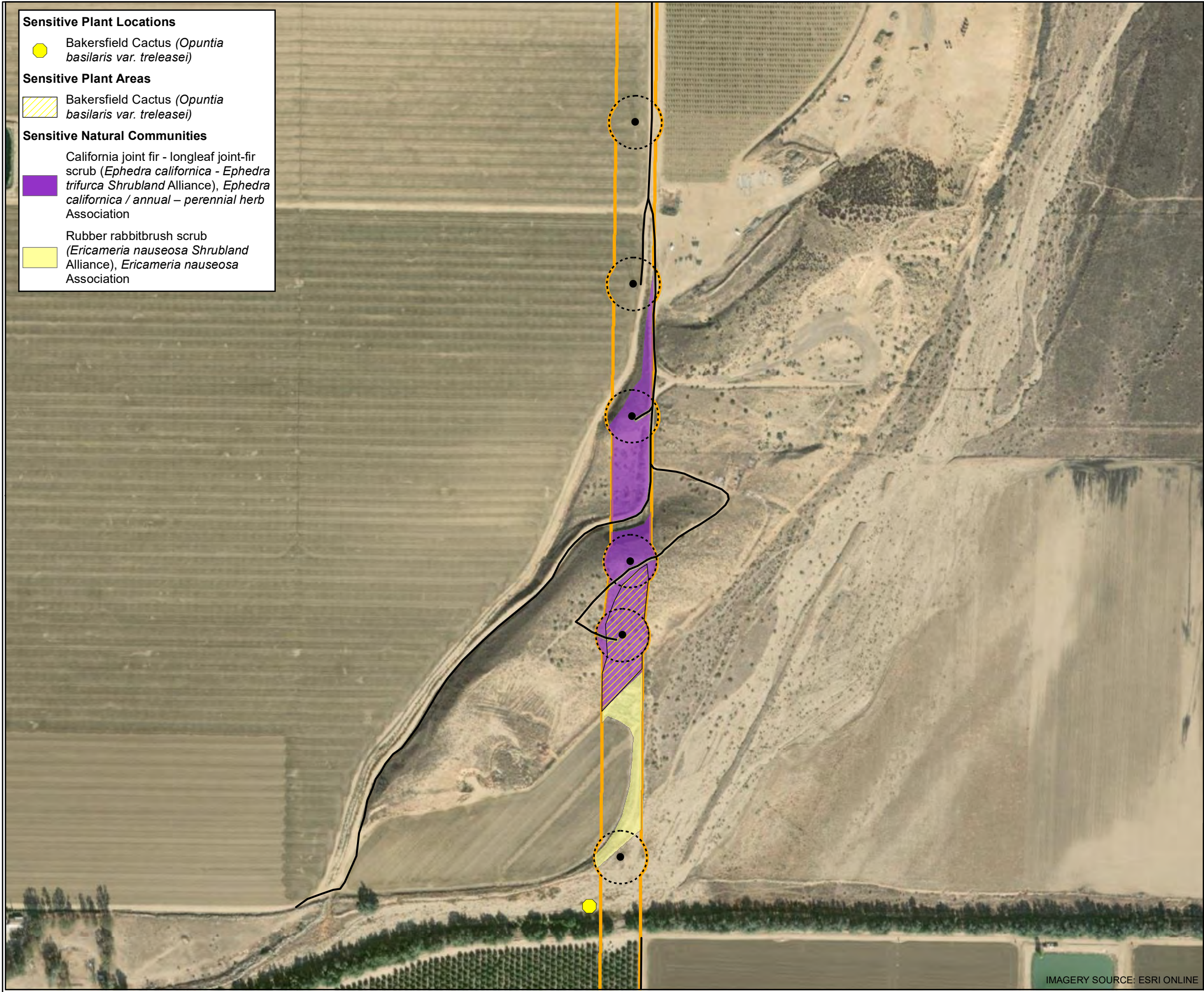


**GORMAN-KERN RIVER  
66 kV PROJECT**


**SENSITIVE BIOLOGICAL RESOURCES**




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Coordinate System: NAD 1983 UTM Zone 11N





**Sensitive Plant Locations**

-  Bakersfield Cactus (*Opuntia basilaris* var. *treleasei*)

**Sensitive Plant Areas**






-  Bakersfield Cactus (*Opuntia basilaris* var. *treleasei*)

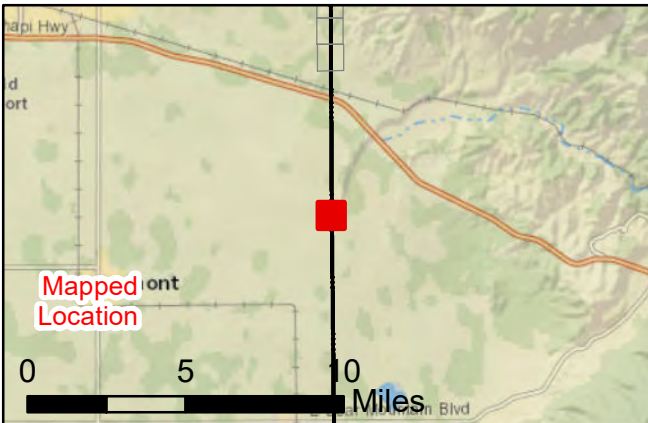
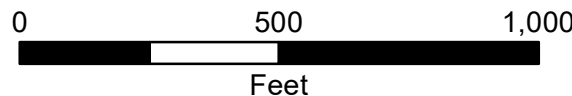
**Sensitive Natural Communities**

-  California joint fir - longleaf joint-fir scrub (*Ephedra californica* - *Ephedra trifurca* Shrubland Alliance), *Ephedra californica* / annual – perennial herb Association
-  Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance), *Ericameria nauseosa* Association



**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



FIGURESET

13 of 52


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Coordinate System: NAD 1983 UTM Zone 11N



**Sensitive Wildlife Locations**

-  San Joaquin Kit Fox (*Vulpes macrotis mutica*)


**Sensitive Plant Locations**

-  San Joaquin Bluecurls (*Trichostema ovatum*)

**Sensitive Plant Areas**






-  San Joaquin Bluecurls (*Trichostema ovatum*)

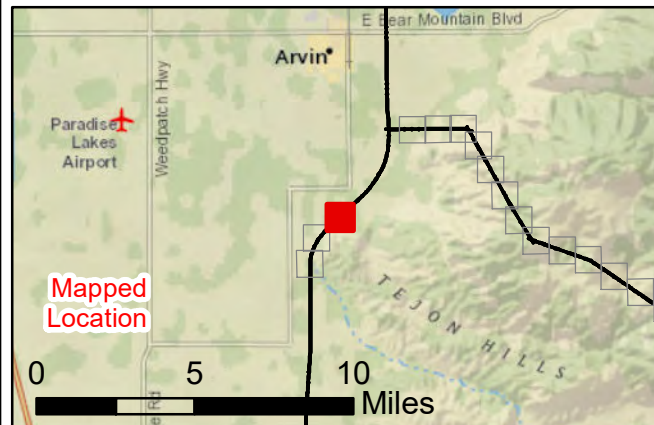
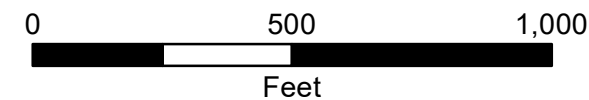
**Sensitive Natural Communities**

-  Cheesebush - sweetbush scrub (*Ambrosia salsola* - *Bebbia juncea* Shrubland Alliance), *Ambrosia salsola* Association



**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA




**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**




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Coordinate System: NAD 1983 UTM Zone 11N

**Sensitive Wildlife Locations**

 San Joaquin Kit Fox (*Vulpes macrotis mutica*)


**Sensitive Plant Locations**

 San Joaquin Bluecurls (*Trichostema ovatum*)

**Sensitive Plant Areas**






 San Joaquin Bluecurls (*Trichostema ovatum*)

**Sensitive Natural Communities**

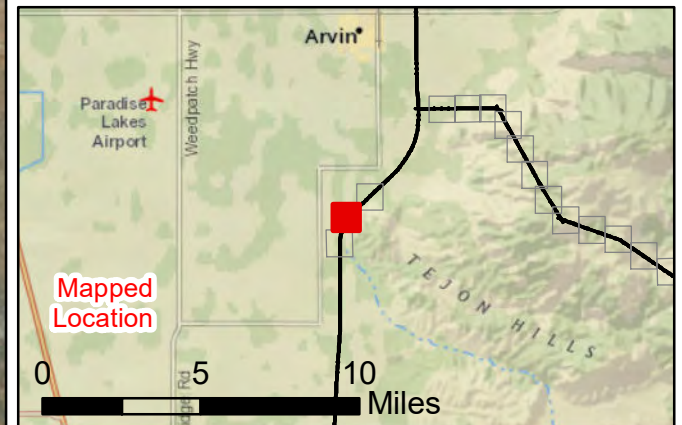
 Cheesebush - sweetbush scrub (*Ambrosia salsola* - *Bebbia juncea* Shrubland Alliance), *Ambrosia salsola* Association



**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA

0 500 1,000  
Feet

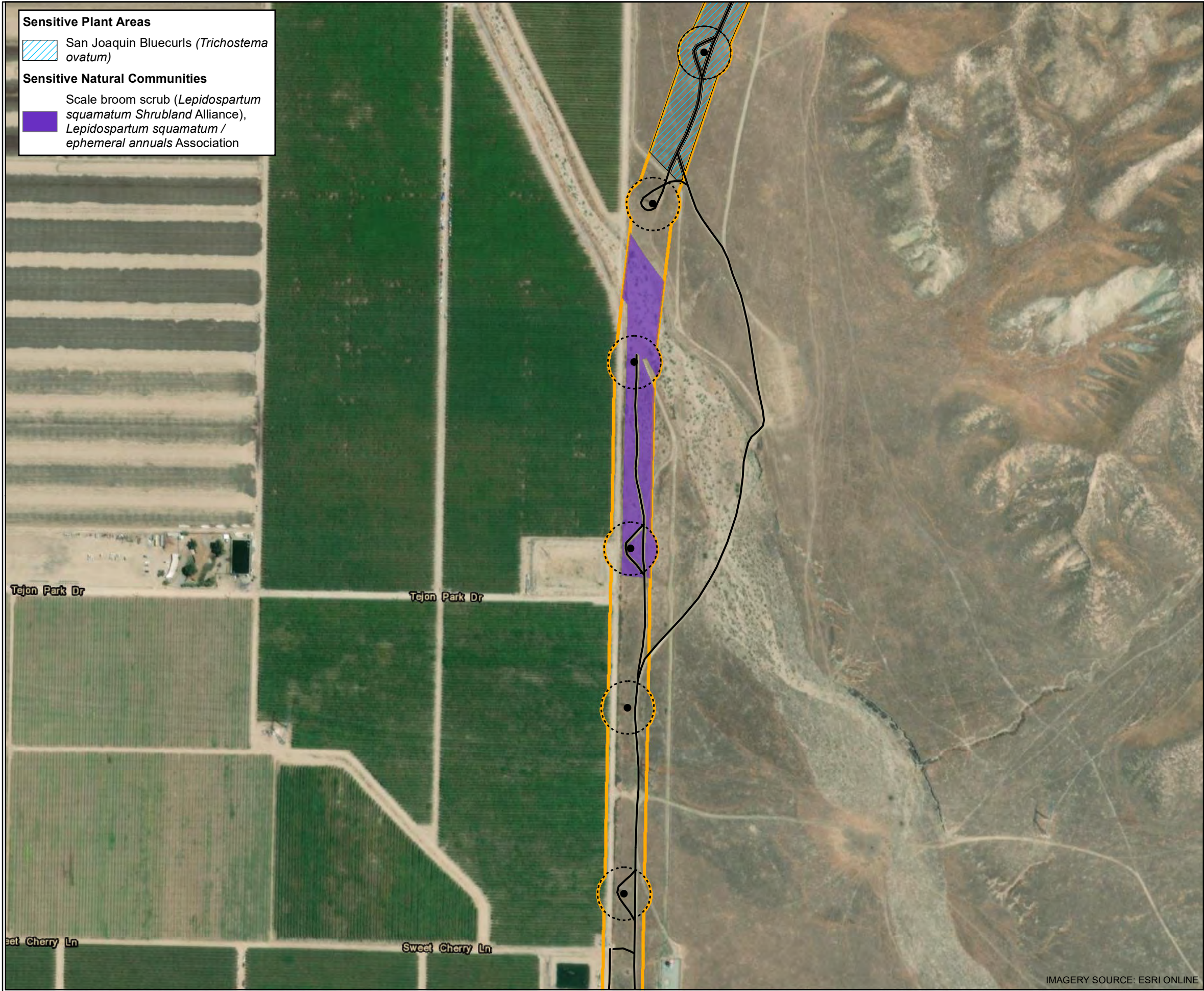


**GORMAN-KERN RIVER  
66 kV PROJECT**


**SENSITIVE BIOLOGICAL RESOURCES**




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**Sensitive Plant Areas**

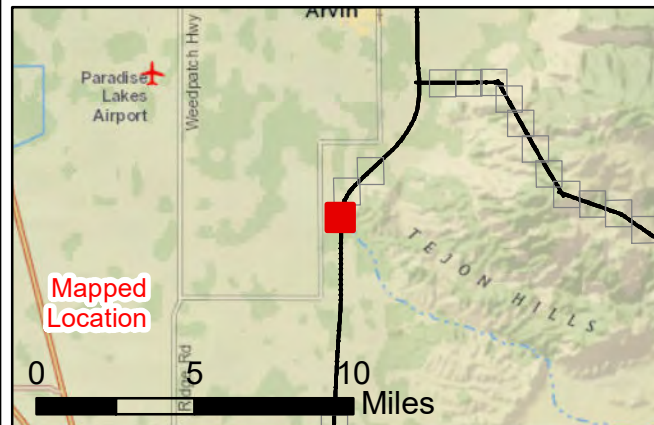
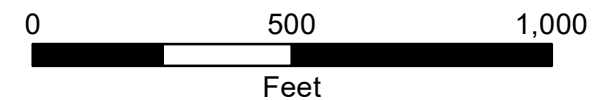
 San Joaquin Bluecurls (*Trichostema ovatum*)

**Sensitive Natural Communities**

 Scale broom scrub (*Lepidospartum squamatum* Shrubland Alliance), *Lepidospartum squamatum* / ephemeral annuals Association

**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA

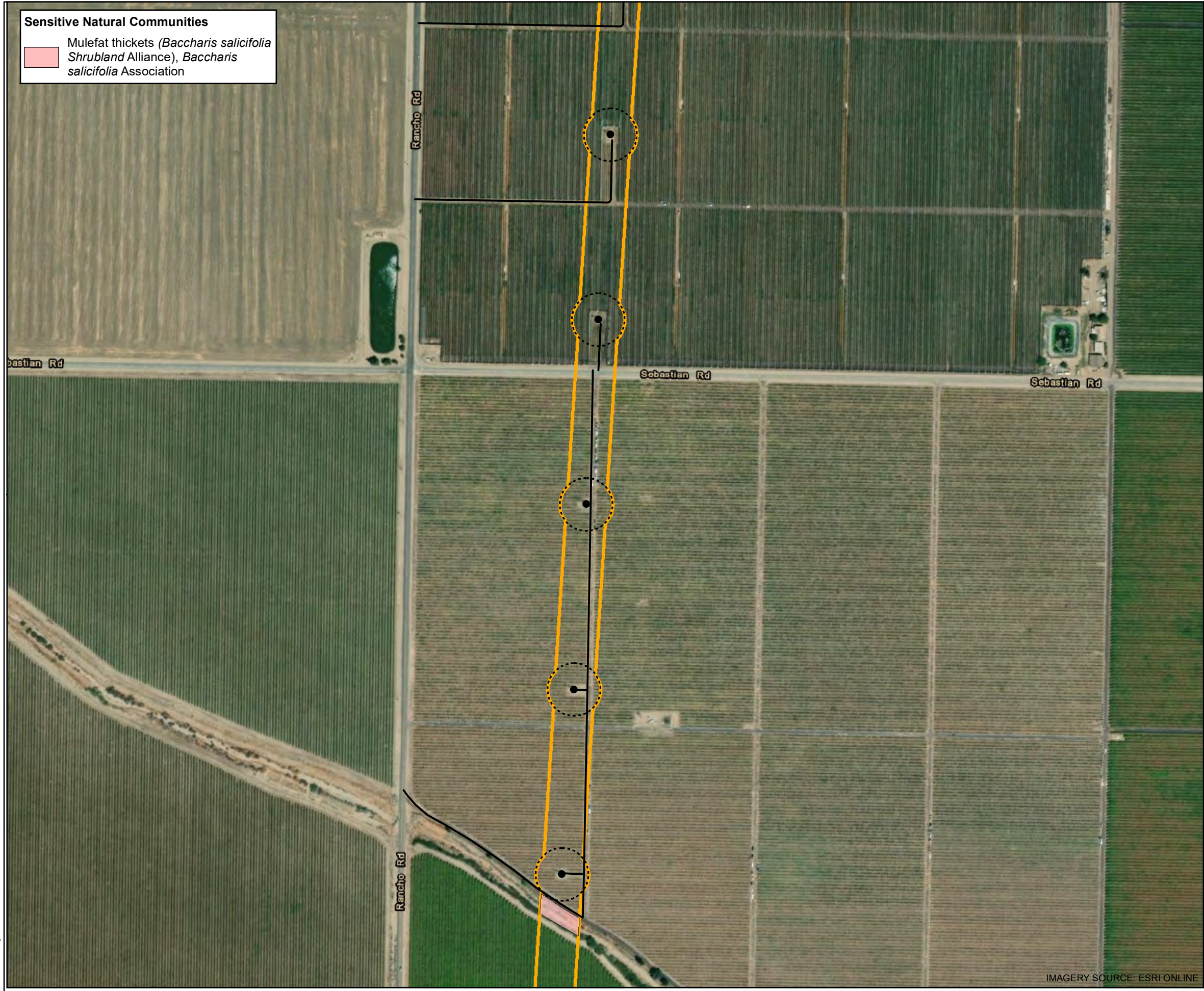


**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



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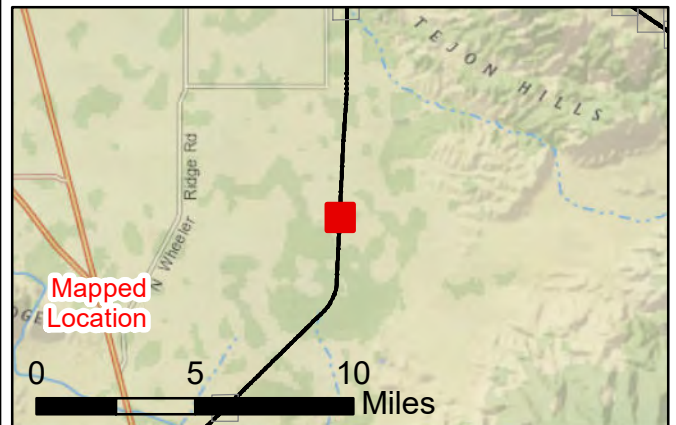
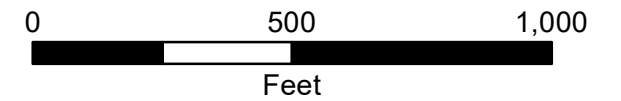
**Sensitive Natural Communities**

Mulefat thickets (*Baccharis salicifolia* Shrubland Alliance), *Baccharis salicifolia* Association



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



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Coordinate System: NAD 1983 UTM Zone 11N








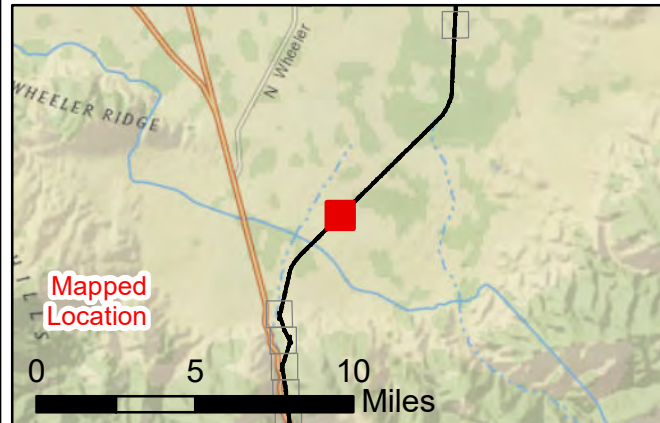
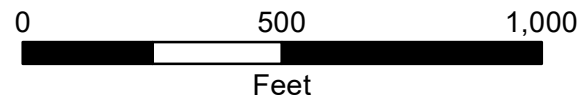
**Sensitive Wildlife Locations**

 California Horned Lark (*Eremophila alpestris actia*)



**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



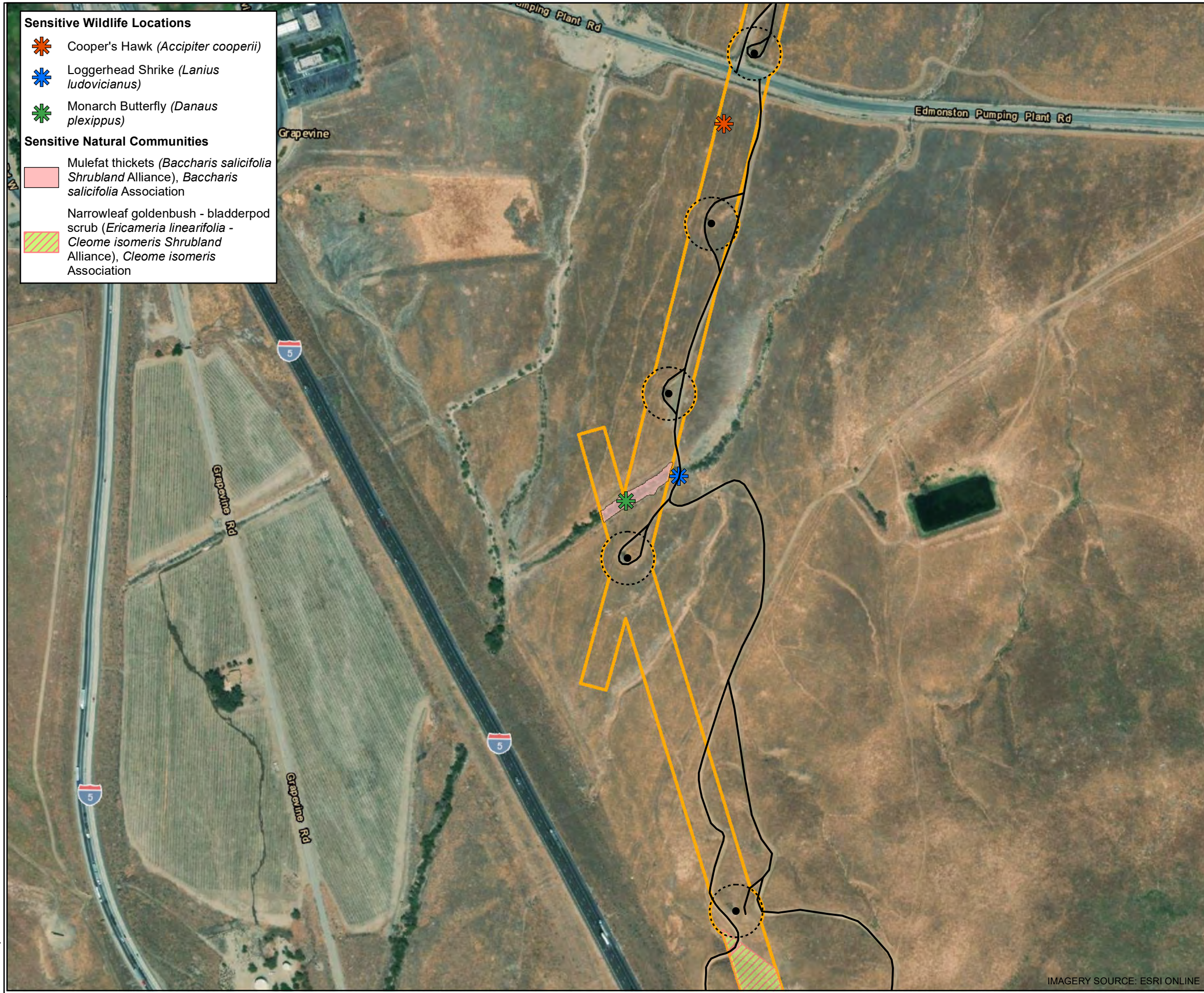
FIGURESET

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IMAGERY SOURCE: ESRI ONLINE

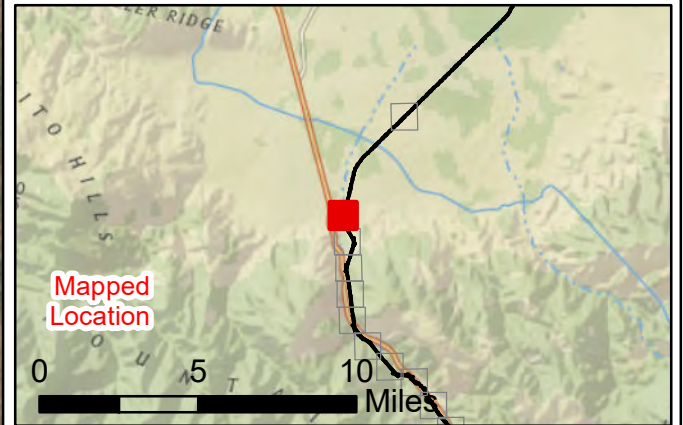
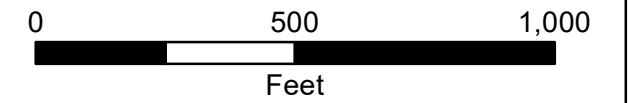


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Coordinate System: NAD 1983 UTM Zone 11N



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

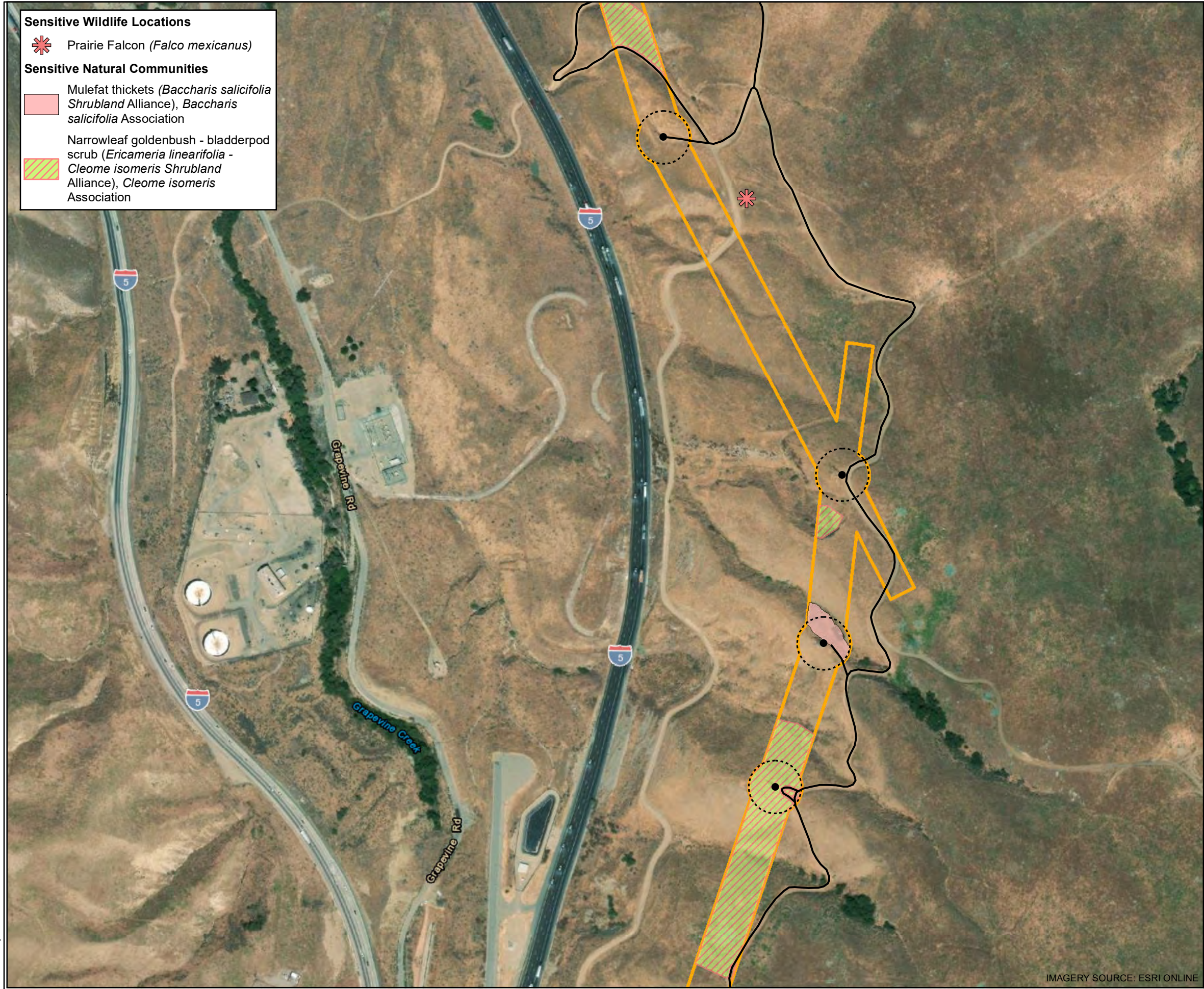


**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



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**Sensitive Wildlife Locations**

✱ Prairie Falcon (*Falco mexicanus*)

**Sensitive Natural Communities**

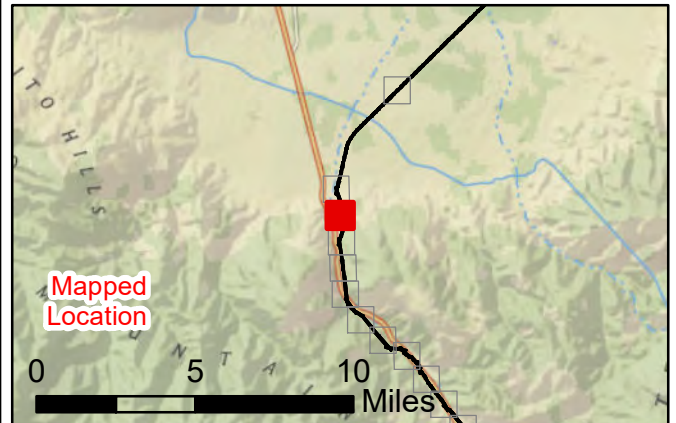
■ Mulefat thickets (*Baccharis salicifolia* Shrubland Alliance), *Baccharis salicifolia* Association

■ Narrowleaf goldenbush - bladderpod scrub (*Ericameria linearifolia* - *Cleome isomeris* Shrubland Alliance), *Cleome isomeris* Association

**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

0 500 1,000  
Feet



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



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Coordinate System: NAD 1983 UTM Zone 11N

**Sensitive Wildlife Locations**

- ✱ Oregon Vesper Sparrow (*Poocetes gramineus affinis*)

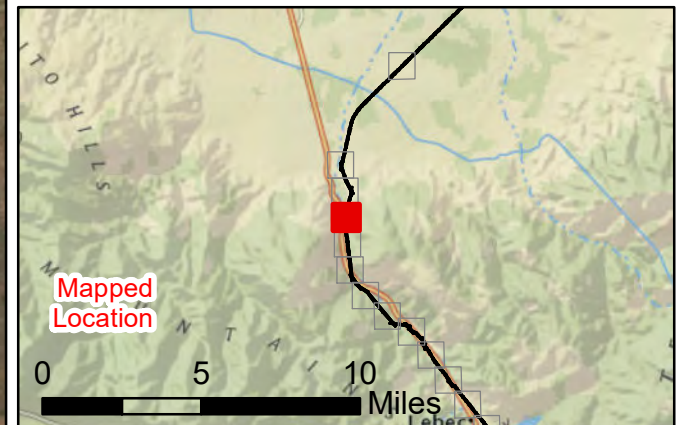
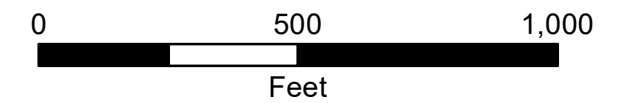
**Sensitive Natural Communities**

- Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* – *Aesculus californica* / grass Association
- Narrowleaf goldenbush - bladderpod scrub (*Ericameria linearifolia* - *Cleome isomeris* Shrubland Alliance), *Cleome isomeris* Association



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



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### Sensitive Natural Communities

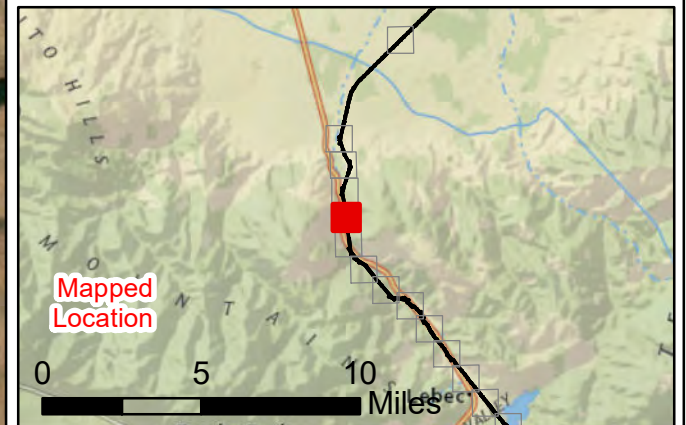
Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* – *Aesculus californica* / grass Association



### LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

0 500 1,000  
Feet



### GORMAN-KERN RIVER 66 kV PROJECT

### SENSITIVE BIOLOGICAL RESOURCES



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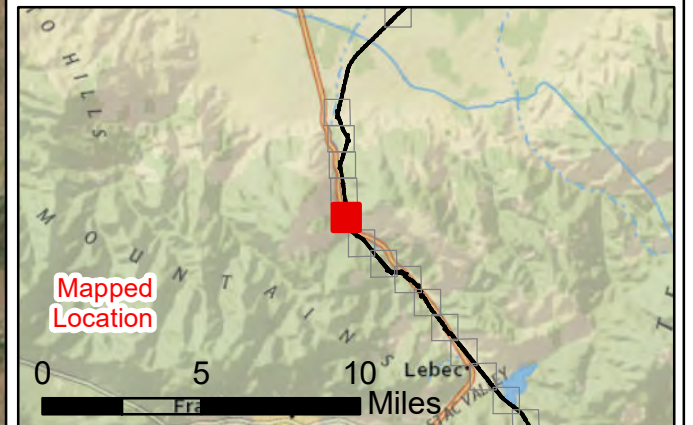
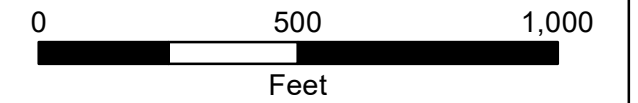
**Sensitive Natural Communities**

- Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* – *Aesculus californica* / grass Association
- California buckeye groves (*Aesculus californica* Woodland Alliance), *Aesculus californica* Association
- California buckwheat scrub (*Eriogonum fasciculatum* Shrubland Alliance), *Eriogonum fasciculatum* Association
- Mixed oak forest and woodland (*Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni)* Woodland) Alliance, *Mixed oak* – *Aesculus californica* / grass Association
- Narrowleaf goldenbush - bladderpod scrub (*Ericameria linearifolia* - *Cleome isomeris* Shrubland Alliance), *Cleome isomeris* Association
- Valley oak woodland and forest (*Quercus lobata* Woodland) Alliance, *Quercus lobata* / grass Association



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

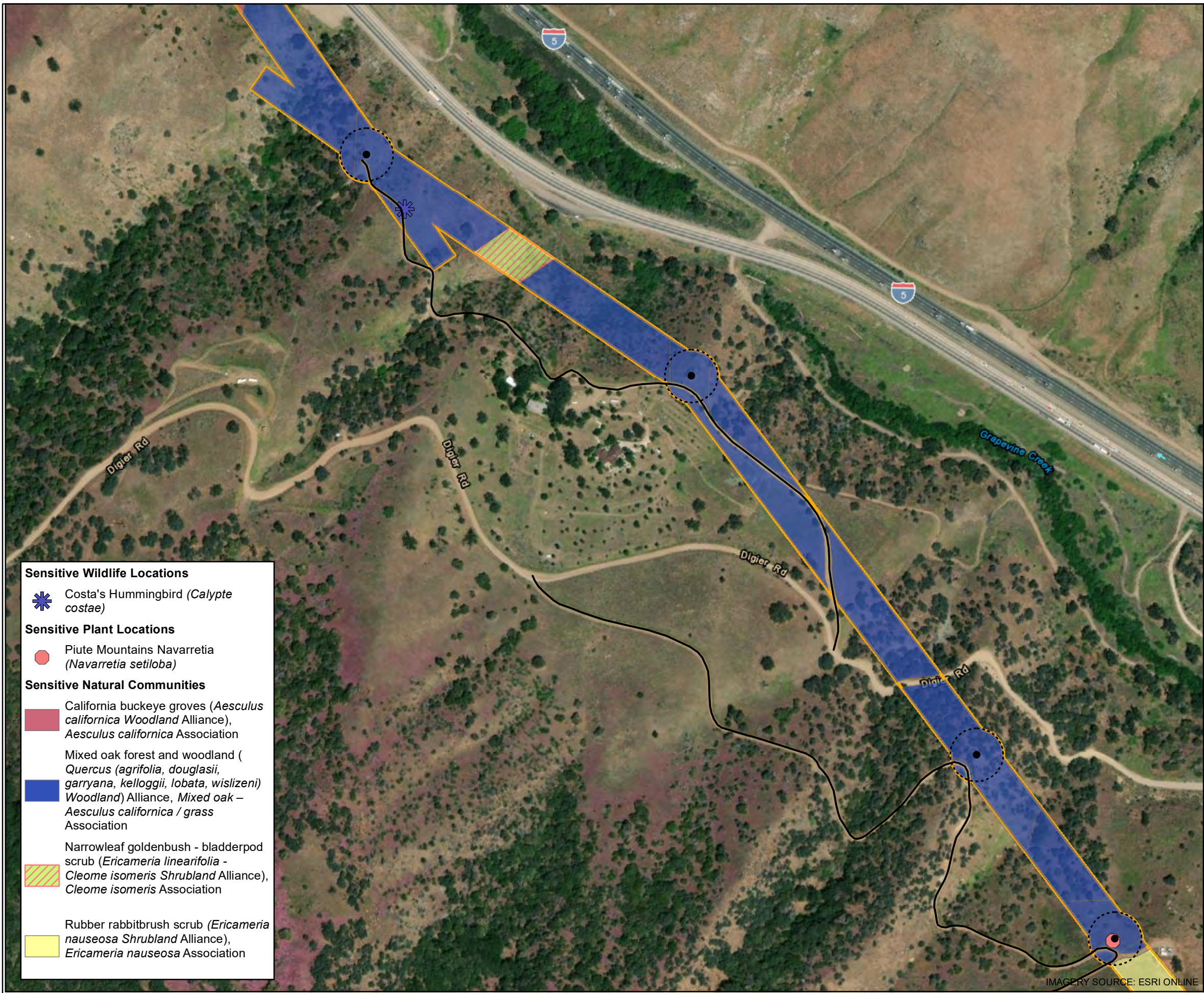


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**SENSITIVE BIOLOGICAL RESOURCES**



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**Sensitive Wildlife Locations**  
\* Costa's Hummingbird (*Calypte costae*)

**Sensitive Plant Locations**  
● Piute Mountains Navarretia (*Navarretia setiloba*)

**Sensitive Natural Communities**  
■ California buckeye groves (*Aesculus californica* Woodland Alliance), *Aesculus californica* Association  
■ Mixed oak forest and woodland (*Quercus (agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni)* Woodland) Alliance, Mixed oak – *Aesculus californica* / grass Association  
■ Narrowleaf goldenbush - bladderpod scrub (*Ericameria linearifolia* - *Cleome isomeris* Shrubland Alliance), *Cleome isomeris* Association  
■ Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance), *Ericameria nauseosa* Association



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**LEGEND**

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

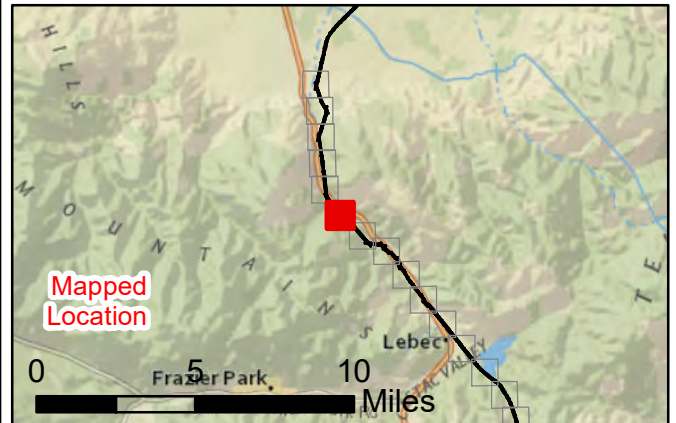
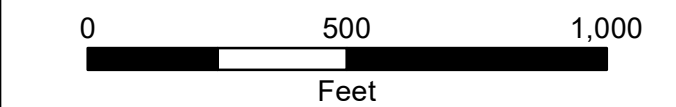
SUBSTATION LOCATION

—

ACCESS ROADS


□

SURVEY AREA



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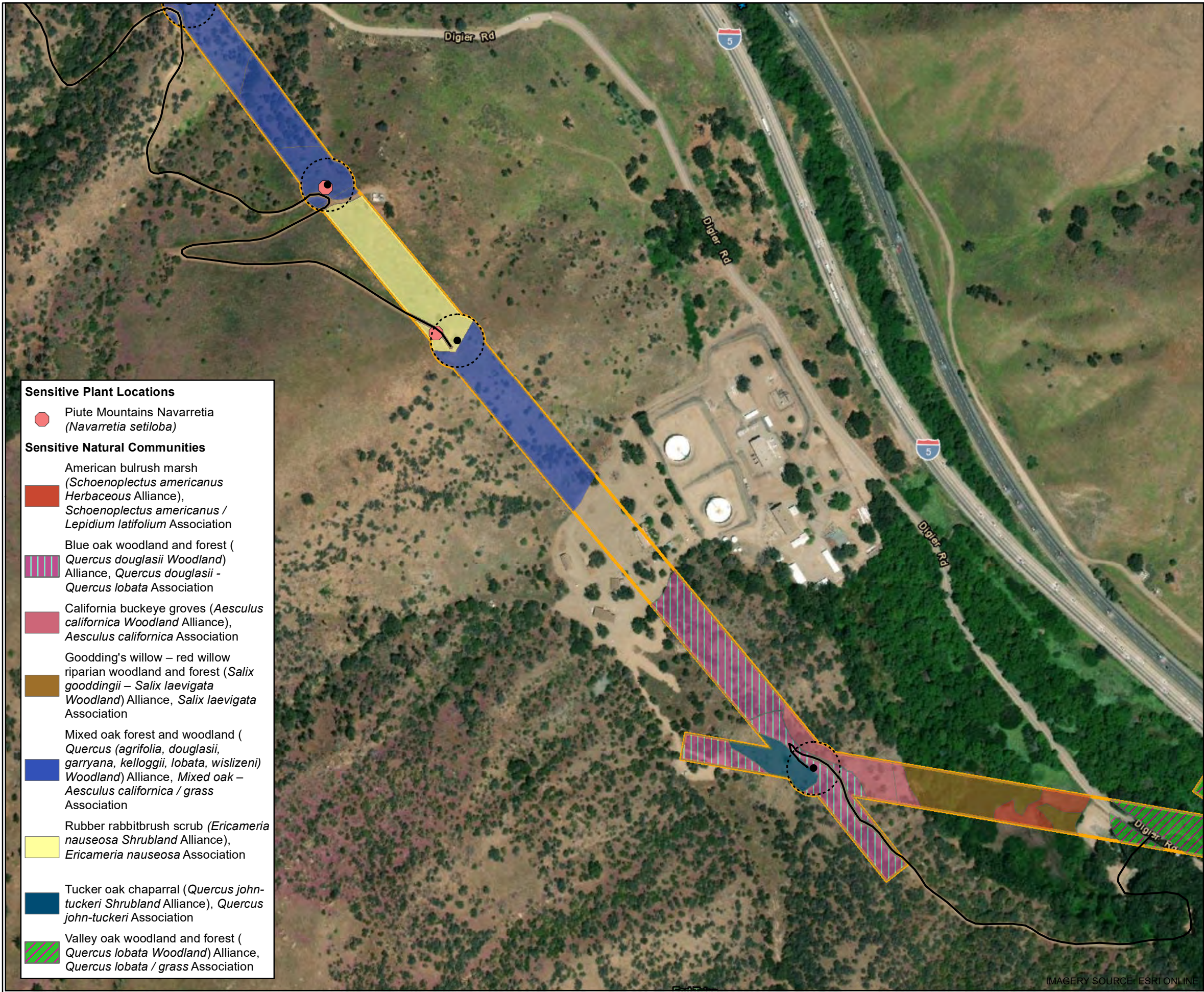
**SENSITIVE BIOLOGICAL RESOURCES**



**FIGURESET**  
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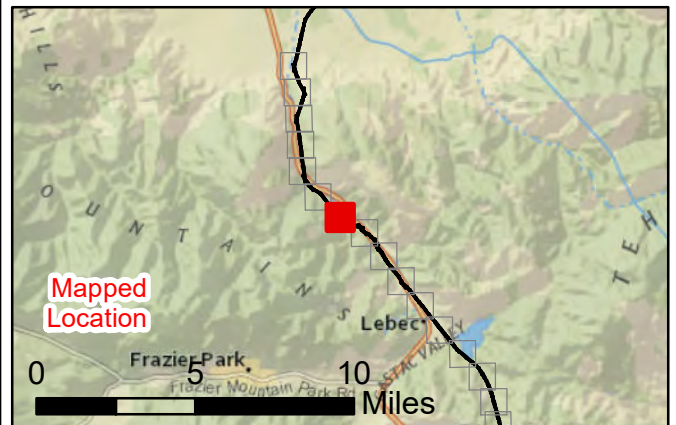
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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

0 500 1,000  
Feet

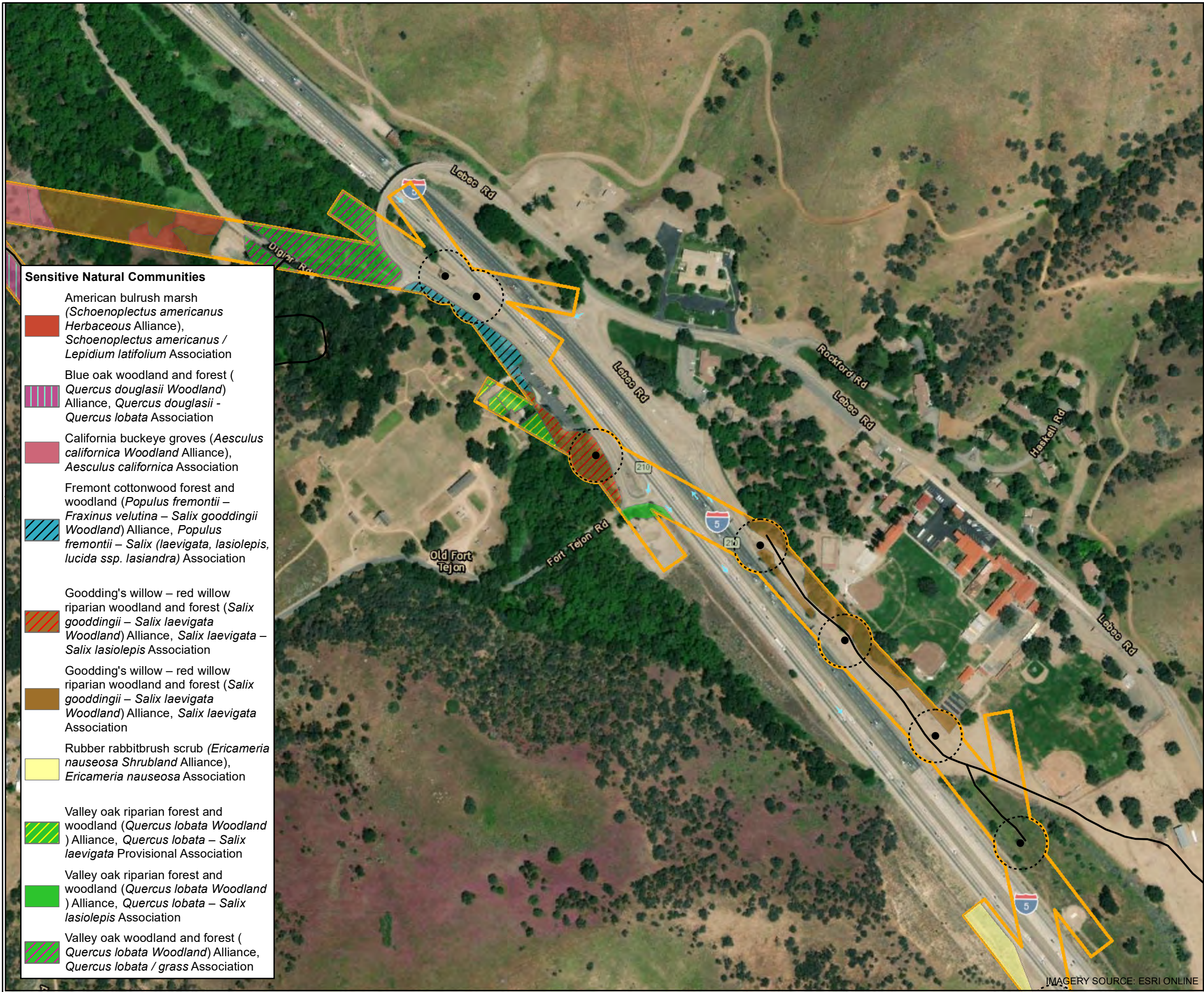


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66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



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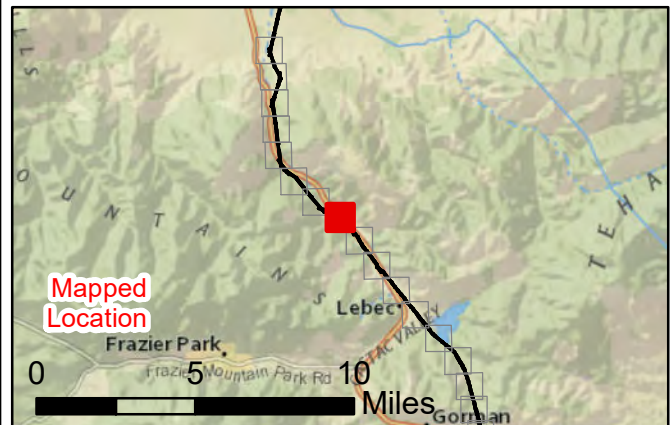
**Sensitive Natural Communities**

- American bulrush marsh (*Schoenoplectus americanus* Herbaceous Alliance), *Schoenoplectus americanus* / *Lepidium latifolium* Association
- Blue oak woodland and forest ( *Quercus douglasii* Woodland) Alliance, *Quercus douglasii* - *Quercus lobata* Association
- California buckeye groves (*Aesculus californica* Woodland Alliance), *Aesculus californica* Association
- Fremont cottonwood forest and woodland (*Populus fremontii* – *Fraxinus velutina* – *Salix gooddingii* Woodland) Alliance, *Populus fremontii* – *Salix (laevigata, lasiolepis, lucida ssp. lasiandra)* Association
- Goodding's willow – red willow riparian woodland and forest (*Salix gooddingii* – *Salix laevigata* Woodland) Alliance, *Salix laevigata* – *Salix lasiolepis* Association
- Goodding's willow – red willow riparian woodland and forest (*Salix gooddingii* – *Salix laevigata* Woodland) Alliance, *Salix laevigata* Association
- Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance), *Ericameria nauseosa* Association
- Valley oak riparian forest and woodland (*Quercus lobata* Woodland ) Alliance, *Quercus lobata* – *Salix laevigata* Provisional Association
- Valley oak riparian forest and woodland (*Quercus lobata* Woodland ) Alliance, *Quercus lobata* – *Salix lasiolepis* Association
- Valley oak woodland and forest ( *Quercus lobata* Woodland) Alliance, *Quercus lobata* / grass Association

**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

0 500 1,000  
Feet

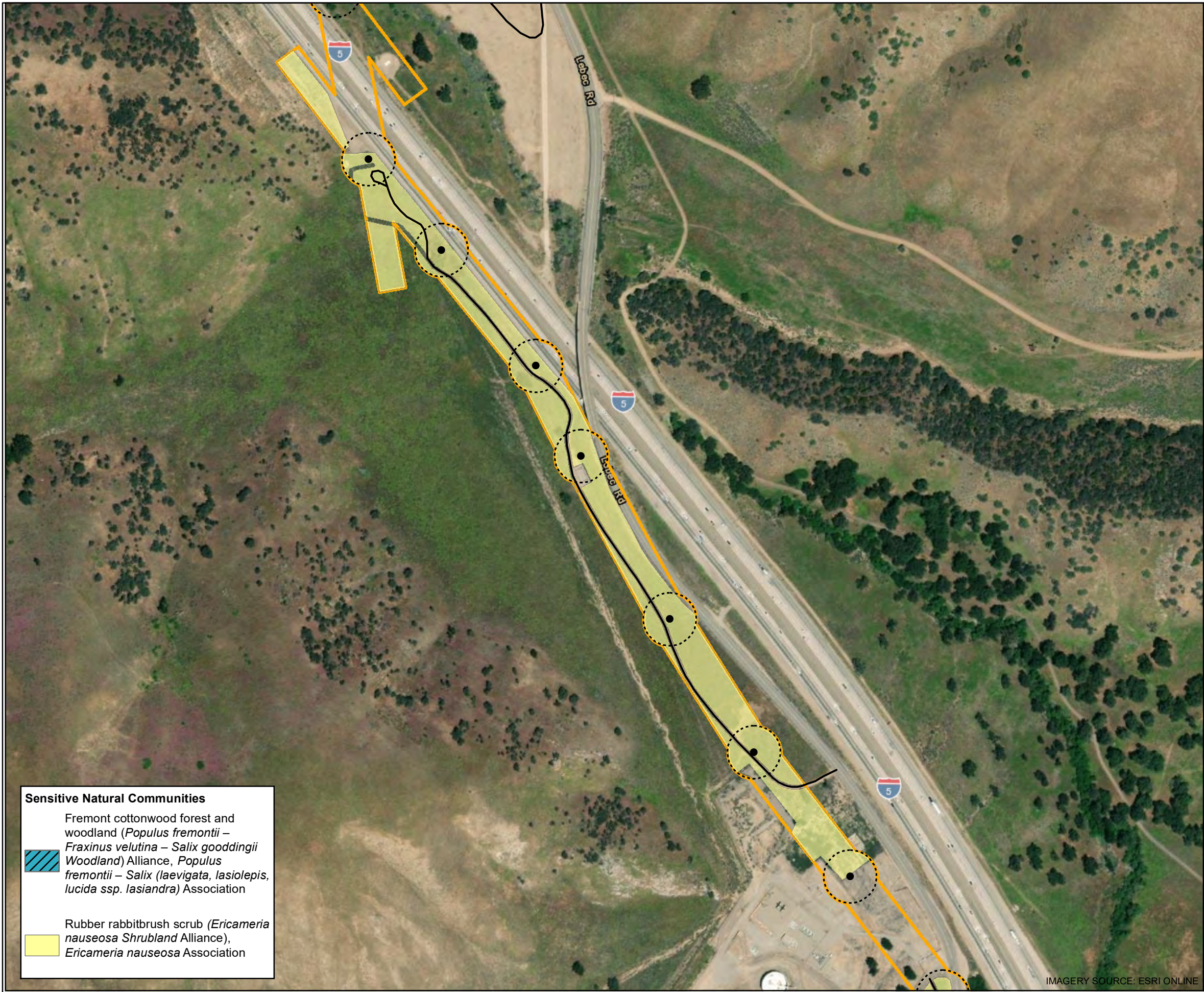


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**SENSITIVE BIOLOGICAL RESOURCES**



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Coordinate System: NAD 1983 UTM Zone 11N



**Sensitive Natural Communities**

Fremont cottonwood forest and woodland (*Populus fremontii* – *Fraxinus velutina* – *Salix gooddingii* Woodland) Alliance, *Populus fremontii* – *Salix (laevigata, lasiolepis, lucida ssp. lasiandra)* Association

Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance), *Ericameria nauseosa* Association



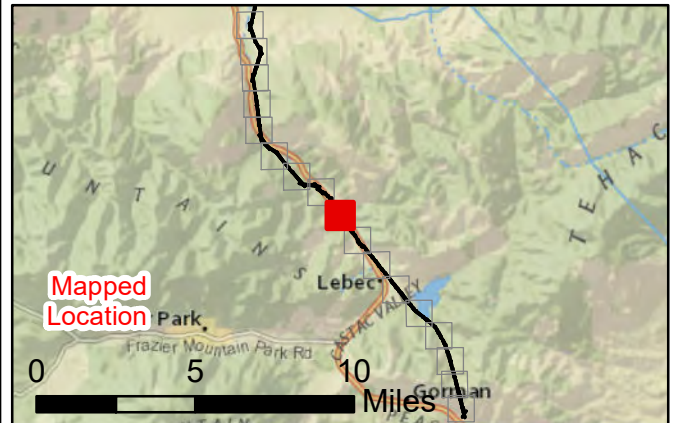
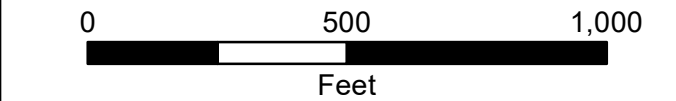
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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



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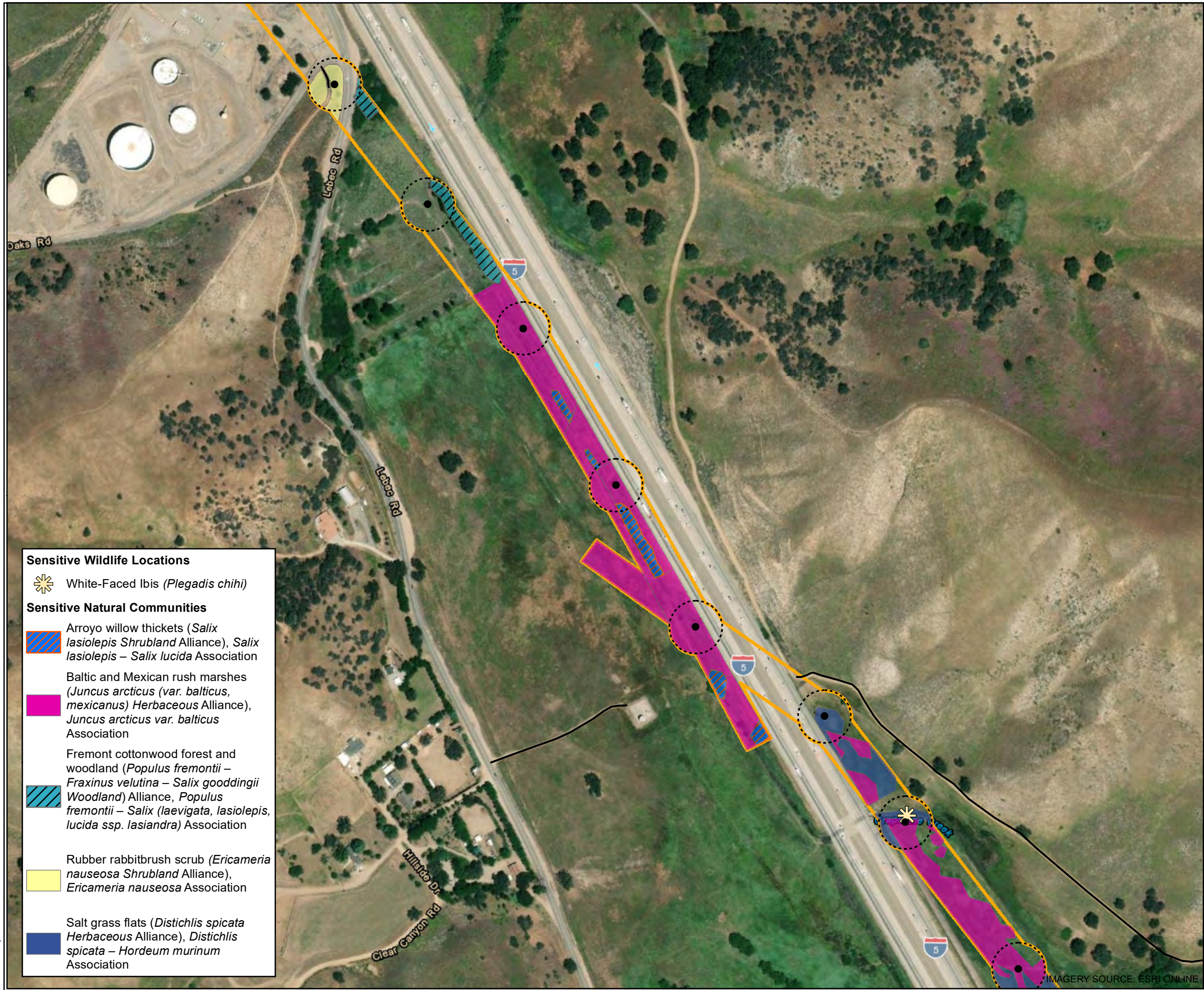


**FIGURESET**

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**Sensitive Wildlife Locations**  
✴ White-Faced Ibis (*Plegadis chihi*)

**Sensitive Natural Communities**  


 Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance), *Salix lasiolepis* – *Salix lucida* Association

 Baltic and Mexican rush marshes (*Juncus arcticus* (var. *balticus*, *mexicanus*) Herbaceous Alliance), *Juncus arcticus* var. *balticus* Association


 Fremont cottonwood forest and woodland (*Populus fremontii* – *Fraxinus velutina* – *Salix gooddingii* Woodland) Alliance, *Populus fremontii* – *Salix* (*laevigata*, *lasiolepis*, *lucida* ssp. *lasiandra*) Association

 Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance), *Ericameria nauseosa* Association


 Salt grass flats (*Distichlis spicata* Herbaceous Alliance), *Distichlis spicata* – *Hordeum murinum* Association





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**LEGEND**  

 STRUCTURE LOCATION

 100 FOOT RADIUS TOWER BUFFER

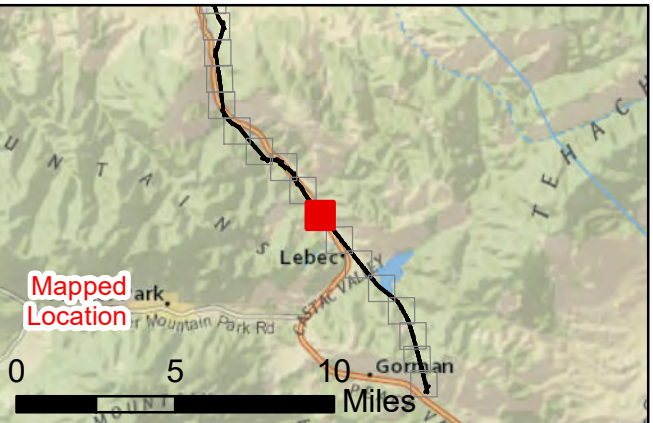
 SUBSTATION LOCATION

 ACCESS ROADS

 SURVEY AREA

05001,000


Feet



0510Miles

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**SENSITIVE BIOLOGICAL RESOURCES**

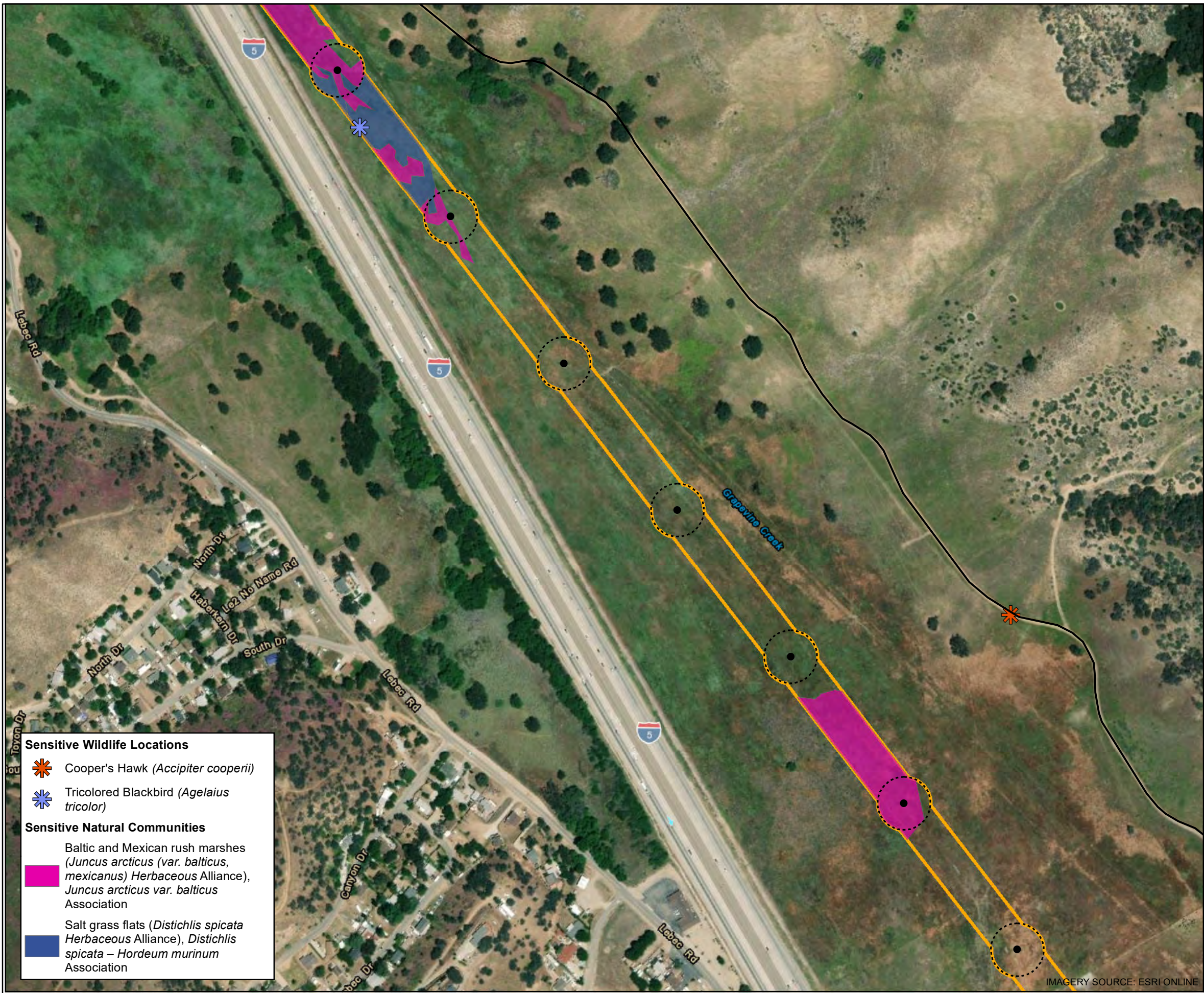
**ARCADIS**

FIGURESET  
28 of 52

IMAGERY SOURCE: ESRI ONLINE



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**Sensitive Wildlife Locations**

- Cooper's Hawk (*Accipiter cooperii*)
- Tricolored Blackbird (*Agelaius tricolor*)

**Sensitive Natural Communities**

- Baltic and Mexican rush marshes (*Juncus arcticus* (var. *balticus*, *mexicanus*) Herbaceous Alliance), *Juncus arcticus* var. *balticus* Association
- Salt grass flats (*Distichlis spicata* Herbaceous Alliance), *Distichlis spicata* – *Hordeum murinum* Association



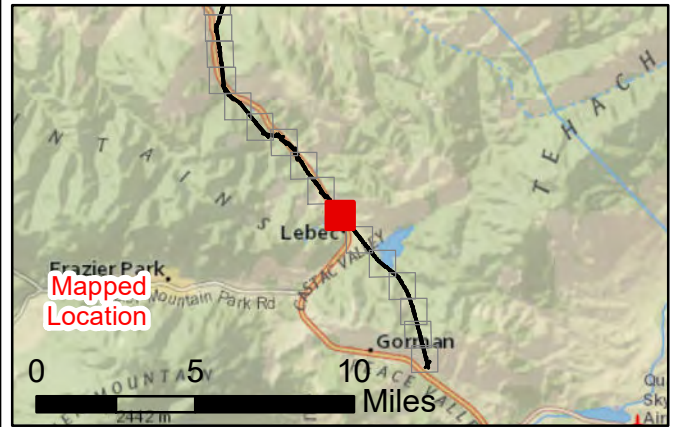
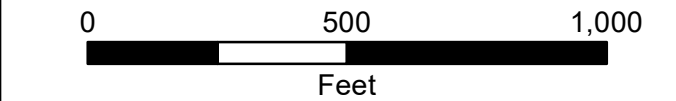
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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



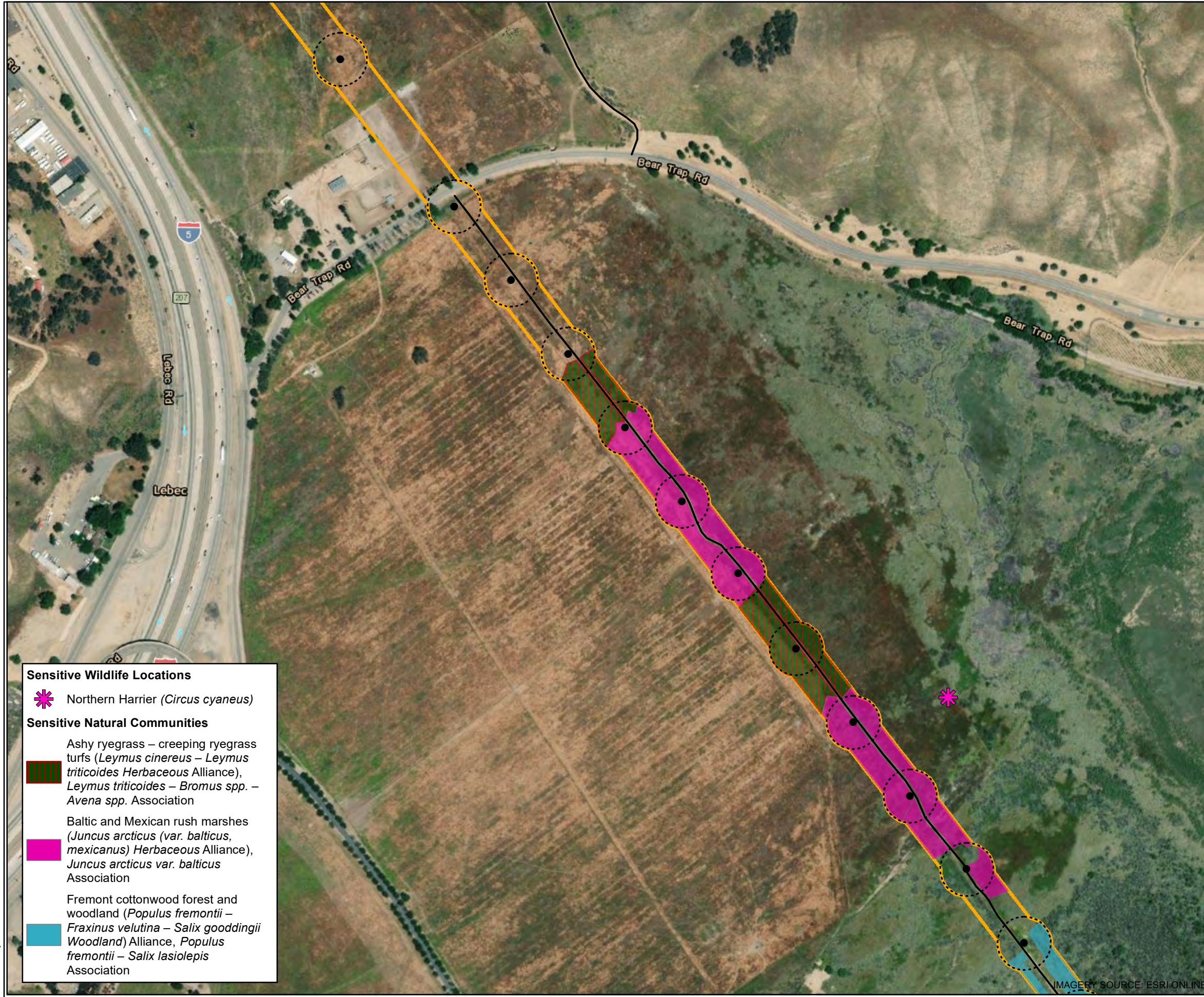
FIGURESET

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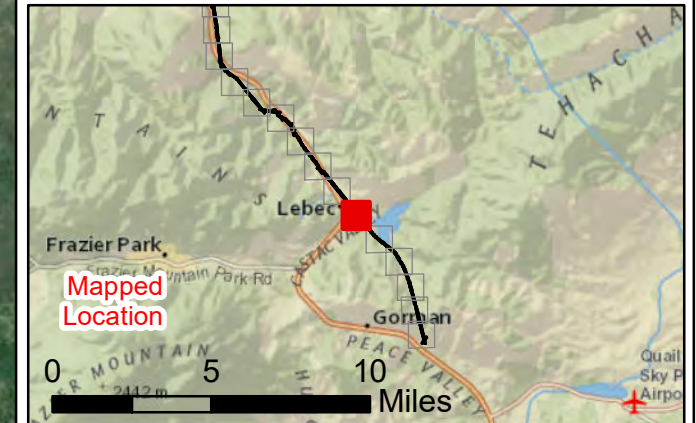
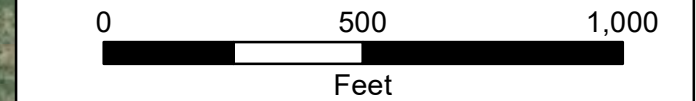


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**LEGEND**




- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**Sensitive Wildlife Locations**

- ✱ Northern Harrier (*Circus cyaneus*)

**Sensitive Natural Communities**

-  Ashy ryegrass – creeping ryegrass turfs (*Leymus cinereus* – *Leymus triticoides* Herbaceous Alliance), *Leymus triticoides* – *Bromus* spp. – *Avena* spp. Association
-  Baltic and Mexican rush marshes (*Juncus arcticus* (var. *balticus*, *mexicanus*) Herbaceous Alliance), *Juncus arcticus* var. *balticus* Association
-  Fremont cottonwood forest and woodland (*Populus fremontii* – *Fraxinus velutina* – *Salix gooddingii* Woodland) Alliance, *Populus fremontii* – *Salix lasiolepis* Association



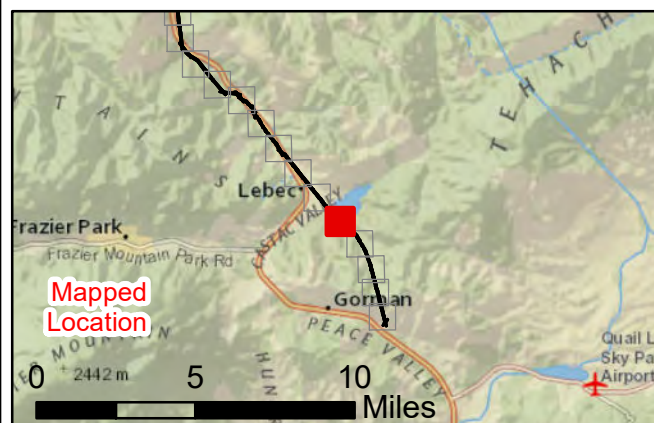
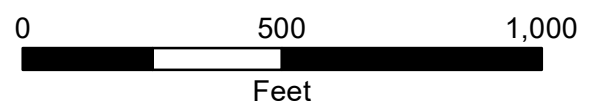
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- Sensitive Wildlife Locations**
- Vaux's Swift (*Chaetura vauxi*)
  - Yellow Warbler (*Setophaga petechia*)
- Sensitive Natural Communities**
- Baltic and Mexican rush marshes (*Juncus arcticus* (var. *balticus*, *mexicanus*) Herbaceous Alliance), *Juncus arcticus* var. *balticus* Association
  - Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* - *Quercus lobata* Association
  - Fremont cottonwood forest and woodland (*Populus fremontii* - *Fraxinus velutina* - *Salix gooddingii* Woodland) Alliance, *Populus fremontii* - *Salix lasiolepis* Association
  - Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance), *Ericameria nauseosa* Association
  - Shining willow groves (*Salix lucida* Woodland Alliance), *Salix lucida* ssp. *lasiandra* Association
  - Valley oak woodland and forest (*Quercus lobata* Woodland) Alliance, *Quercus lobata* / grass Association



- LEGEND**
- STRUCTURE LOCATION
  - 100 FOOT RADIUS TOWER BUFFER
  - SUBSTATION LOCATION
  - ACCESS ROADS
  - SURVEY AREA



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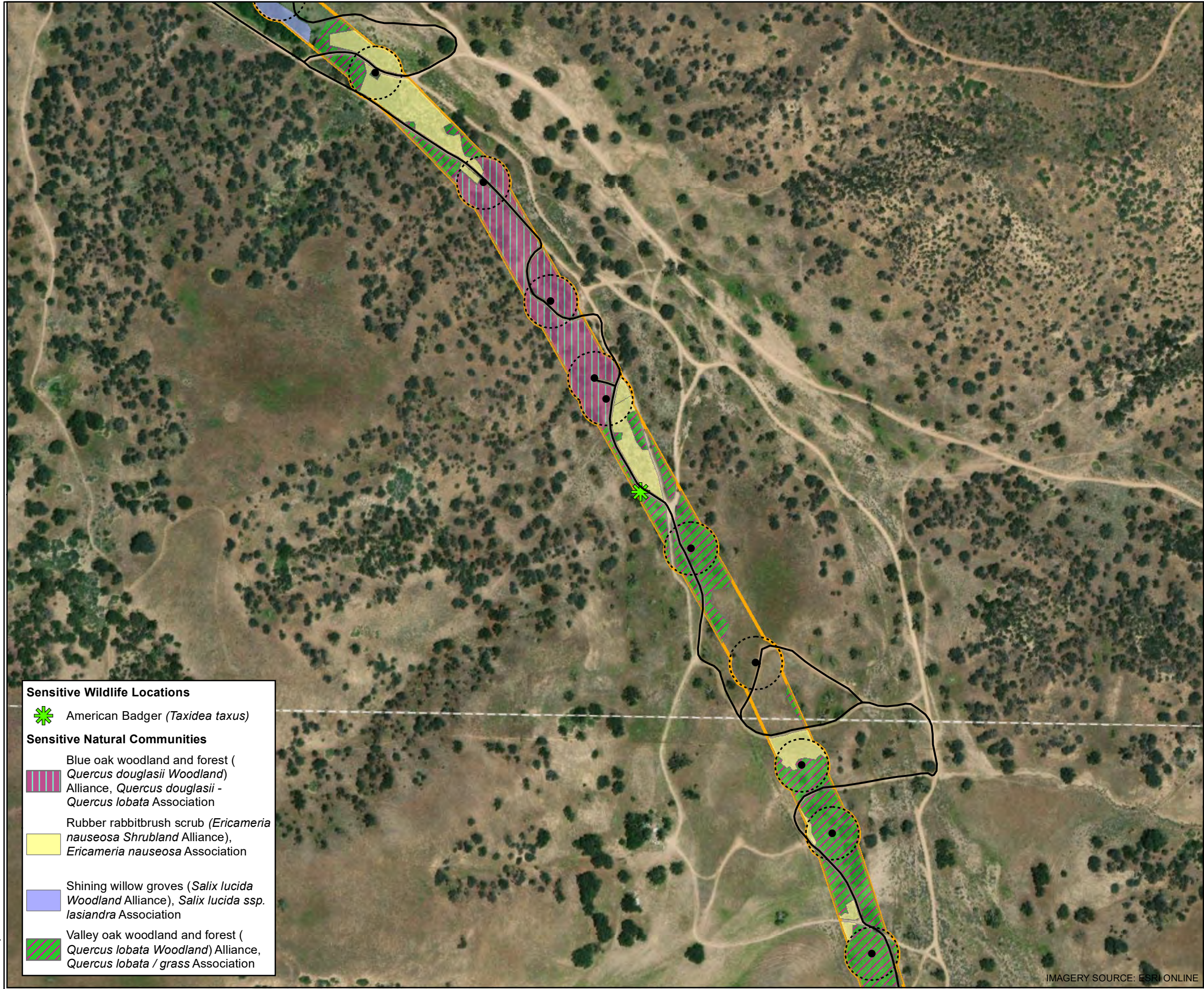
**SENSITIVE BIOLOGICAL RESOURCES**

**ARCADIS**

**FIGURESET**  
31 of 52

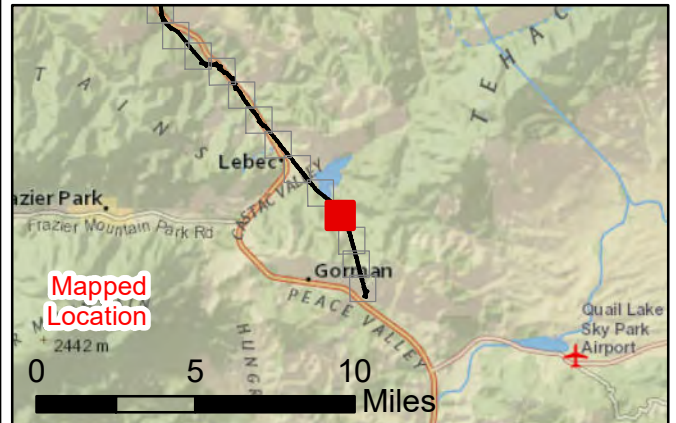
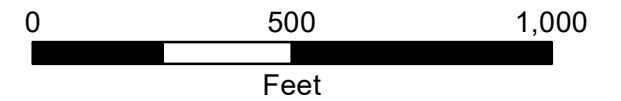


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Coordinate System: NAD 1983 UTM Zone 11N



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**Sensitive Wildlife Locations**

- ✱ American Badger (*Taxidea taxus*)

**Sensitive Natural Communities**

- Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* - *Quercus lobata* Association
- Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance), *Ericameria nauseosa* Association
- Shining willow groves (*Salix lucida* Woodland Alliance), *Salix lucida* ssp. *lasiandra* Association
- Valley oak woodland and forest (*Quercus lobata* Woodland) Alliance, *Quercus lobata* / grass Association

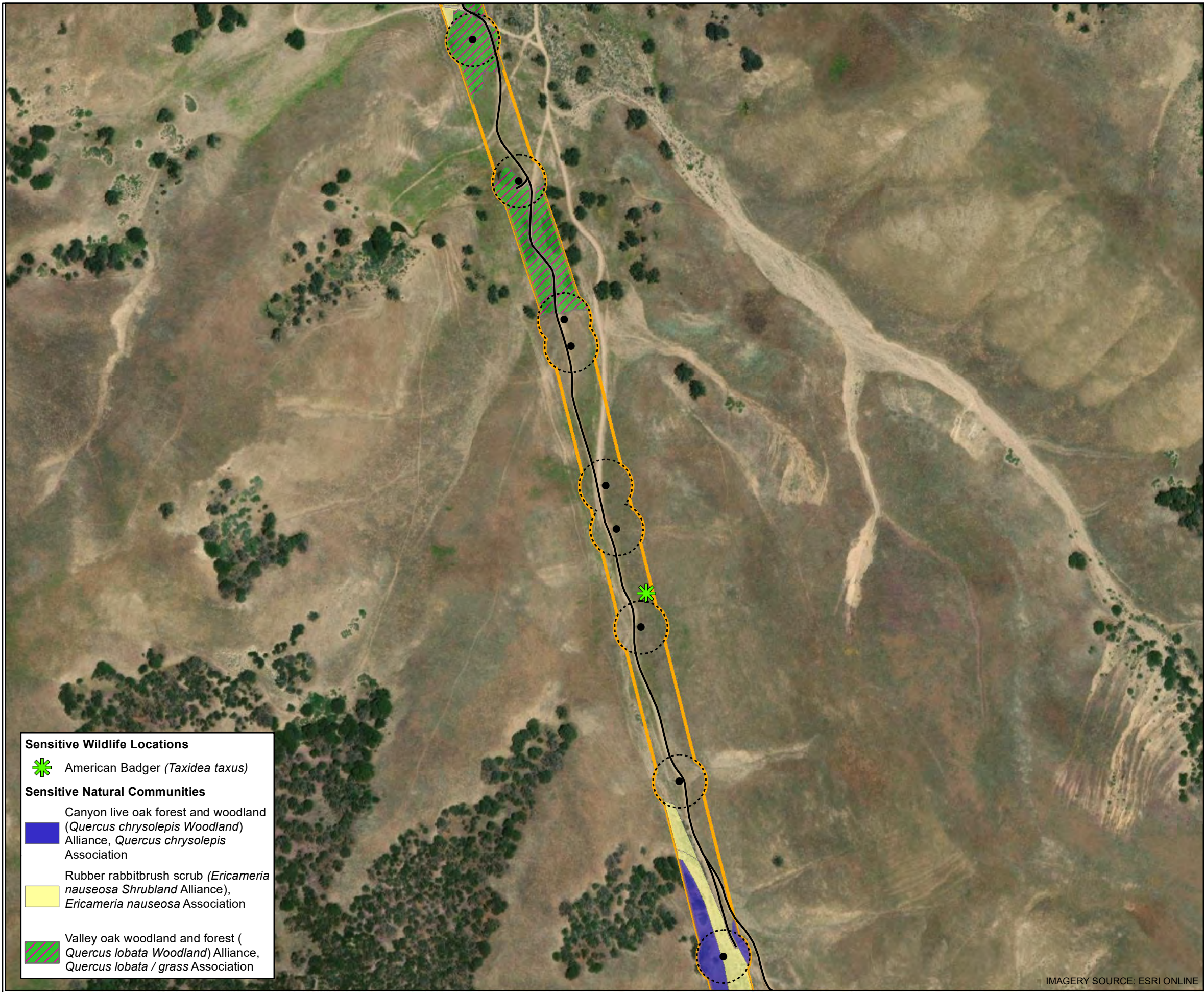
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66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**

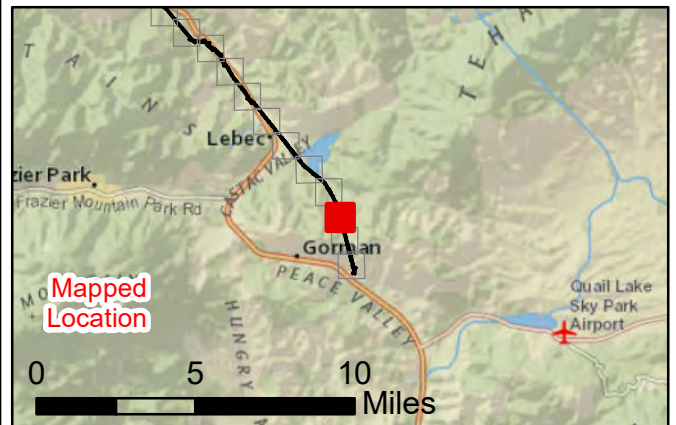
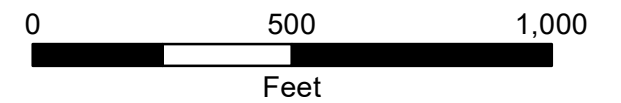


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Coordinate System: NAD 1983 UTM Zone 11N



LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



Sensitive Wildlife Locations

- ★ American Badger (*Taxidea taxus*)

Sensitive Natural Communities

- Canyon live oak forest and woodland (*Quercus chrysolepis* Woodland) Alliance, *Quercus chrysolepis* Association
- Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance), *Ericameria nauseosa* Association
- Valley oak woodland and forest (*Quercus lobata* Woodland) Alliance, *Quercus lobata* / grass Association

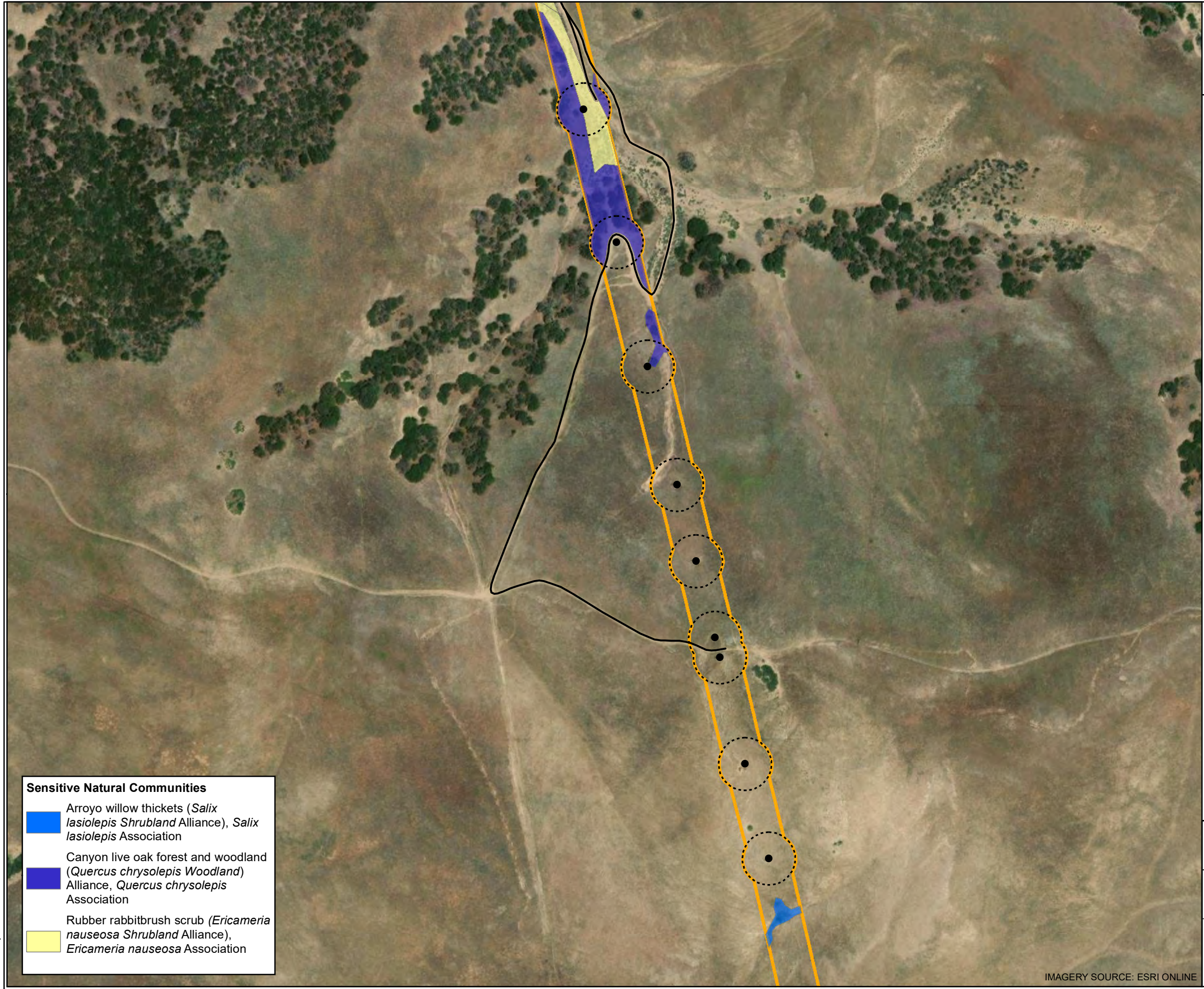
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GORMAN-KERN RIVER  
66 kV PROJECT

SENSITIVE BIOLOGICAL RESOURCES



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Coordinate System: NAD 1983 UTM Zone 11N



**Sensitive Natural Communities**

- Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance), *Salix lasiolepis* Association
- Canyon live oak forest and woodland (*Quercus chrysolepis* Woodland) Alliance, *Quercus chrysolepis* Association
- Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance), *Ericameria nauseosa* Association



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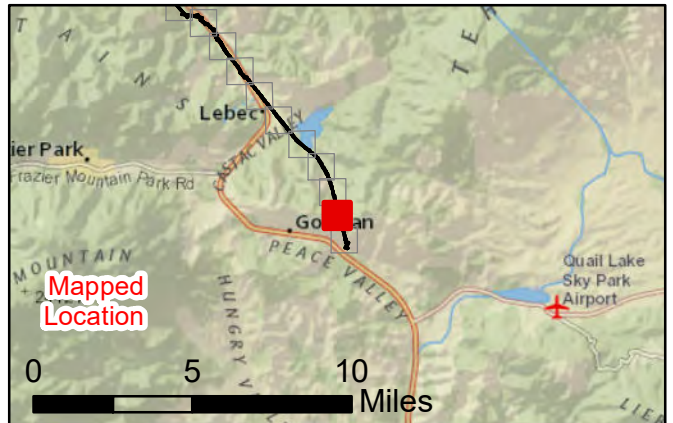


**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

0 500 1,000


Feet



0 5 10 Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**

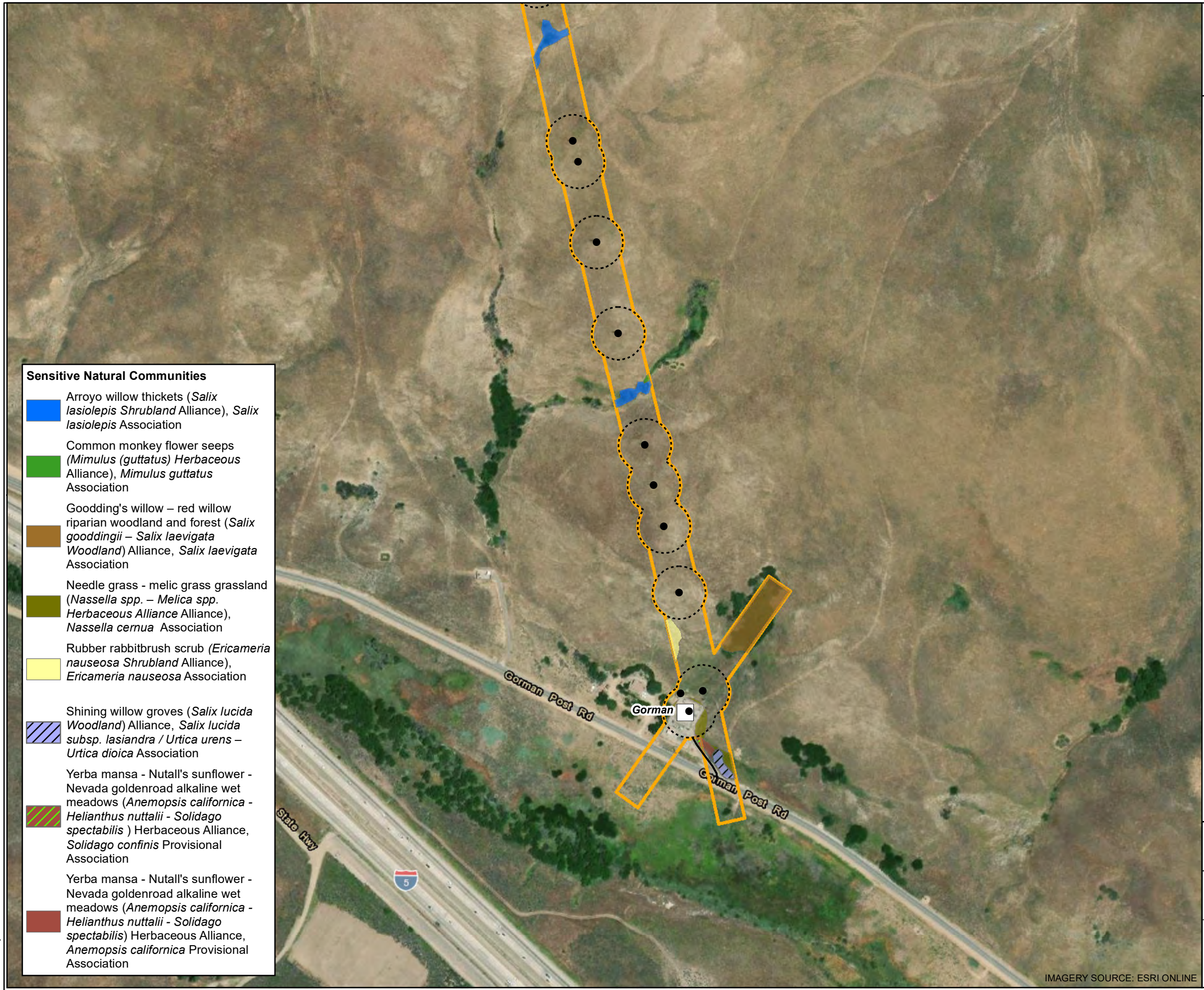


FIGURESET

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**Sensitive Natural Communities**

Arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance), *Salix lasiolepis* Association

Common monkey flower seeps (*Mimulus (guttatus)* Herbaceous Alliance), *Mimulus guttatus* Association

Goodding's willow – red willow riparian woodland and forest (*Salix gooddingii* – *Salix laevigata* Woodland) Alliance, *Salix laevigata* Association

Needle grass - melic grass grassland (*Nassella* spp. – *Melica* spp. Herbaceous Alliance Alliance), *Nassella cernua* Association

Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance), *Ericameria nauseosa* Association

Shining willow groves (*Salix lucida* Woodland) Alliance, *Salix lucida* subsp. *lasiandra* / *Urtica urens* – *Urtica dioica* Association

Yerba mansa - Nutall's sunflower - Nevada goldenrod alkaline wet meadows (*Anemopsis californica* - *Helianthus nuttallii* - *Solidago spectabilis*) Herbaceous Alliance, *Solidago confinis* Provisional Association

Yerba mansa - Nutall's sunflower - Nevada goldenrod alkaline wet meadows (*Anemopsis californica* - *Helianthus nuttallii* - *Solidago spectabilis*) Herbaceous Alliance, *Anemopsis californica* Provisional Association



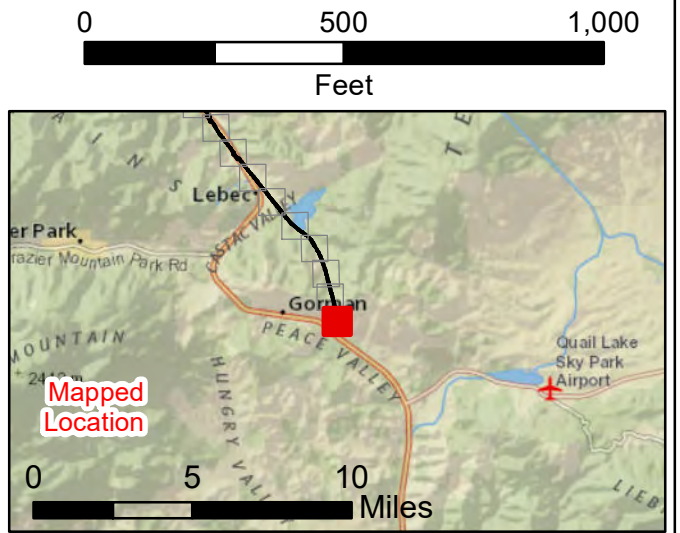
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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



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**SENSITIVE BIOLOGICAL RESOURCES**



FIGURESET

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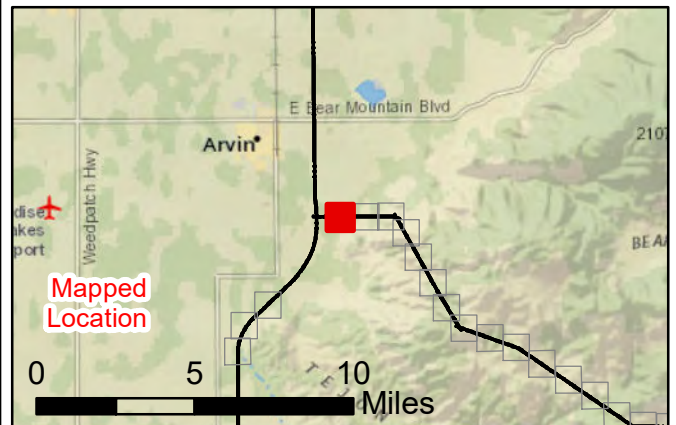
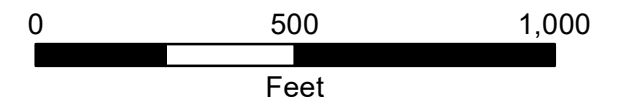


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LEGEND

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



Sensitive Plant Locations

- Kern mallow (*Eremalche parryi* ssp. *kernensis*)

Sensitive Natural Communities

- ▭ California buckwheat scrub (*Eriogonum fasciculatum* Shrubland Alliance), *Eriogonum fasciculatum* Association

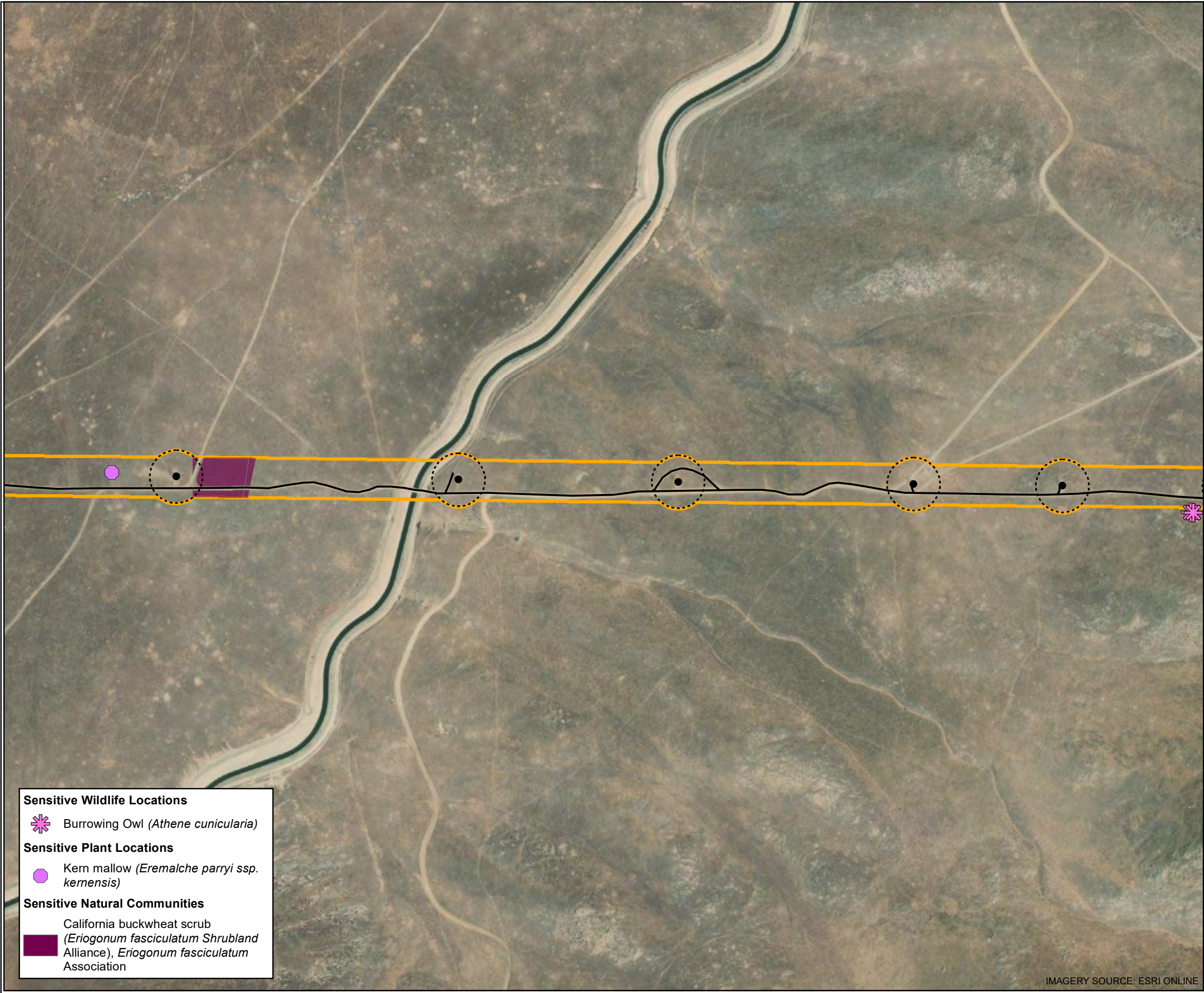
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GORMAN-KERN RIVER  
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SENSITIVE BIOLOGICAL RESOURCES

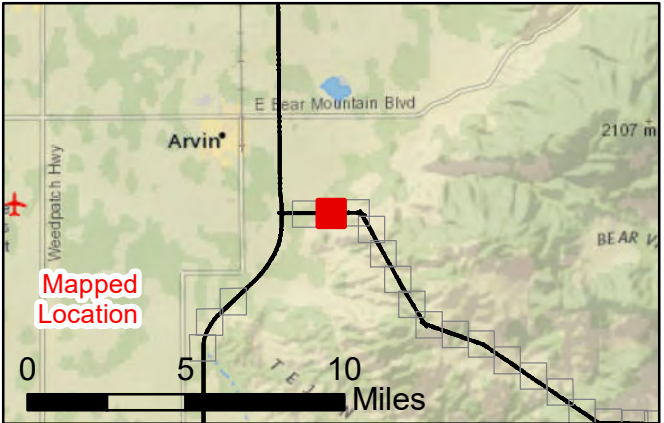
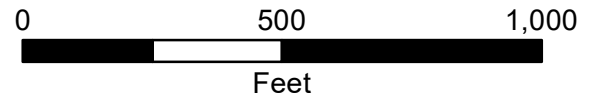


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Coordinate System: NAD 1983 UTM Zone 11N



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**Sensitive Wildlife Locations**

- ✱ Burrowing Owl (*Athene cunicularia*)

**Sensitive Plant Locations**

- Kern mallow (*Eremalche parryi* ssp. *kernensis*)

**Sensitive Natural Communities**

- ▭ California buckwheat scrub (*Eriogonum fasciculatum* Shrubland Alliance), *Eriogonum fasciculatum* Association

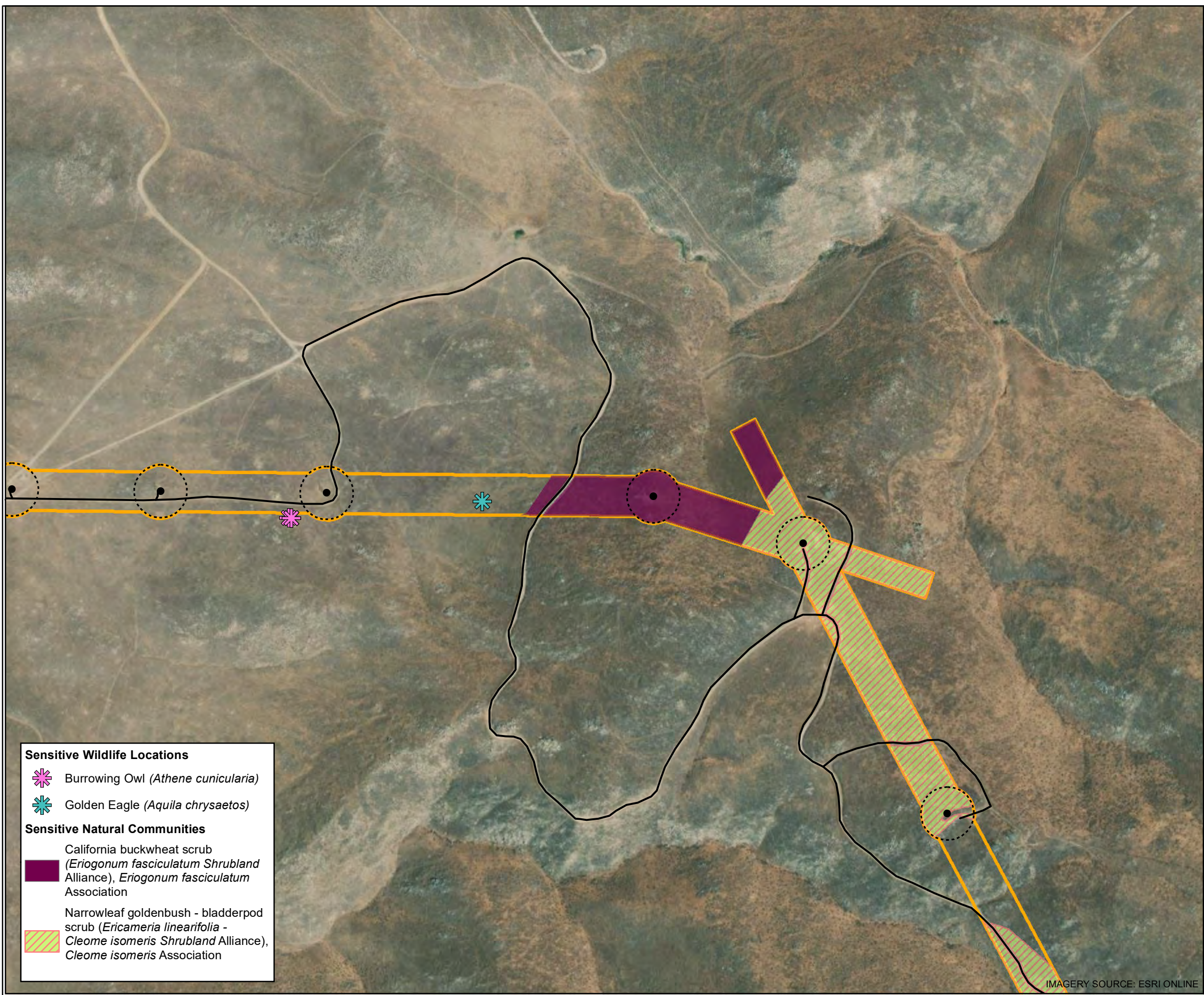
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**GORMAN-KERN RIVER  
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**SENSITIVE BIOLOGICAL RESOURCES**





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**Sensitive Wildlife Locations**

-  Burrowing Owl (*Athene cunicularia*)
-  Golden Eagle (*Aquila chrysaetos*)

**Sensitive Natural Communities**


-  California buckwheat scrub (*Eriogonum fasciculatum* Shrubland Alliance), *Eriogonum fasciculatum* Association
-  Narrowleaf goldenbush - bladderpod scrub (*Ericameria linearifolia* - *Cleome isomeris* Shrubland Alliance), *Cleome isomeris* Association








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**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA

05001,000


Feet



0510Miles

**GORMAN-KERN RIVER**  
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**SENSITIVE BIOLOGICAL RESOURCES**

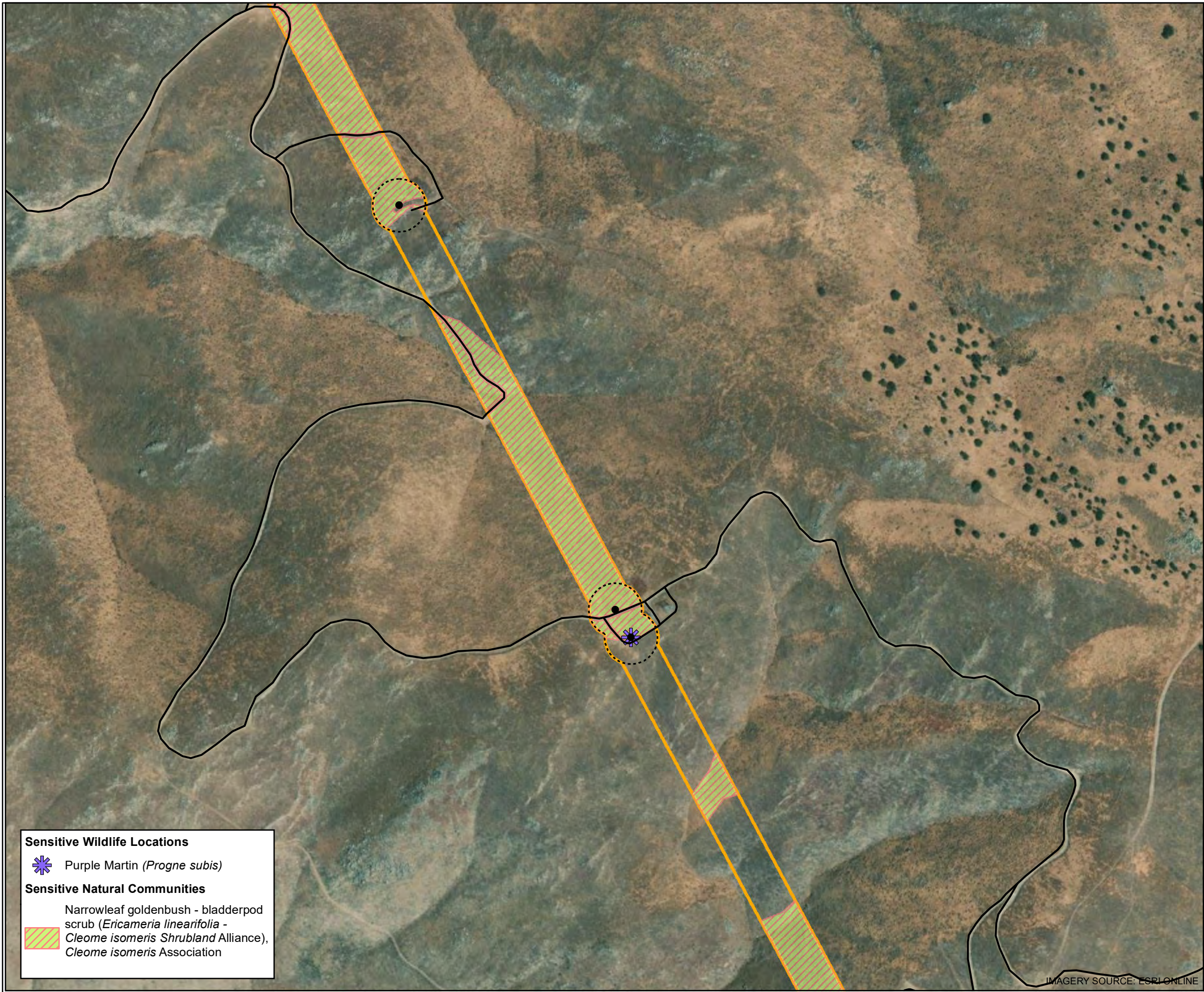
**ARCADIS**

**FIGURESET**  
38 of 52

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Coordinate System: NAD 1983 UTM Zone 11N



LEGEND

●

STRUCTURE LOCATION

○

100 FOOT RADIUS TOWER BUFFER

□

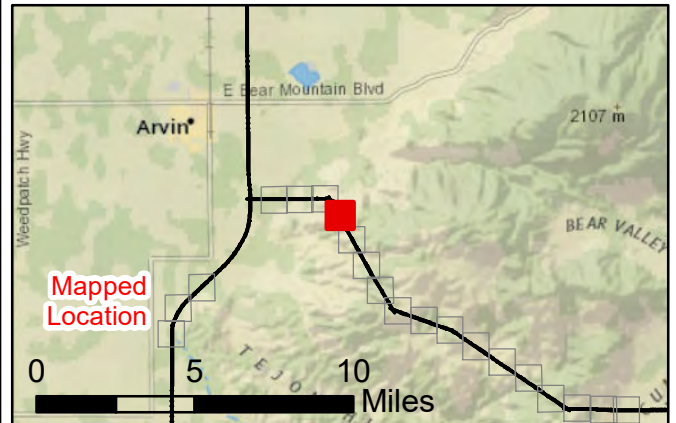
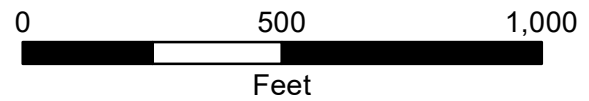
SUBSTATION LOCATION

—


ACCESS ROADS

▭

SURVEY AREA




Sensitive Wildlife Locations



 Purple Martin (*Progne subis*)

Sensitive Natural Communities



 Narrowleaf goldenbush - bladderpod scrub (*Ericameria linearifolia* - *Cleome isomeris* Shrubland Alliance), *Cleome isomeris* Association



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**Sensitive Wildlife Locations**


 Prairie Falcon (*Falco mexicanus*)

**Sensitive Natural Communities**


 Narrowleaf goldenbush - bladderpod scrub (*Ericameria linearifolia* - *Cleome isomeris* Shrubland Alliance), *Cleome isomeris* Association





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**LEGEND**


 STRUCTURE LOCATION

 100 FOOT RADIUS TOWER BUFFER


 SUBSTATION LOCATION

 ACCESS ROADS

 SURVEY AREA




05001,000  
Feet



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66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



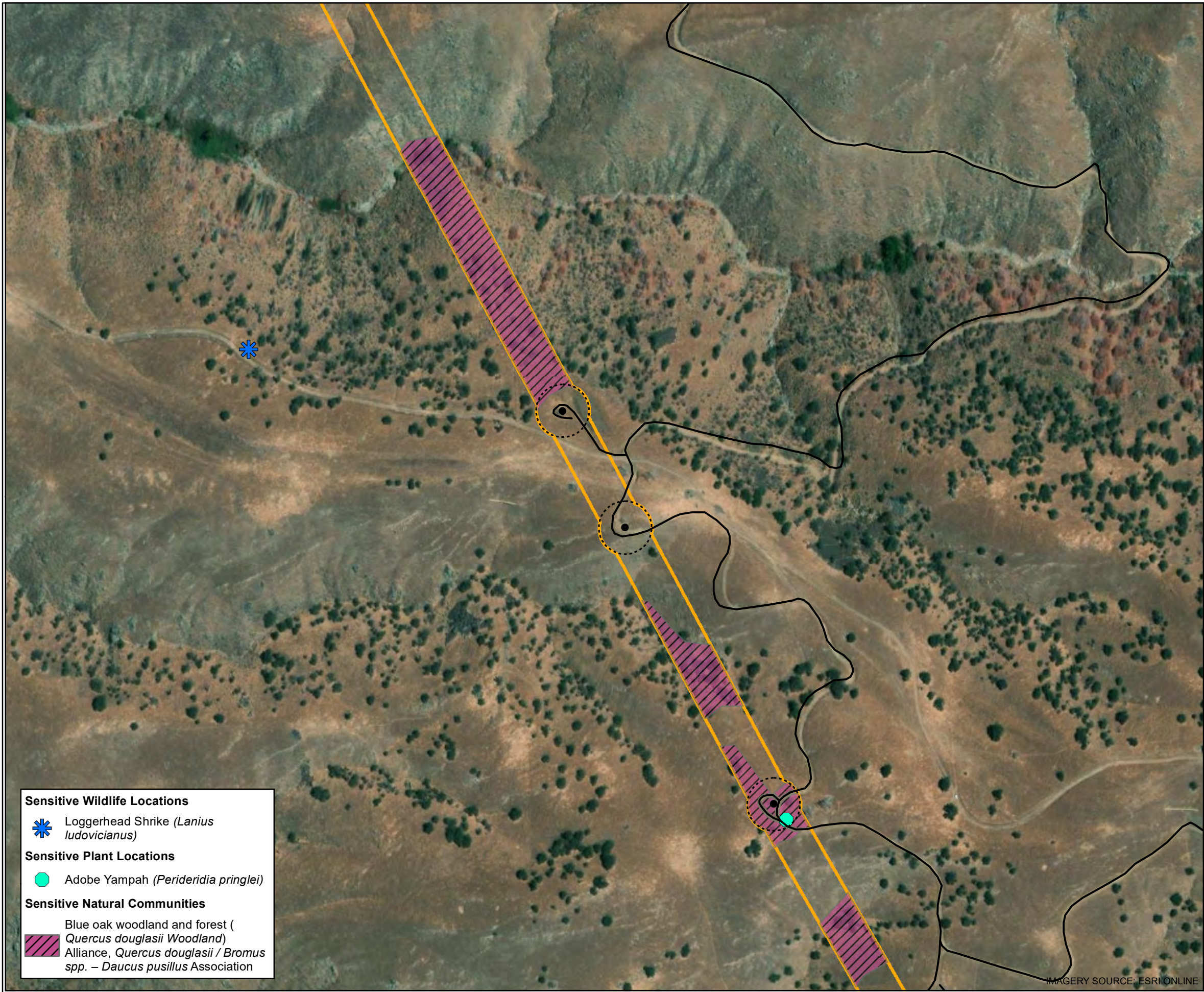
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FIGURESET  
40 of 52


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
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Coordinate System: NAD 1983 UTM Zone 11N




**Sensitive Wildlife Locations**

 Loggerhead Shrike (*Lanius ludovicianus*)

**Sensitive Plant Locations**

 Adobe Yampah (*Perideridia pringlei*)

**Sensitive Natural Communities**

 Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* / *Bromus* spp. – *Daucus pusillus* Association








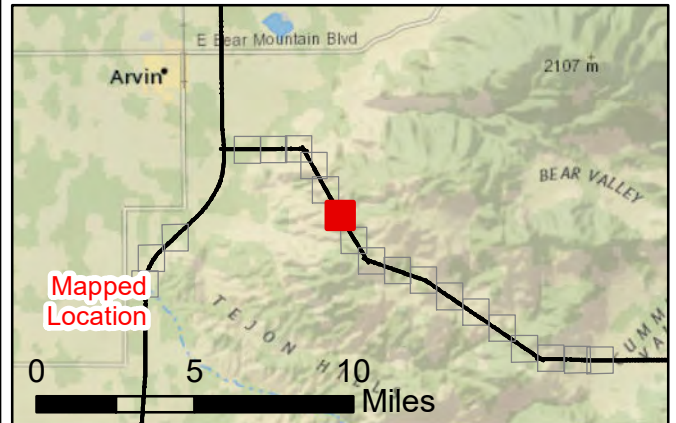
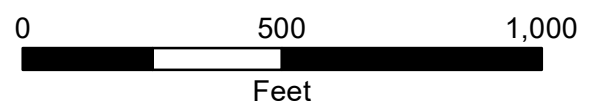
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**LEGEND**

-  STRUCTURE LOCATION
-  100 FOOT RADIUS TOWER BUFFER
-  SUBSTATION LOCATION
-  ACCESS ROADS
-  SURVEY AREA



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**SENSITIVE BIOLOGICAL RESOURCES**

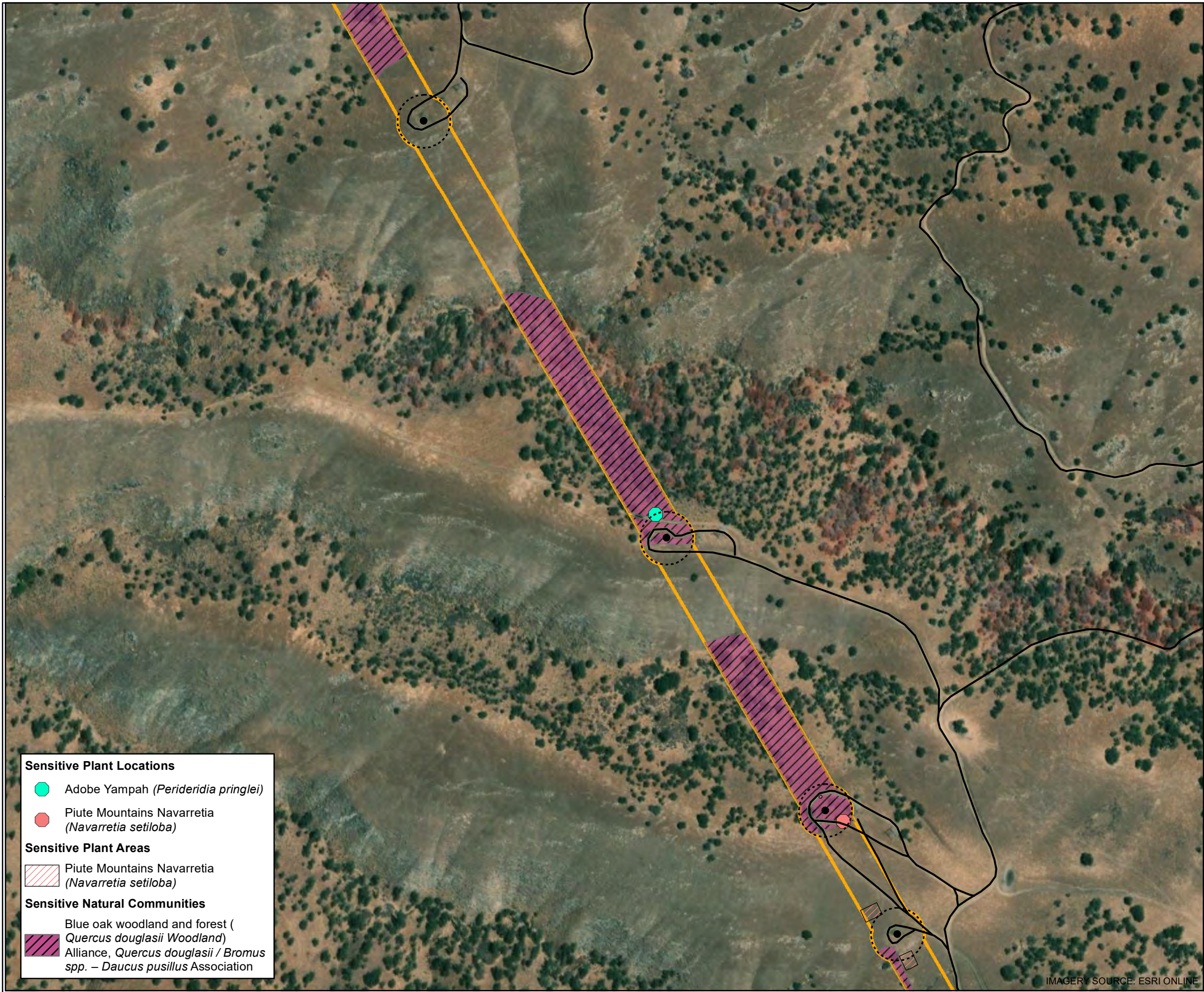


**FIGURESET**

41 of 52



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**Sensitive Plant Locations**

Adobe Yampah (*Perideridia pringlei*)

Piute Mountains Navarretia (*Navarretia setiloba*)

**Sensitive Plant Areas**

Piute Mountains Navarretia (*Navarretia setiloba*)

**Sensitive Natural Communities**

Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* / *Bromus* spp. – *Daucus pusillus* Association



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**LEGEND**

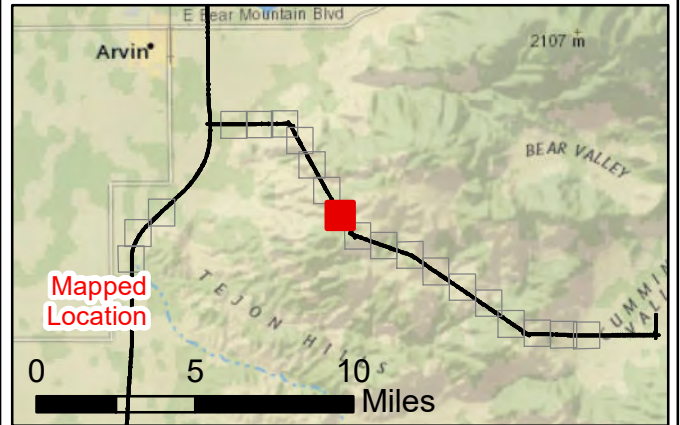
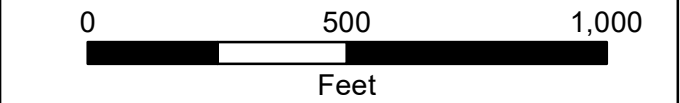
STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SUBSTATION LOCATION


ACCESS ROADS

SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**

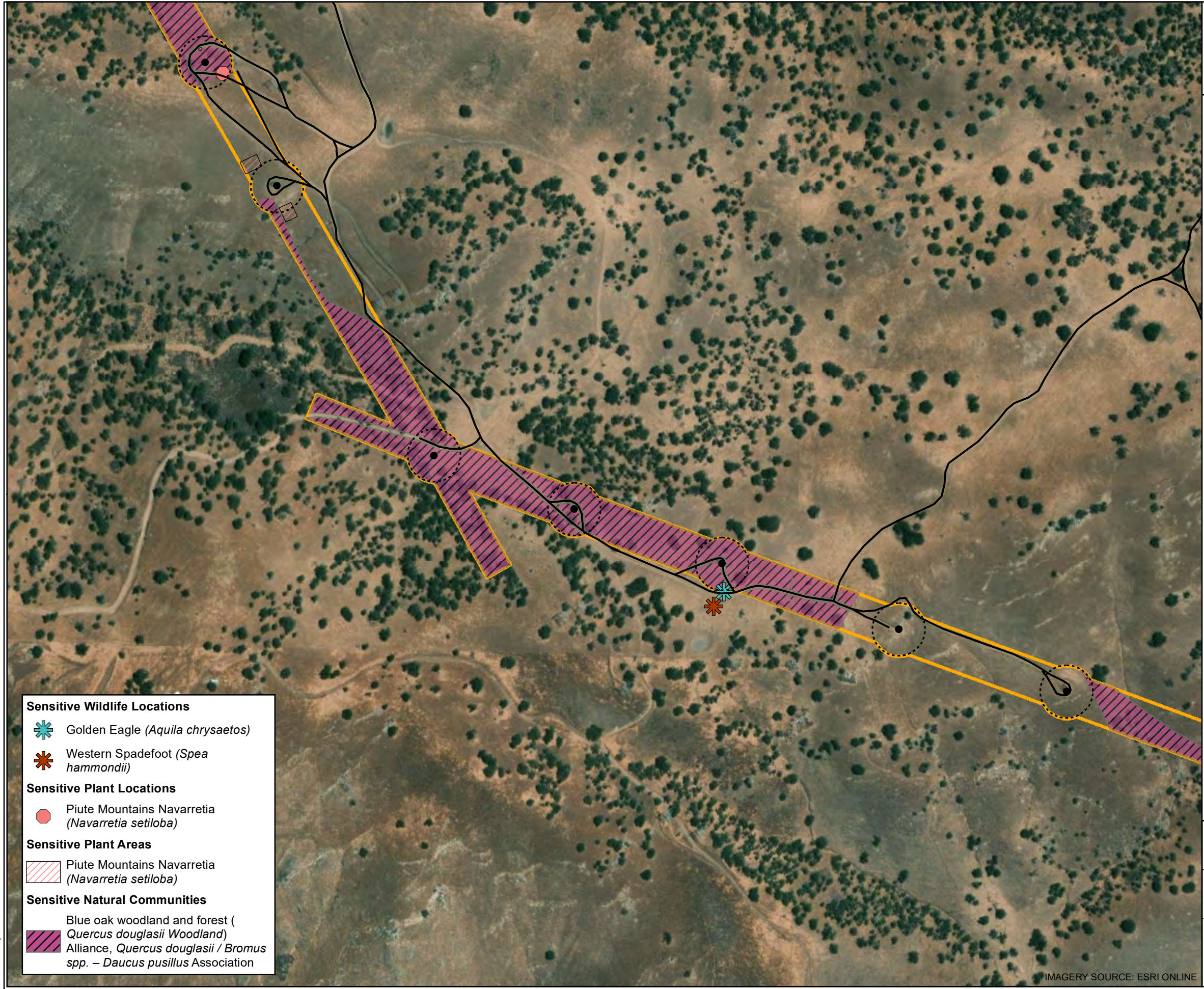


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42 of 52

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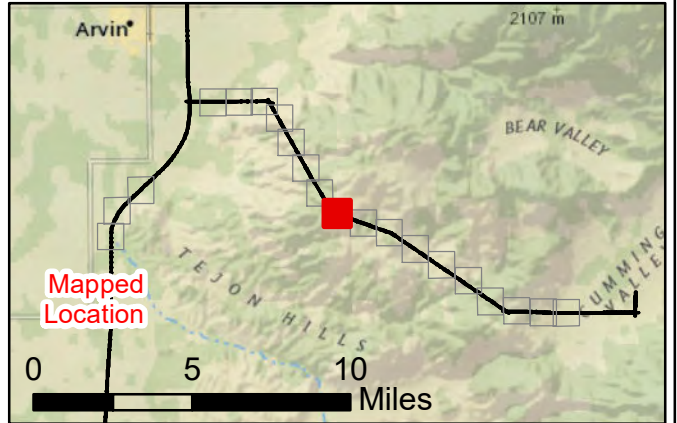
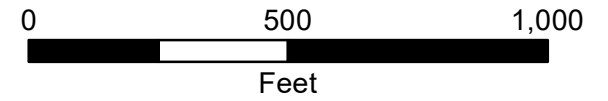


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Coordinate System: NAD 1983 UTM Zone 11N



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

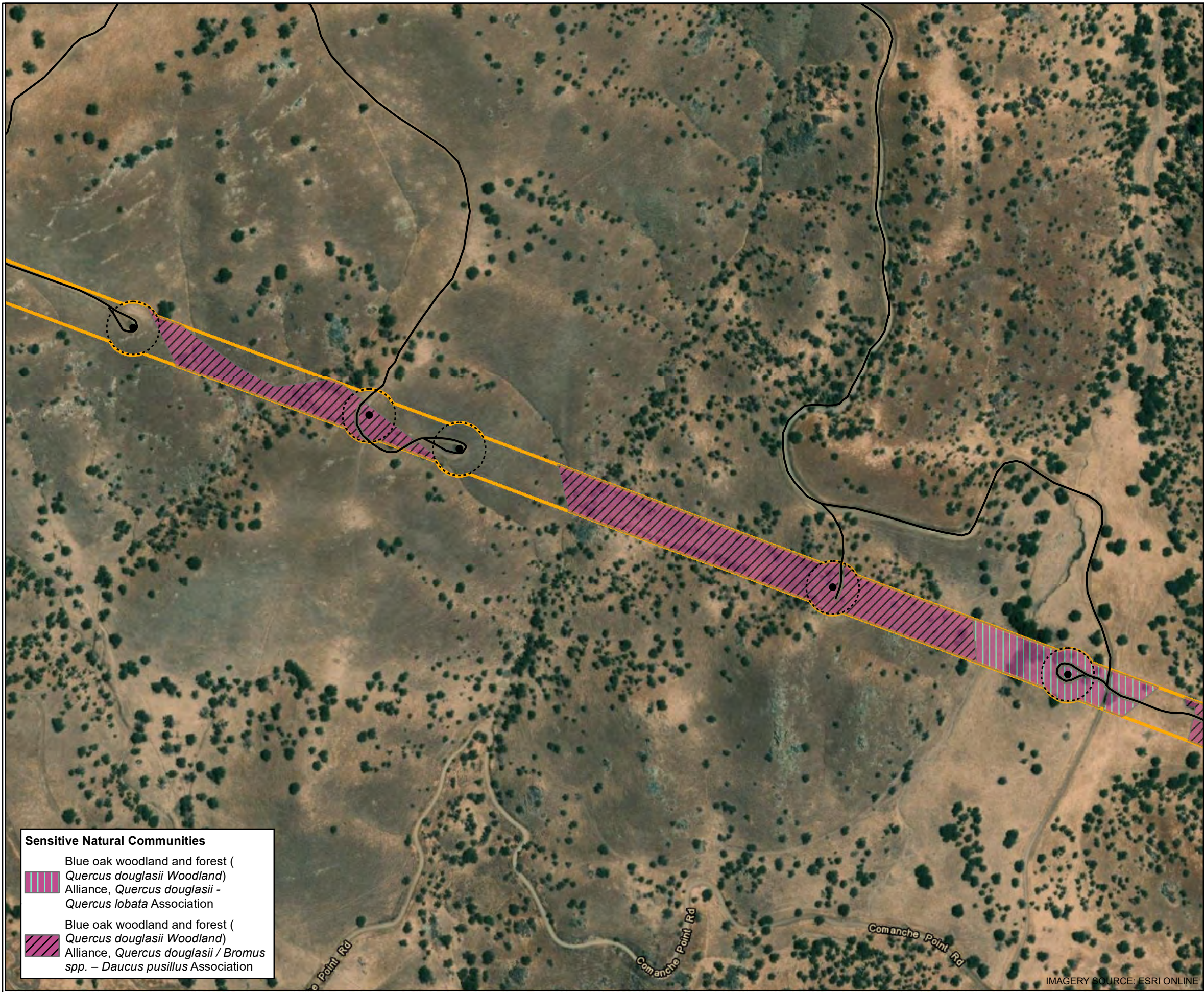
**SENSITIVE BIOLOGICAL RESOURCES**

 **FIGURESET**  
43 of 52

IMAGERY SOURCE: ESRI ONLINE



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**Sensitive Natural Communities**

Blue oak woodland and forest (  
*Quercus douglasii* Woodland)  
Alliance, *Quercus douglasii* -  
*Quercus lobata* Association

Blue oak woodland and forest (  
*Quercus douglasii* Woodland)  
Alliance, *Quercus douglasii* / *Bromus*  
*spp.* - *Daucus pusillus* Association

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**LEGEND**

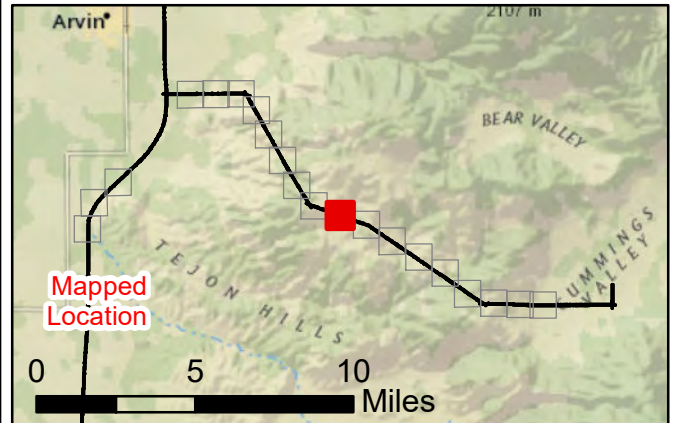
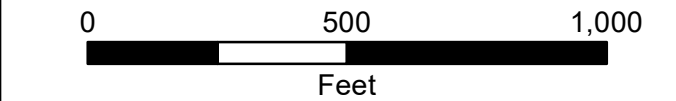
● STRUCTURE LOCATION

○ 100 FOOT RADIUS TOWER BUFFER

□ SUBSTATION LOCATION


— ACCESS ROADS

▭ SURVEY AREA



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66 kV PROJECT**

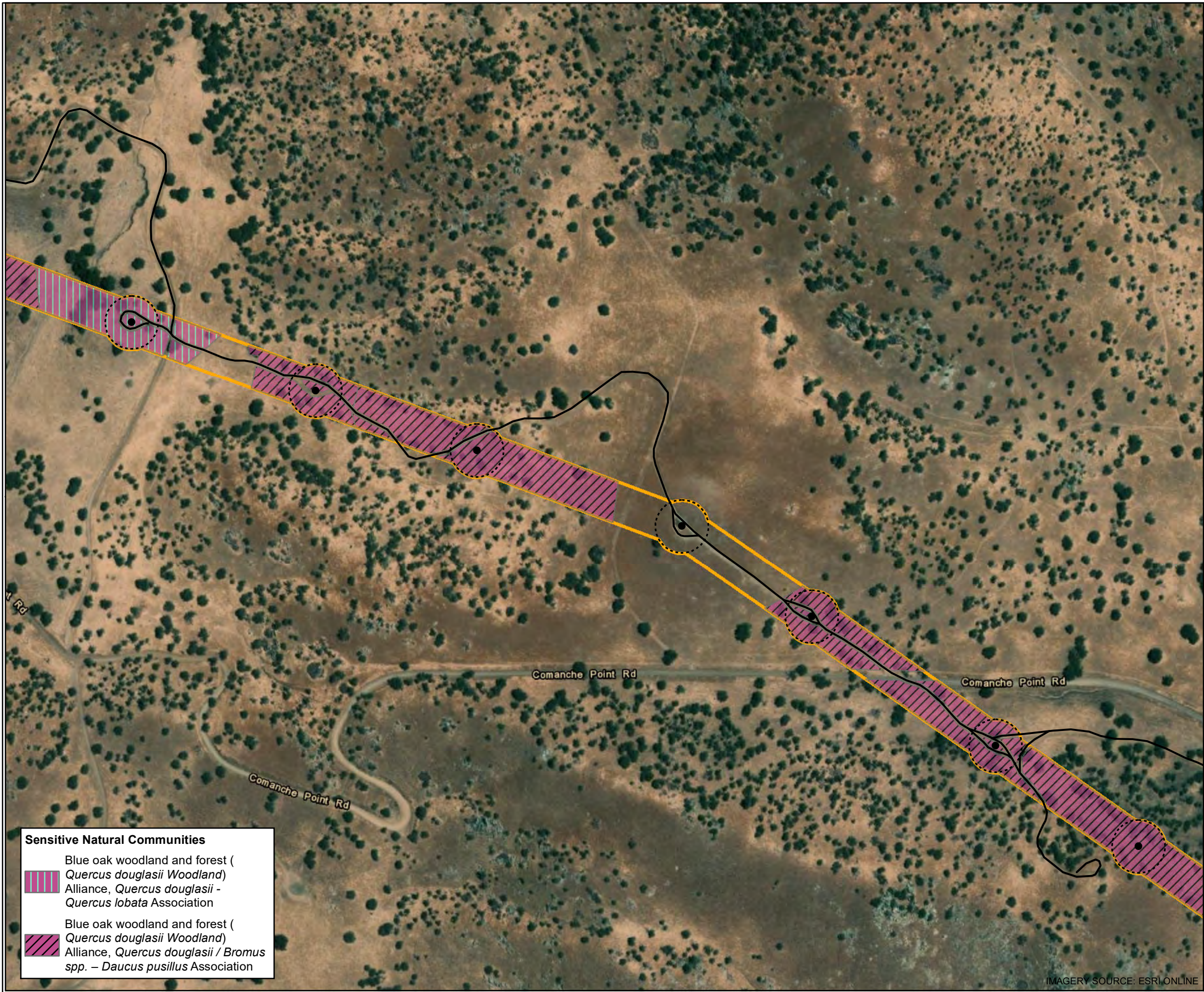
**SENSITIVE BIOLOGICAL RESOURCES**

 **ARCADIS**

**FIGURESET**  
44 of 52



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Coordinate System: NAD 1983 UTM Zone 11N



**Sensitive Natural Communities**

Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* - *Quercus lobata* Association

Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* / *Bromus* spp. - *Daucus pusillus* Association



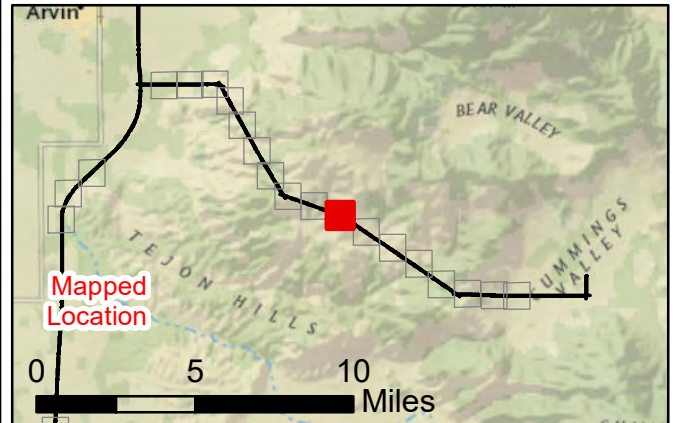
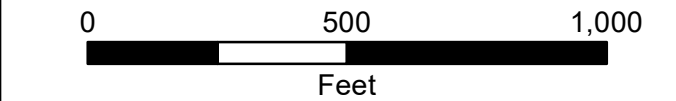
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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**

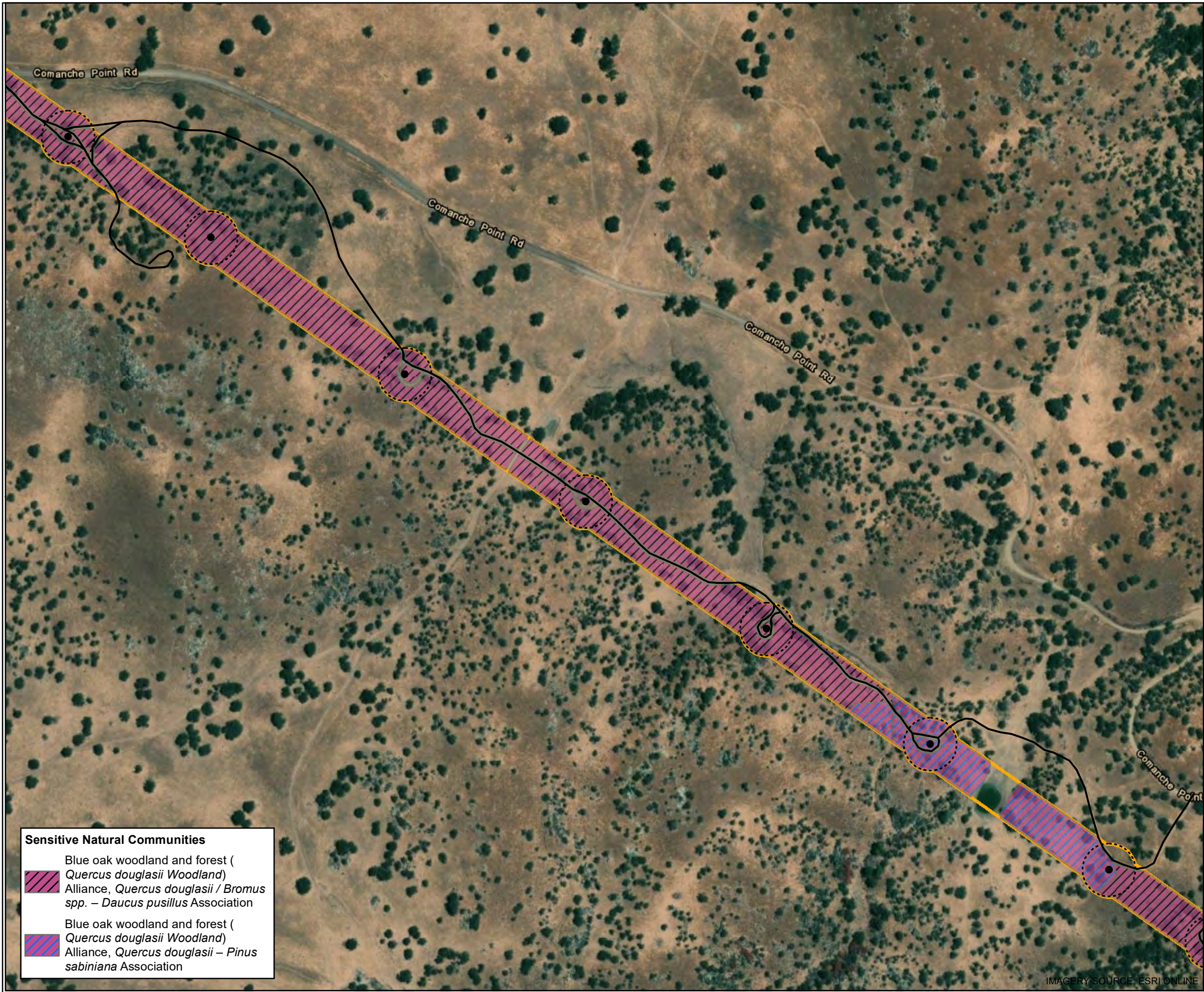


**FIGURESET**

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Coordinate System: NAD 1983 UTM Zone 11N



**Sensitive Natural Communities**

Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* / *Bromus* spp. – *Daucus pusillus* Association

Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* – *Pinus sabiniana* Association



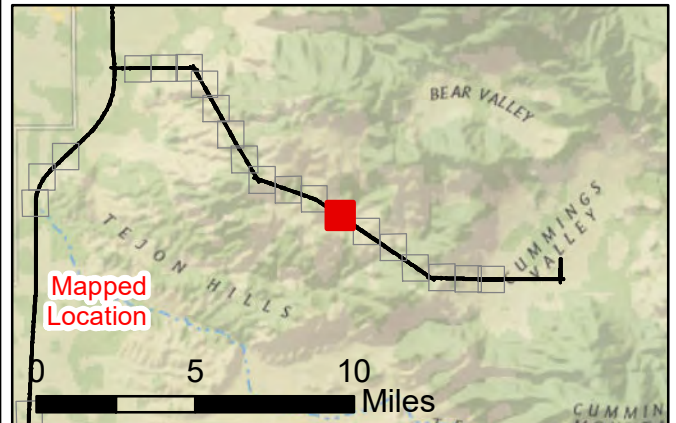
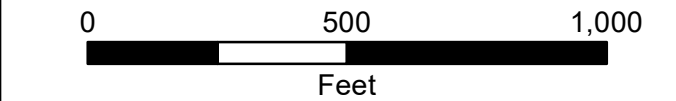
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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



**FIGURESET**  
46 of 52



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Coordinate System: NAD 1983 UTM Zone 11N



**Sensitive Plant Locations**

- Calico Monkeyflower (*Mimulus pictus*)

**Sensitive Natural Communities**

- Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* / *Bromus* spp. – *Daucus pusillus* Association
- Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* – *Pinus sabiniana* Association



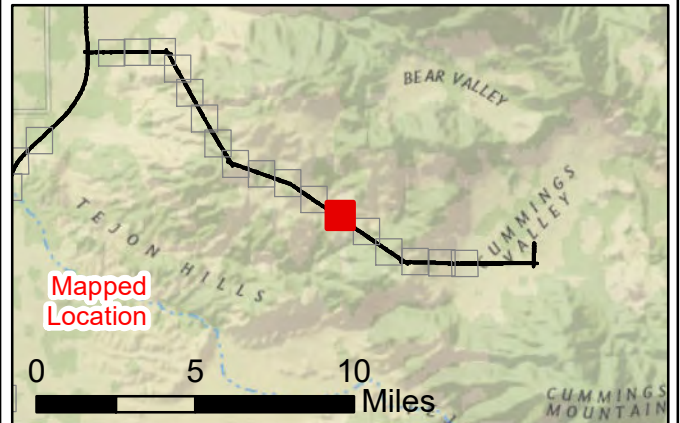
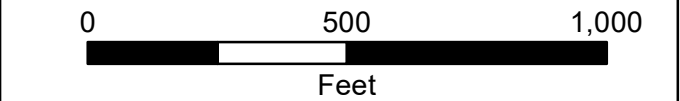
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**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



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66 kV PROJECT**

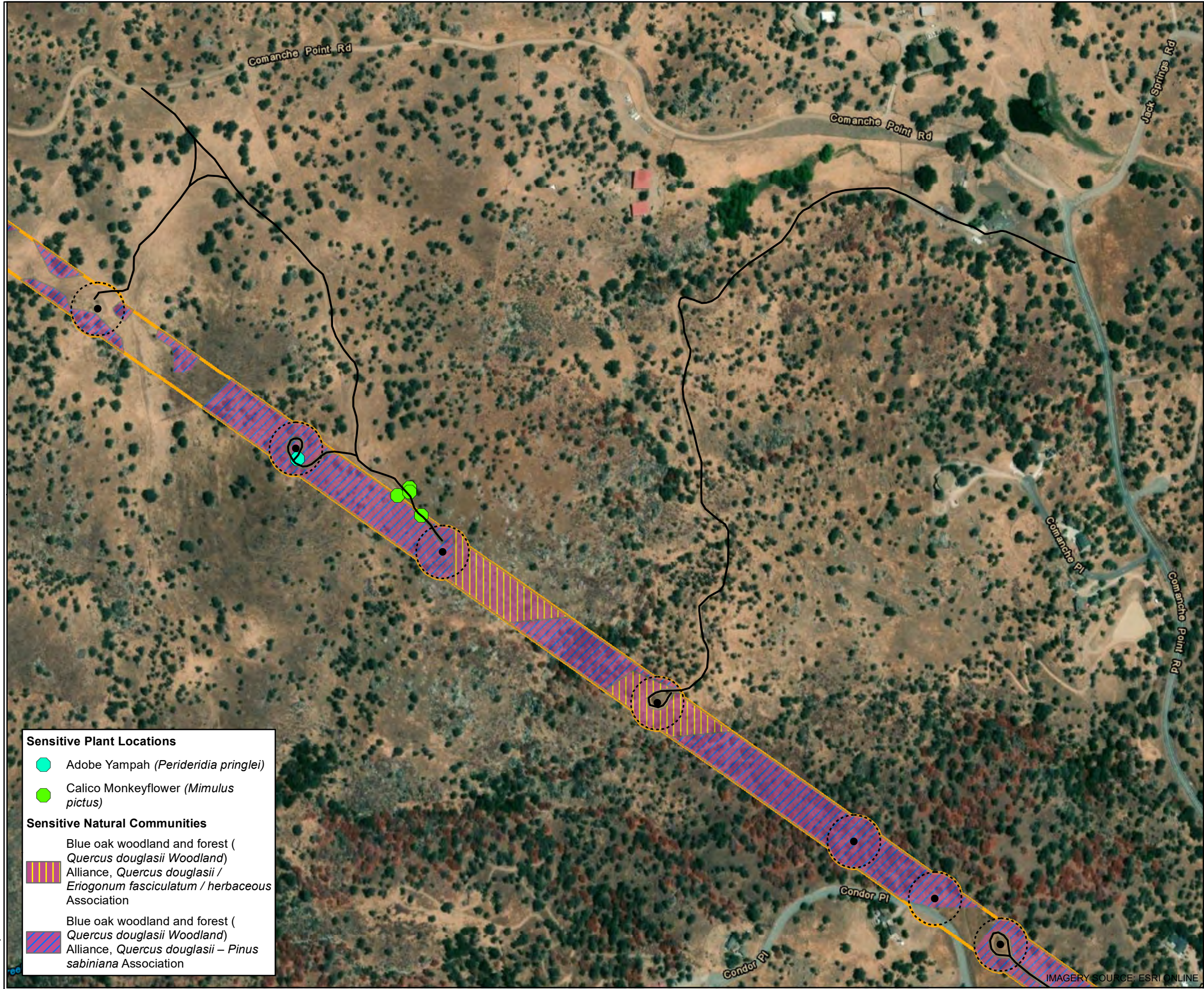
**SENSITIVE BIOLOGICAL RESOURCES**



**FIGURESET**  
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Coordinate System: NAD 1983 UTM Zone 11N



**Sensitive Plant Locations**


Adobe Yampah (*Perideridia pringlei*)

Calico Monkeyflower (*Mimulus pictus*)

**Sensitive Natural Communities**

Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* / *Eriogonum fasciculatum* / herbaceous Association


Blue oak woodland and forest (*Quercus douglasii* Woodland) Alliance, *Quercus douglasii* – *Pinus sabiniana* Association



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**LEGEND**

STRUCTURE LOCATION

100 FOOT RADIUS TOWER BUFFER

SUBSTATION LOCATION

ACCESS ROADS

SURVEY AREA

05001,000


Feet

0510

Miles

**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



**ARCADIS**

FIGURESET

48 of 52



\\corparcglis\Data\ArcGisData\GISPROJECTS\ENV T\ENVISCEISOE\_TLLR\ArcGIS\_Desktop\KERNITLLR Kern Figure 4 Sensitive Biological Resources Mapbook.mxd 9/29/2021 mg01044  
Coordinate System: NAD 1983 UTM Zone 11N



**Sensitive Natural Communities**

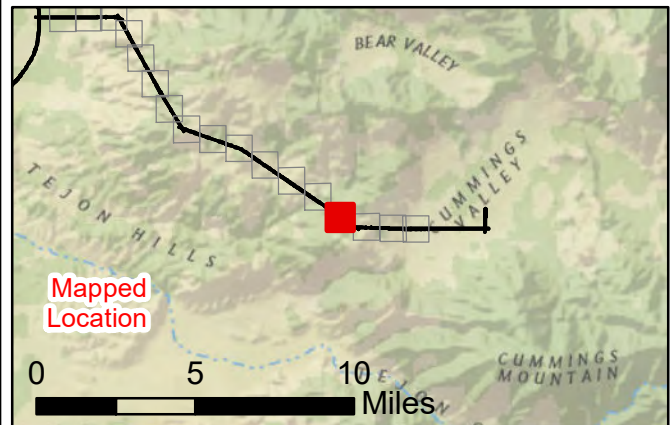
- Blue oak woodland and forest (*Quercus douglasii* Woodland)
- Alliance, *Quercus douglasii* – *Pinus sabiniana* Association



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

0 500 1,000  
Feet



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



FIGURESET

49 of 52

IMAGERY SOURCE: ESRI/ONLINE

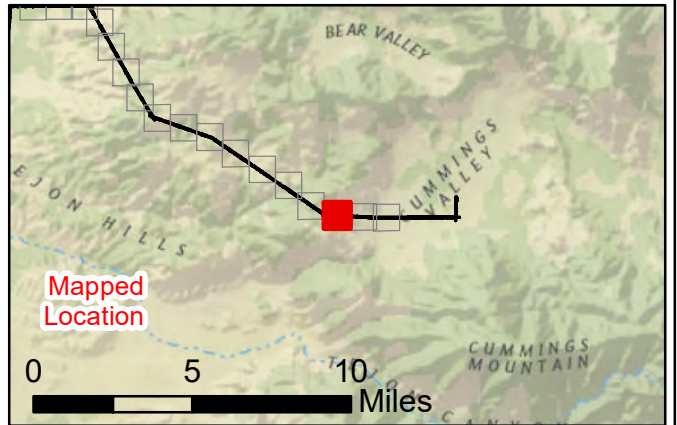
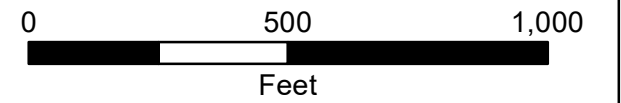


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Coordinate System: NAD 1983 UTM Zone 11N



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**

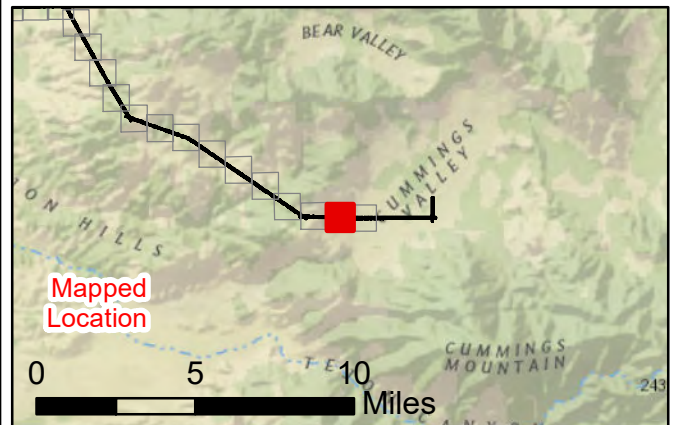
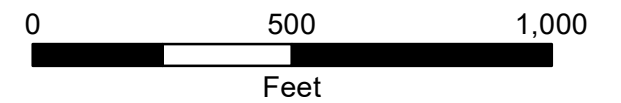


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Coordinate System: NAD 1983 UTM Zone 11N





**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA



**Sensitive Natural Communities**

-  Valley oak woodland and forest (*Quercus lobata* Woodland) Alliance, *Quercus lobata* / grass Association
-  Wedge leaf ceanothus chaparral, Buck brush chaparral (*Ceanothus cuneatus* Shrubland Alliance), *Ceanothus cuneatus* Association

IMAGERY SOURCE: ESRI ONLINE

**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**



\\corparc\gis\Data\ArcGisData\GISPROJECTS\ENV T\ENVISCEISOE\_TLLR\ArcGIS\_Desktop\KERN\TLLR Kern Figure 4 Sensitive Biological Resources Mapbook.mxd 9/29/2021 mg01044  
Coordinate System: NAD 1983 UTM Zone 11N



**Sensitive Natural Communities**

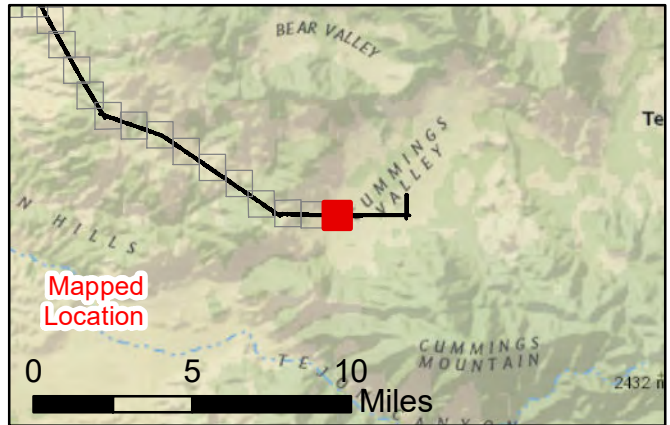
Baltic and Mexican rush marshes  
(*Juncus arcticus* (var. *balticus*,  
*mexicanus*) Herbaceous Alliance),  
*Juncus arcticus* var. *balticus*  
Association



**LEGEND**

- STRUCTURE LOCATION
- 100 FOOT RADIUS TOWER BUFFER
- SUBSTATION LOCATION
- ACCESS ROADS
- ▭ SURVEY AREA

0 500 1,000  
Feet

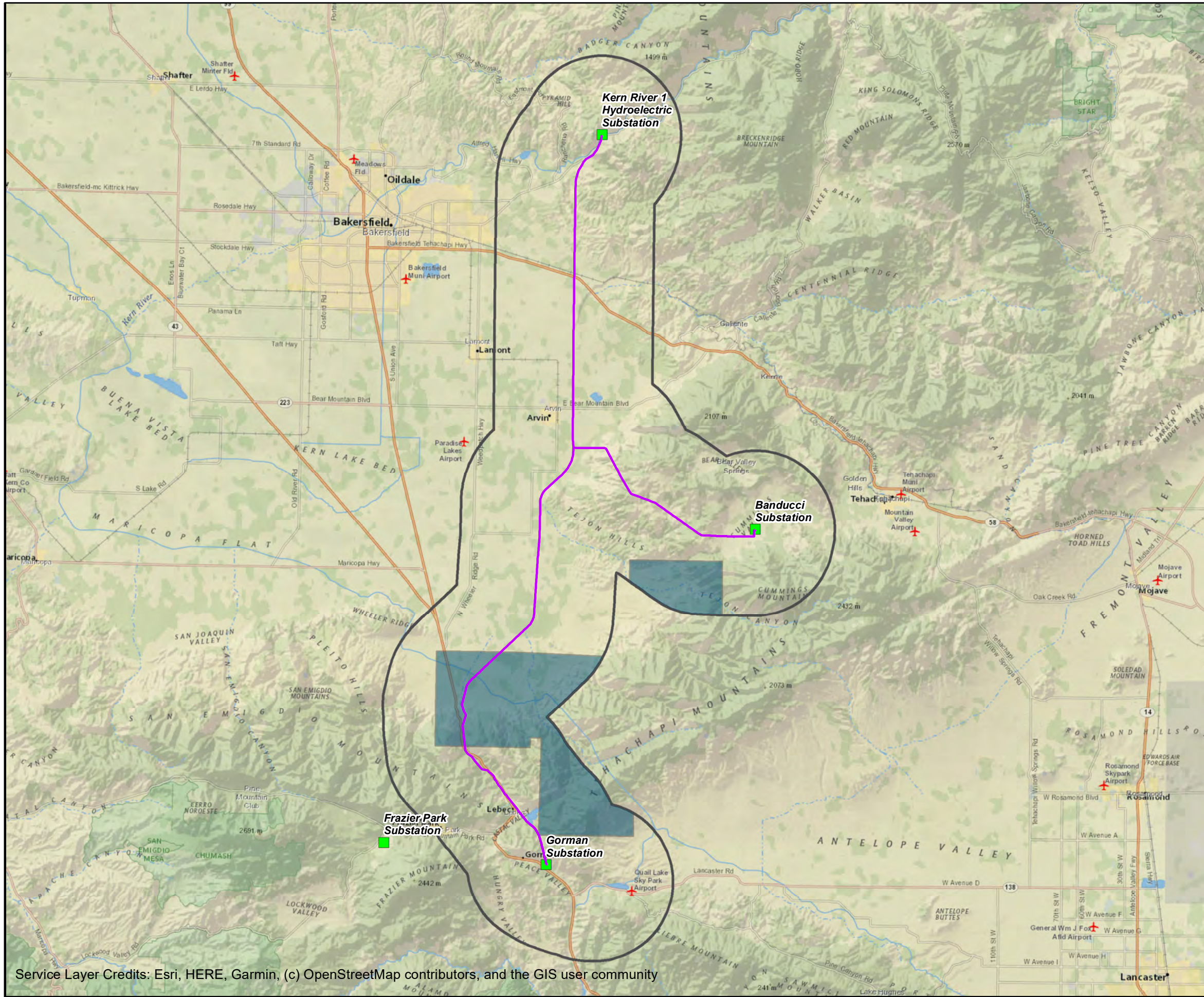



**GORMAN-KERN RIVER  
66 kV PROJECT**

**SENSITIVE BIOLOGICAL RESOURCES**




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Coordinate System: NAD 1983 UTM Zone 11N









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**Legend:**

-  Substation
-  Kern River Alignment
-  California condor Critical Habitat
-  5 mile radius

**NOTES:**


1) Critical Habitat data source:  
US Fish and Wildlife Service Environmental  
Conservation Online System (ECOS)  
<https://ecos.fws.gov/ecp/>.

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**GORMAN-KERN RIVER**  
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**CRITICAL HABITAT**

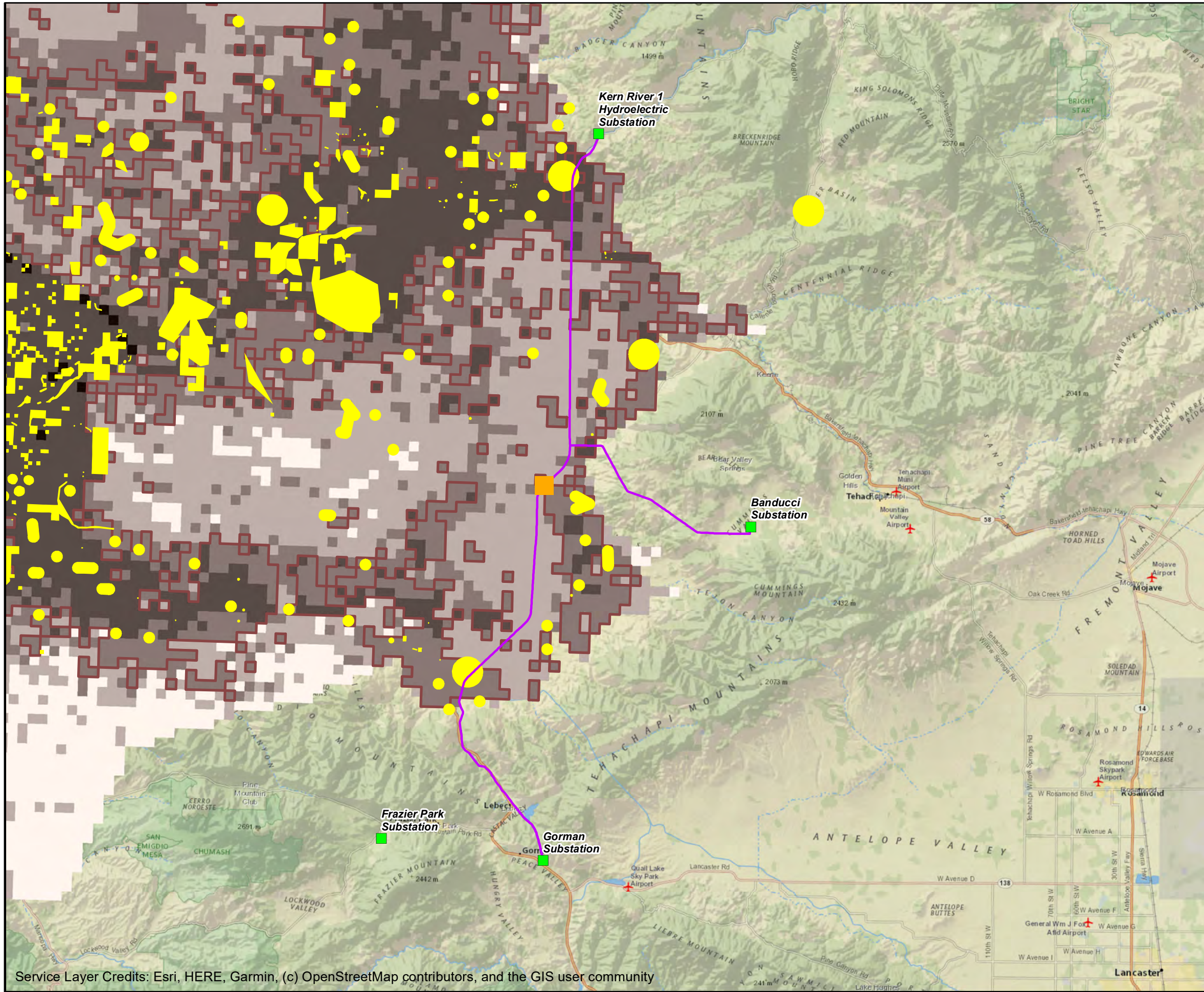


**FIGURE**  
**5**

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community



\\corporate\gis\arcgis\projects\env\T:\ENV\SC\SCOE\_TLRR\ArcGIS\_Desktop\KERNISCE\_TLRR\_KERN\_Fig6\_San Joaquin Kit Fox.mxd 9/27/2021 mgj01044  
Coordinate System: NAD 1983 UTM Zone 11N



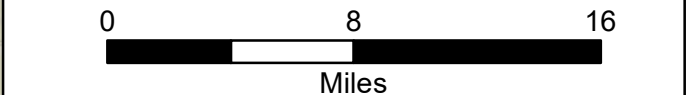
- Legend:
- Substation
  - Kern River Alignment
  - California Natural Diversity Database (CNDDB)
  - Predicted Occupied Habitat

- Occurrence
- Active Burrow
- Probability of Occurrence
- 0 - 0.2
  - 0.2 - 0.4
  - 0.4 - 0.6
  - 0.6 - 0.8
  - 0.8 - 1.0

NOTES:

1) CNDDB polygons represent records for San Joaquin Kit Fox (*Vulpes macrotis mutica*)

2) Predicted Occupied Habitat and Probability of Occurrence based on USGS models (<https://databasin.org/>)



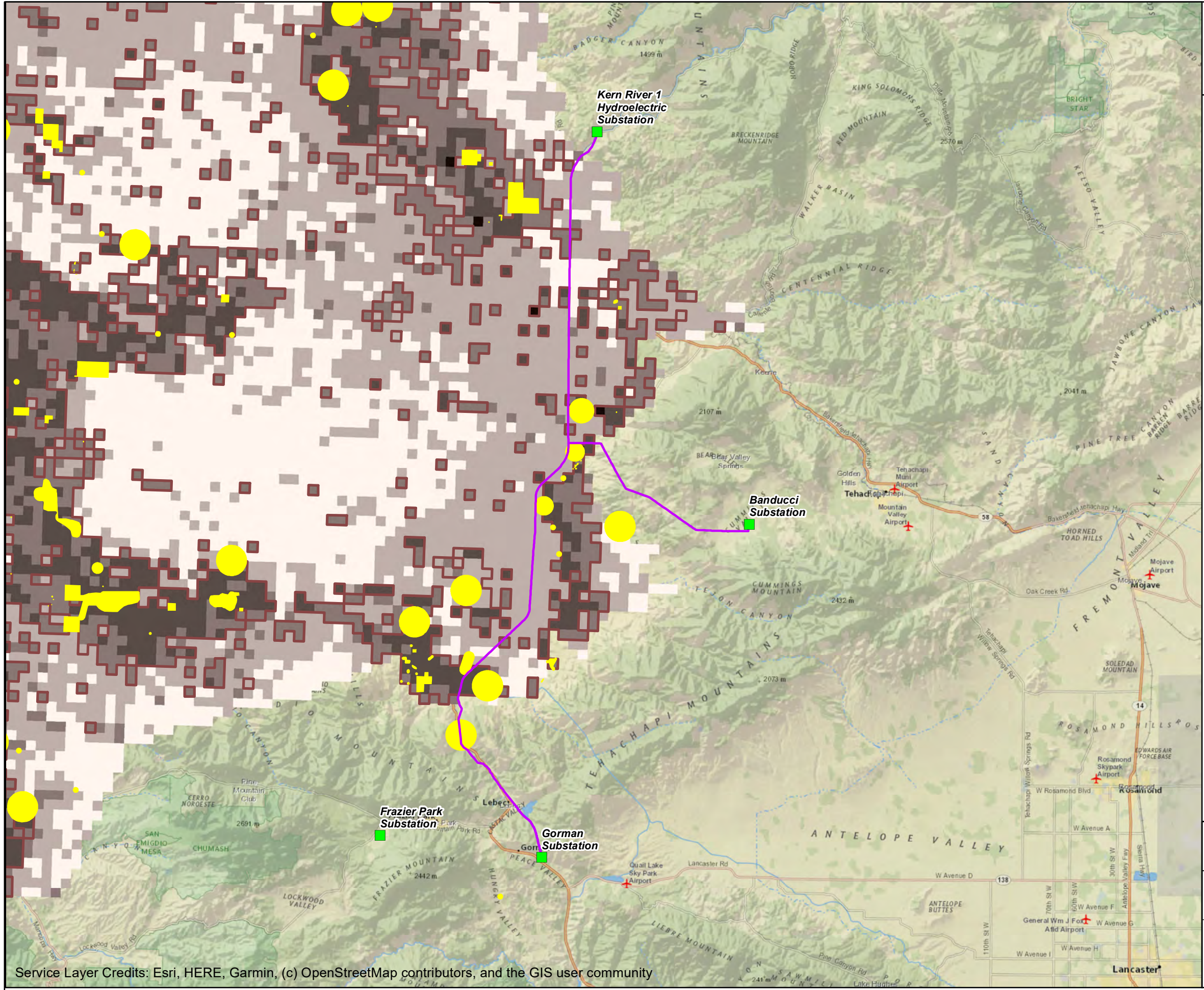
**GORMAN-KERN RIVER  
66 kV PROJECT**


**SAN JOAQUIN KIT FOX  
PROBABILITY OF OCCURRENCE**

FIGURE  
6




\\corporate\gis\arcgis\projects\env\T:\ENV\SCISE\TLLR\ArcGIS\_Desktop\KERNISCE\_TLRR\_KERN\_Fig1\_Blunt-nosed Leopard Lizard.mxd 9/27/2021 mg01044  
Coordinate System: NAD 1983 UTM Zone 11N














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Legend:

-  Substation
-  Kern River Alignment
-  California Natural Diversity Database (CNDDB)
-  Predicted Occupied Habitat

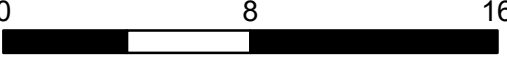
Probability of Occurrence

-  0 - 0.2
-  0.2 - 0.4
-  0.4 - 0.6
-  0.6 - 0.8
-  0.8 - 1.0

NOTES:

1) CNDDB polygons represent records for Blunt-nosed Leopard Lizard (*Gambelia sila*)


2) Predicted Occupied Habitat and Probability of Occurrence based on USGS models (<https://databasin.org/>)



0 8 16  
Miles

**GORMAN-KERN RIVER  
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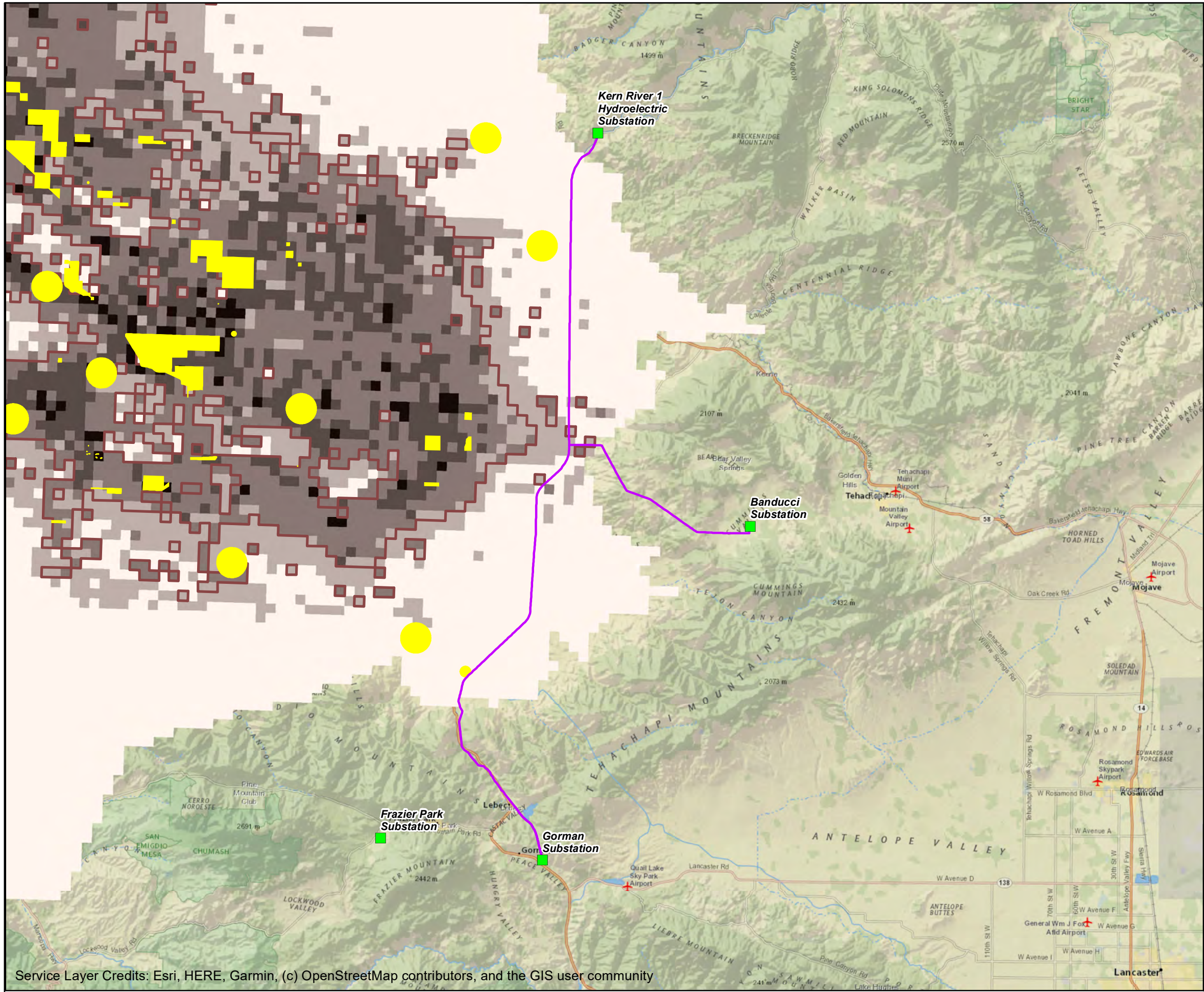
**BLUNT-NOSED LEOPARD LIZARD  
PROBABILITY OF OCCURRENCE**




**FIGURE  
7**




\\corpgis\Data\ArcGisData\GISPROJECTS\ENV\T\ENVSCEISCE\_TLLR\ArcGIS\_Desktop\KERNISCE\_TLLR\_KERN\_Tipton Kangaroo Rat.mxd 9/27/2021 mgi01044  
Coordinate System: NAD 1983 UTM Zone 11N









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**Legend:**

-  Substation
-  Kern River Alignment
-  California Natural Diversity Database (CNDDB)
-  Predicted Occupied Habitat

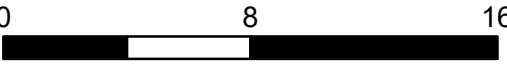
**Probability of Occurrence**

	0 - 0.2
	0.2 - 0.4
	0.4 - 0.6
	0.6 - 0.8
	0.8 - 1.0

**NOTES:**

1) CNDDB polygons represent records for Tipton Kangaroo Rat (*Dipodomys nitratoide nitratoide*s)


2) Predicted Occupied Habitat and Probability of Occurrence based on USGS models (<https://databasin.org/>)



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**GORMAN-KERN RIVER  
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**TIPTON KANGAROO RAT  
PROBABILITY OF OCCURRENCE**

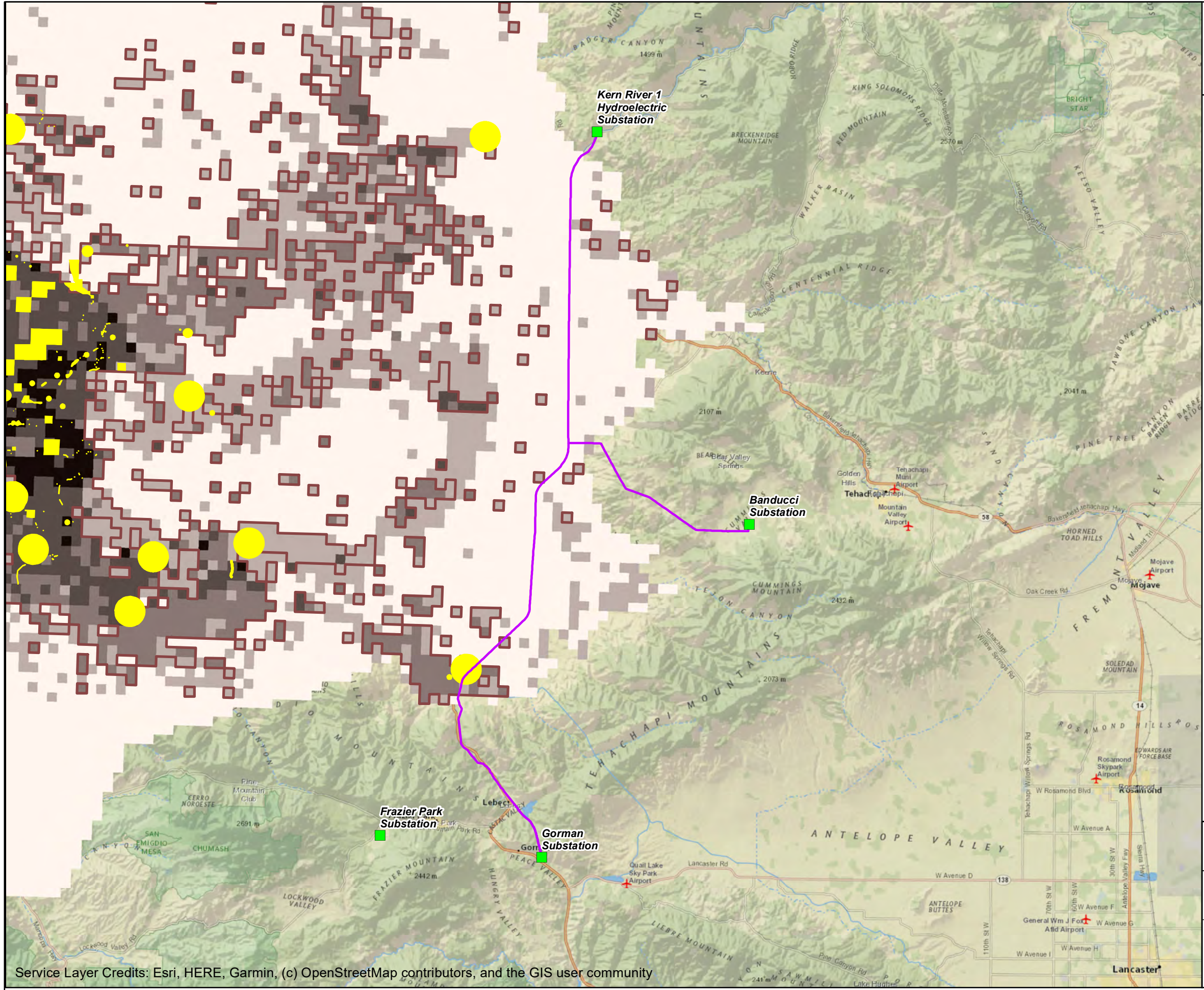


**FIGURE**

**8**



\\corporate\gis\arcgis\projects\env\T:\ENVS\SCISE\TLLR\ArcGIS\_Desktop\KERN\SCISE\_TLLR\_KERN\_Fig9\_Nelson's antelope squirrel.mxd 9/27/2021 mgl01044  
Coordinate System: NAD 1983 UTM Zone 11N



Legend:

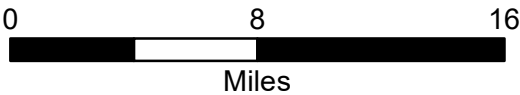
- Substation
- Kern River Alignment
- California Natural Diversity Database (CNDDDB)
- Predicted Occupied Habitat

Probability of Occurrence

- 0 - 0.2
- 0.2 - 0.4
- 0.4 - 0.6
- 0.6 - 0.8
- 0.8 - 1.0

NOTES:

- CNDDDB polygons represent records for Nelson's Antelope Squirrel (*Ammodontomys nelsoni*)
- Predicted Occupied Habitat and Probability of Occurrence based on USGS models (<https://databasin.org/>)



**GORMAN-KERN RIVER  
66 kV PROJECT**

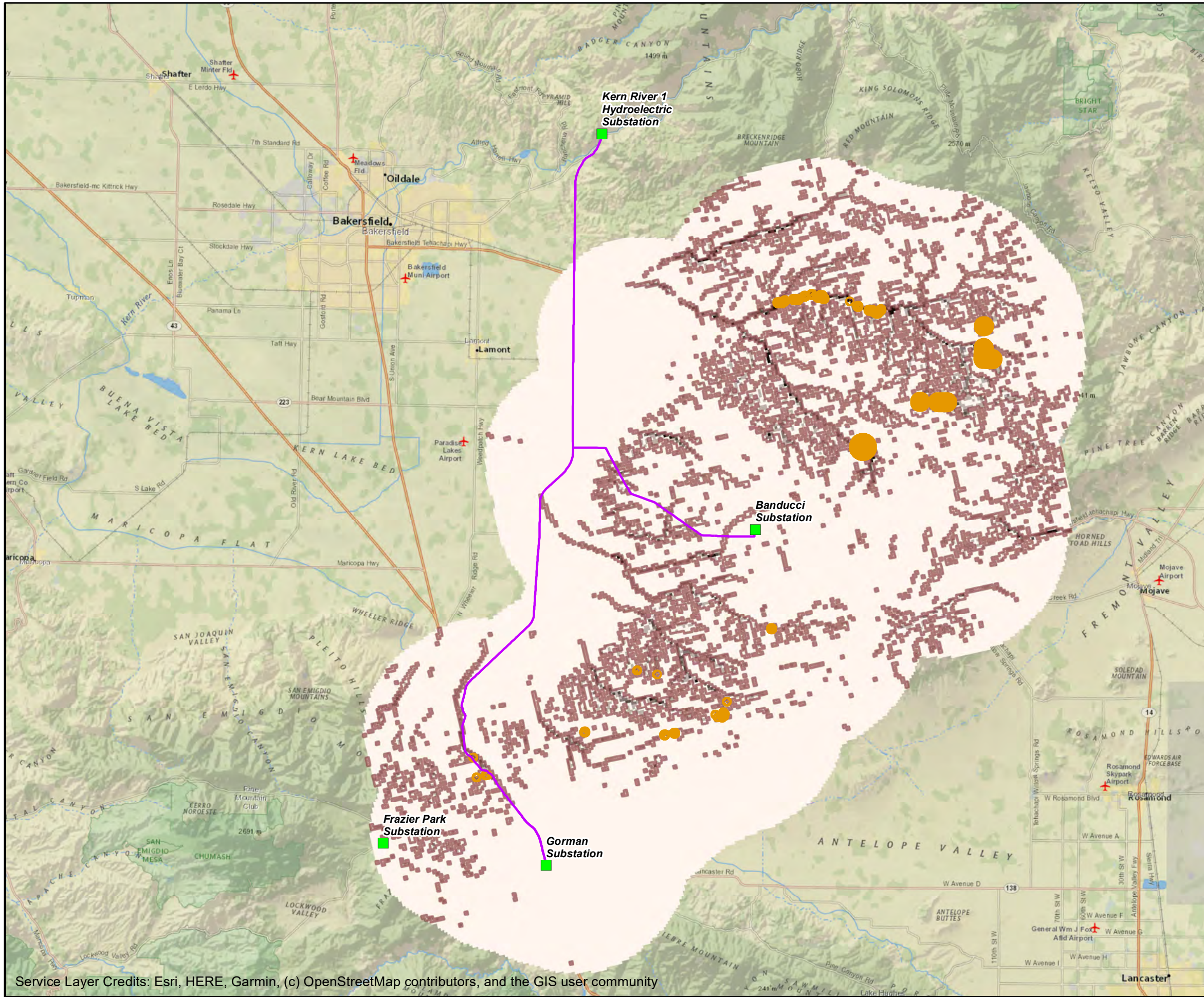
**NELSON'S ANTELOPE SQUIRREL  
PROBABILITY OF OCCURRENCE**


**ARCADIS**

**FIGURE  
9**




\\corporate\GIS\Projects\ENVT\ENVSCE\TLLR\ArcGIS\_Desktop\KERNISCE\_TLRR\_KERN\_Fig10\_Tehachapi Slender Salamander.mxd 9/27/2021 mg01044  
Coordinate System: NAD 1983 UTM Zone 11N







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Legend:


 Substation


 Kern River Alignment


 California Natural Diversity Database (CNDDB)


 Predicted Occupied Habitat


Probability of Occurrence

 0 - 0.2

 0.2 - 0.4

 0.4 - 0.6

 0.6 - 0.8

 0.8 - 1.0

NOTES:

1) CNDDB polygons represent records for Tehachapi Slender Salamander (*Batrachoseps stebbinsi*)

2) Predicted Occupied Habitat and Probability of Occurrence based on USGS models (<https://datasin.org/>)

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TEHACHAPI SLENDER SALAMANDER  
PROBABILITY OF OCCURRENCE


ARCADIS

FIGURE  
10

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

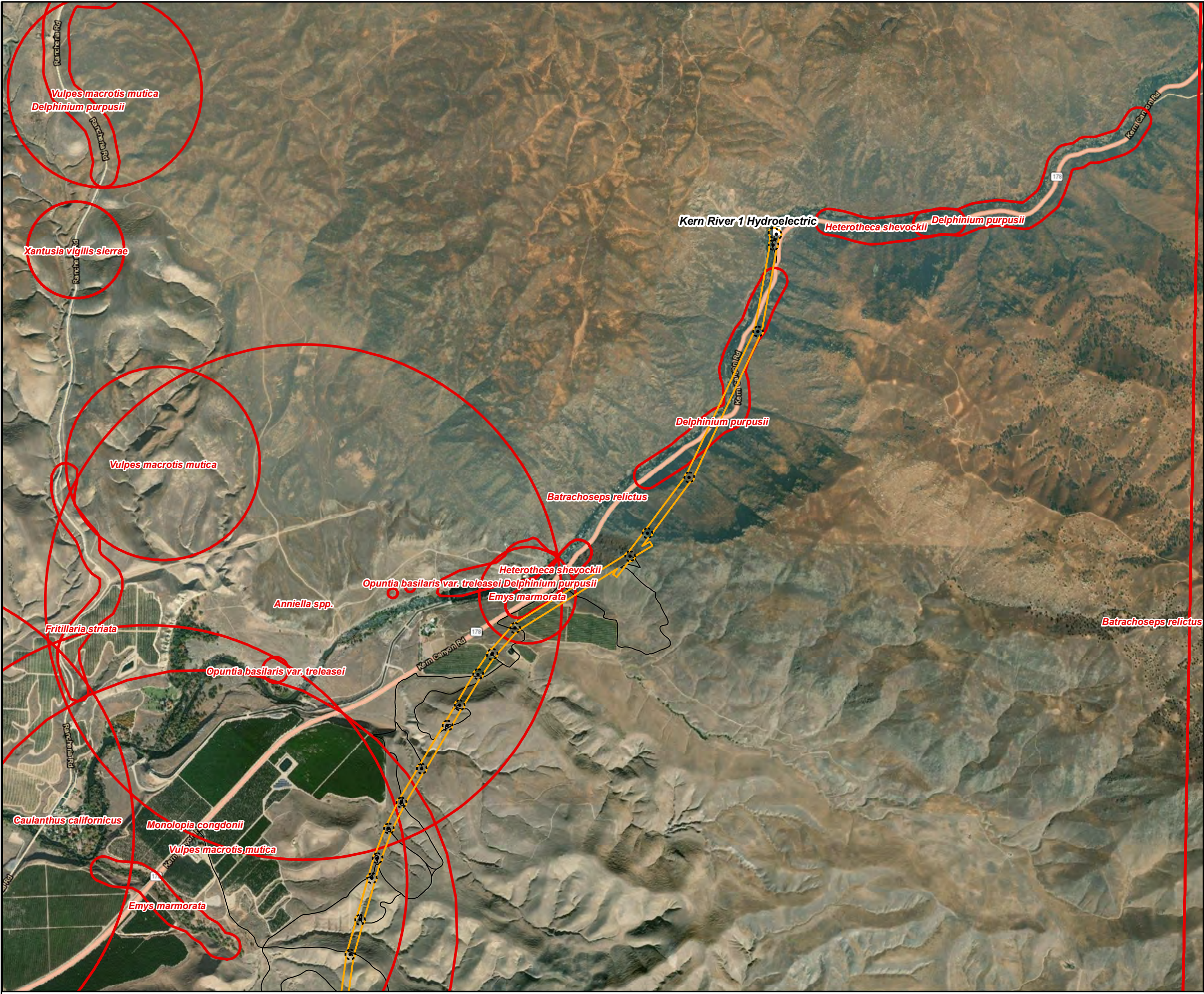


# APPENDICES

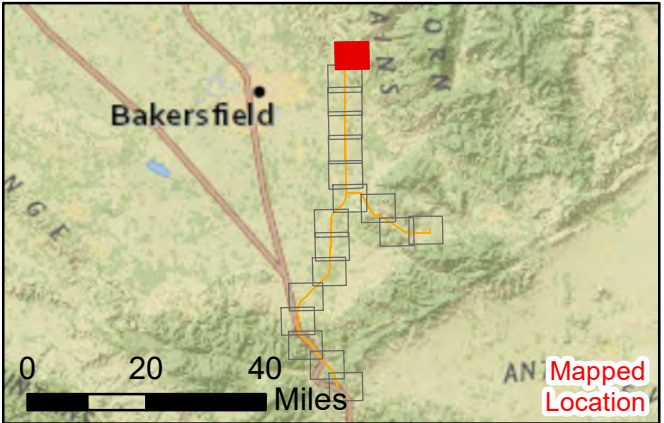
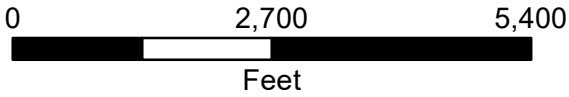




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Coordinate System: NAD 1983 UTM Zone 11N



- LEGEND**
- STRUCTURE LOCATION
  - SUBSTATION LOCATION
  - ACCESS ROADS
  - 100 FOOT RADIUS TOWER BUFFER
  - SURVEY AREA
  - CNDDDB OCCURRENCES

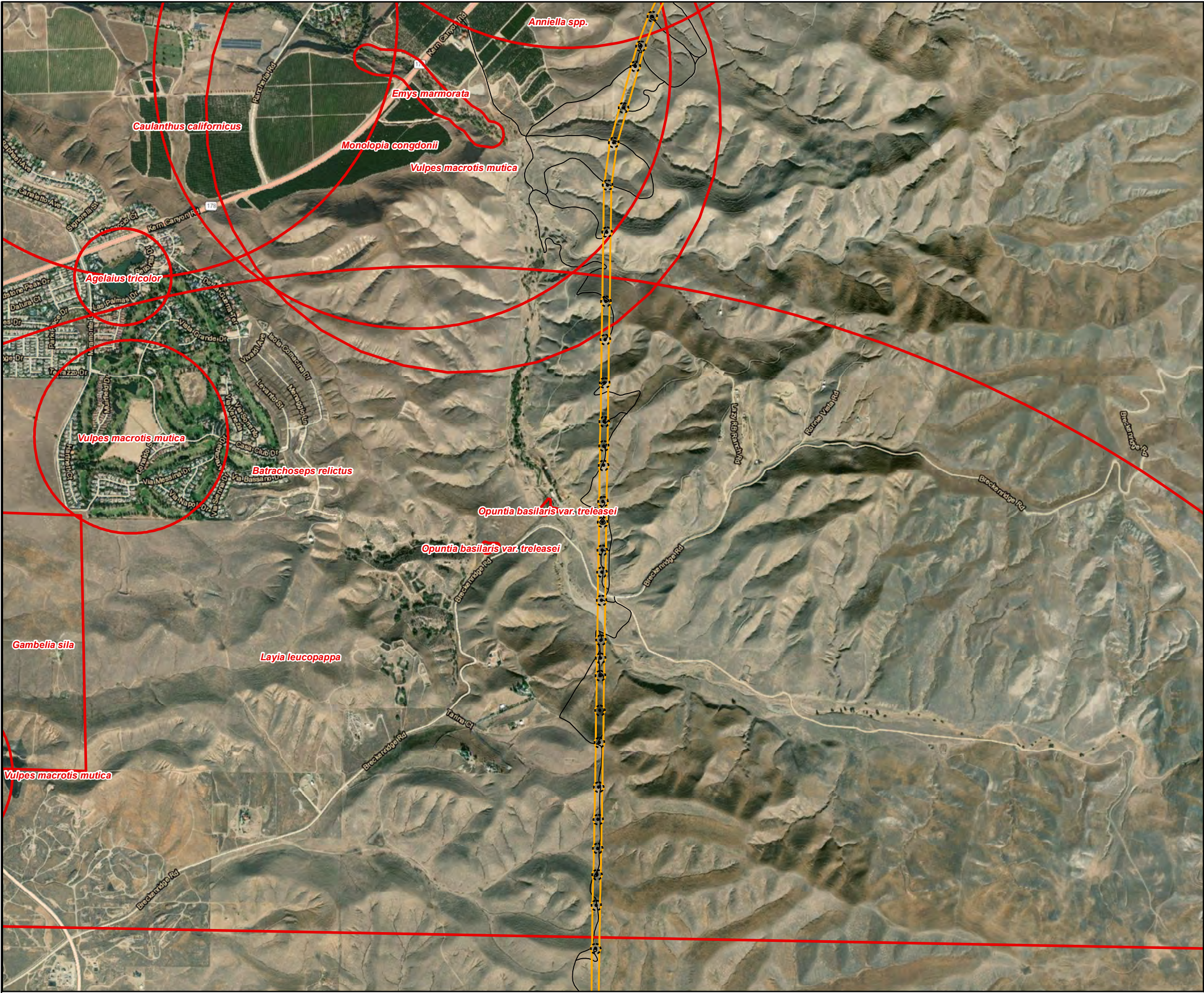


**GORMAN-KERN RIVER  
66 kV PROJECT**

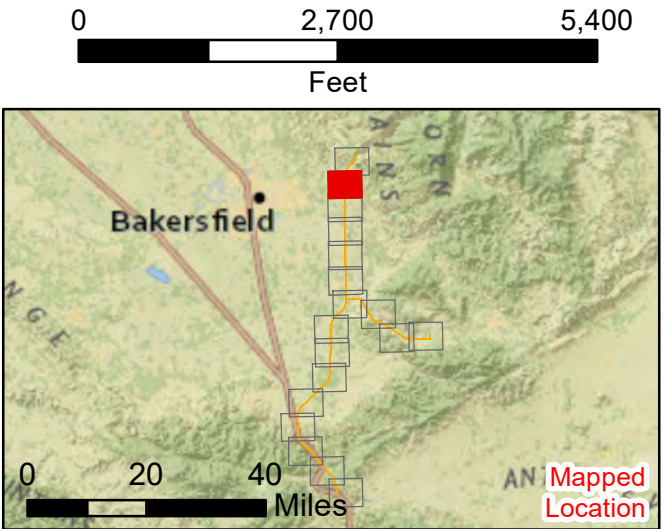
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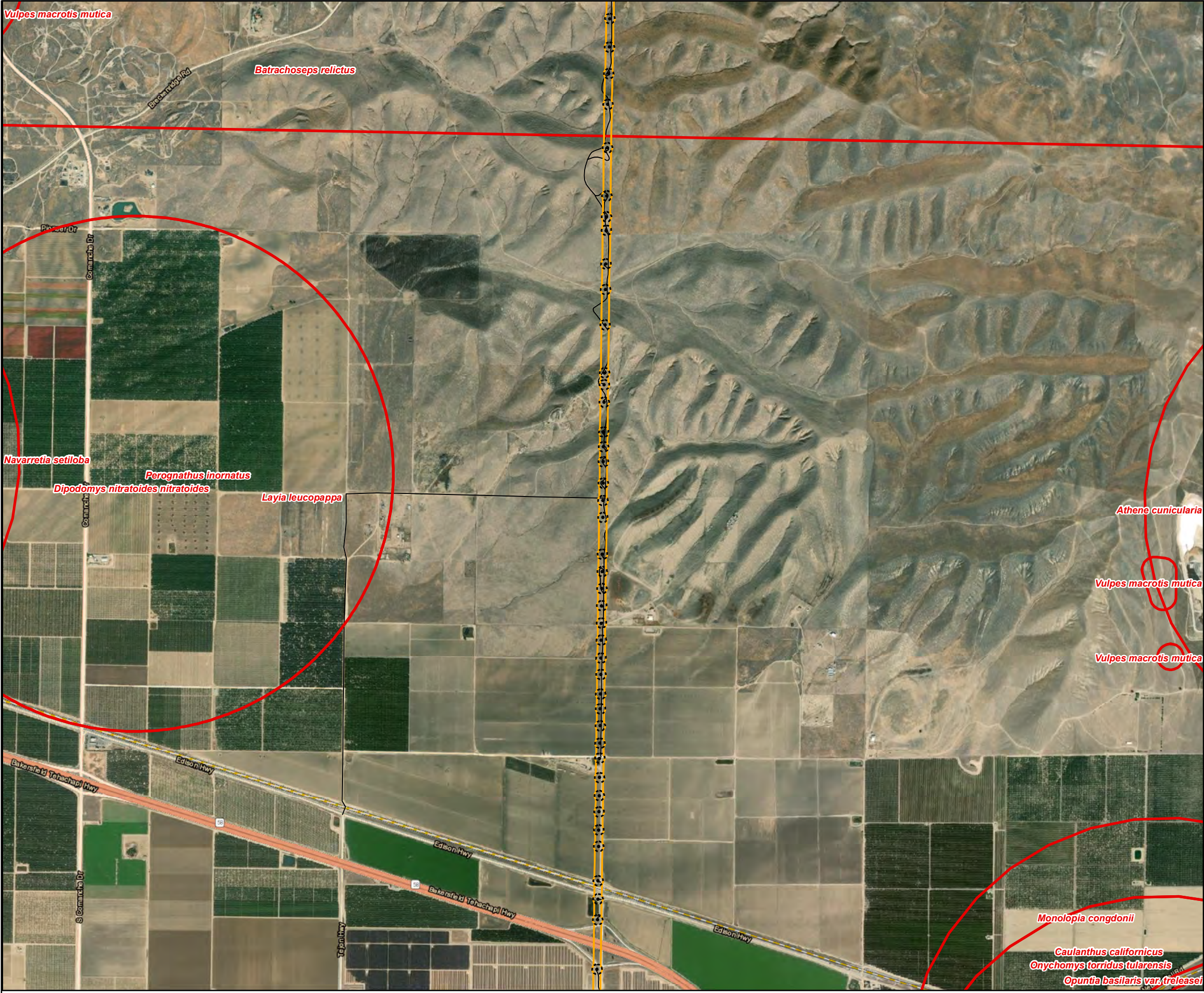


- LEGEND
- STRUCTURE LOCATION
  - SUBSTATION LOCATION
  - ACCESS ROADS
  - ⋯ 100 FOOT RADIUS TOWER BUFFER
  - ▭ SURVEY AREA
  - ▭ CNDDDB OCCURRENCES





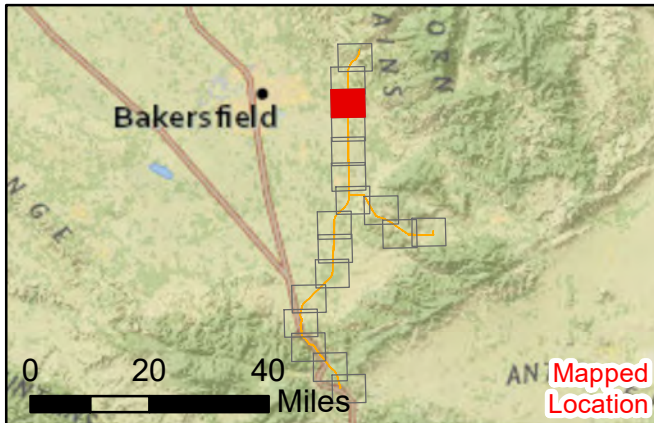
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Coordinate System: NAD 1983 UTM Zone 11N



**LEGEND**

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDDB OCCURRENCES

0 2,700 5,400  
Feet

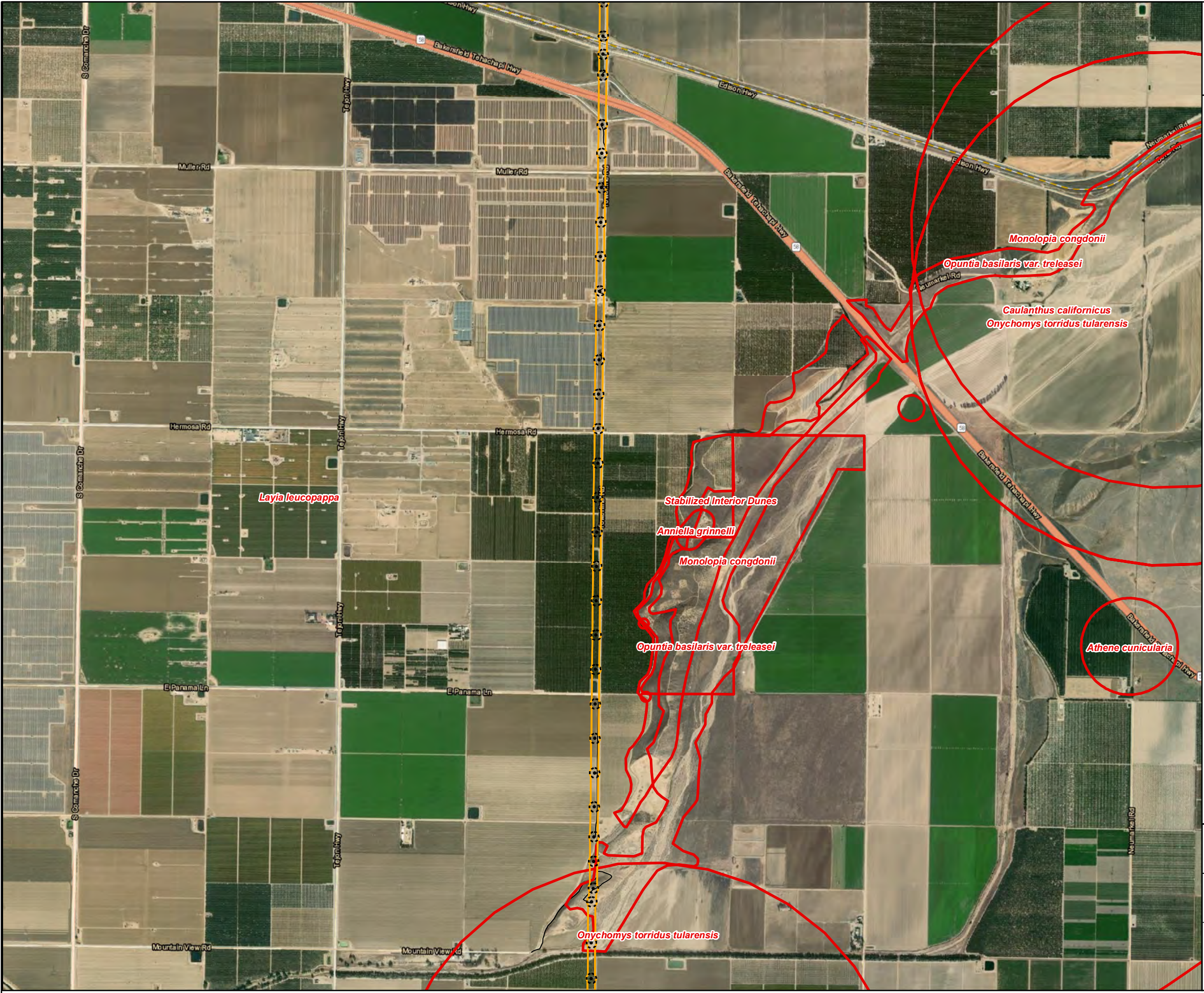


**GORMAN-KERN RIVER  
66 kV PROJECT**

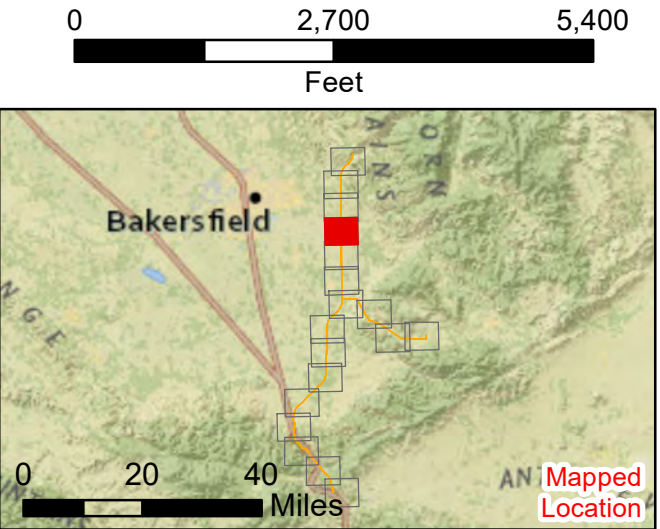
**CNDDDB OCCURRENCES**







- LEGEND
- STRUCTURE LOCATION
  - SUBSTATION LOCATION
  - ACCESS ROADS
  - ⋯ 100 FOOT RADIUS TOWER BUFFER
  - ▭ SURVEY AREA
  - ▭ CNDDDB OCCURRENCES



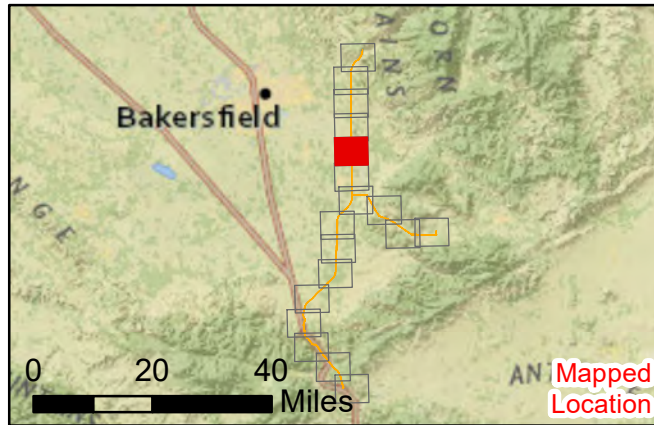
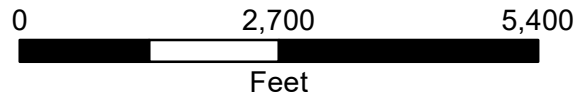


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Coordinate System: NAD 1983 UTM Zone 11N



**LEGEND**

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDDB OCCURRENCES

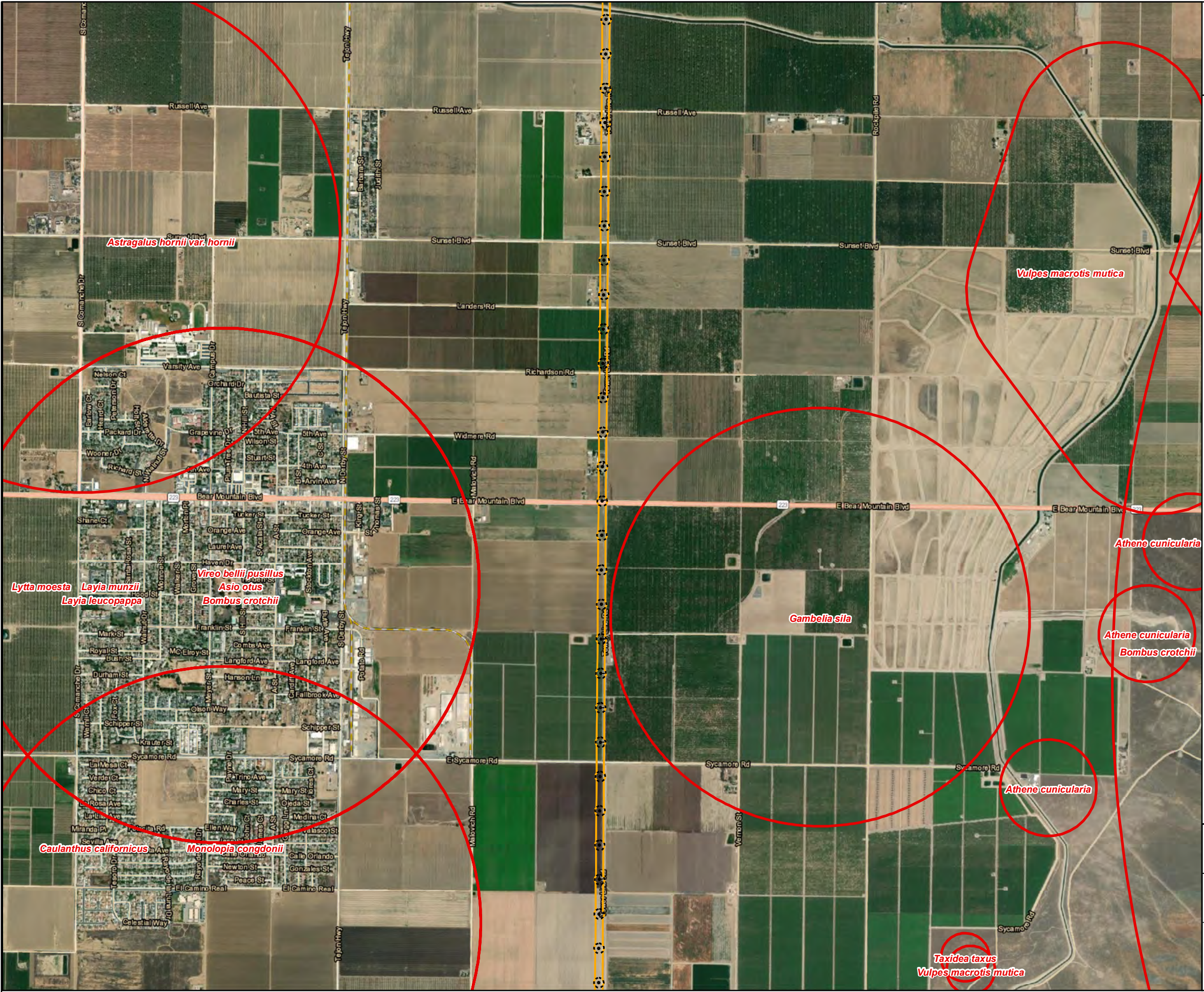


**GORMAN-KERN RIVER  
66 kV PROJECT**

**CNDDDB OCCURRENCES**

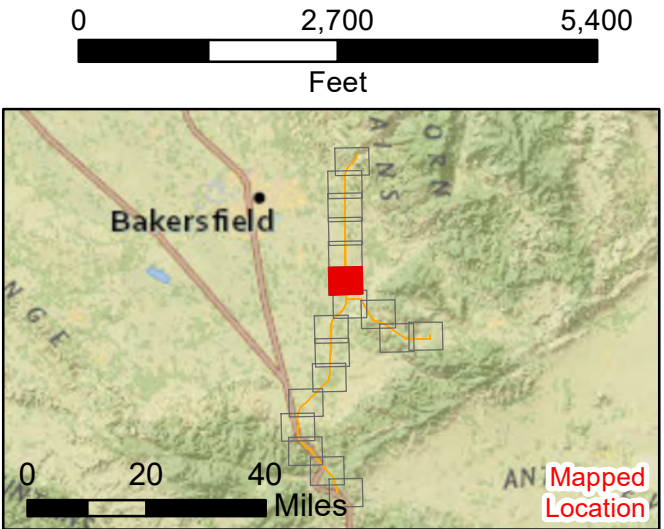






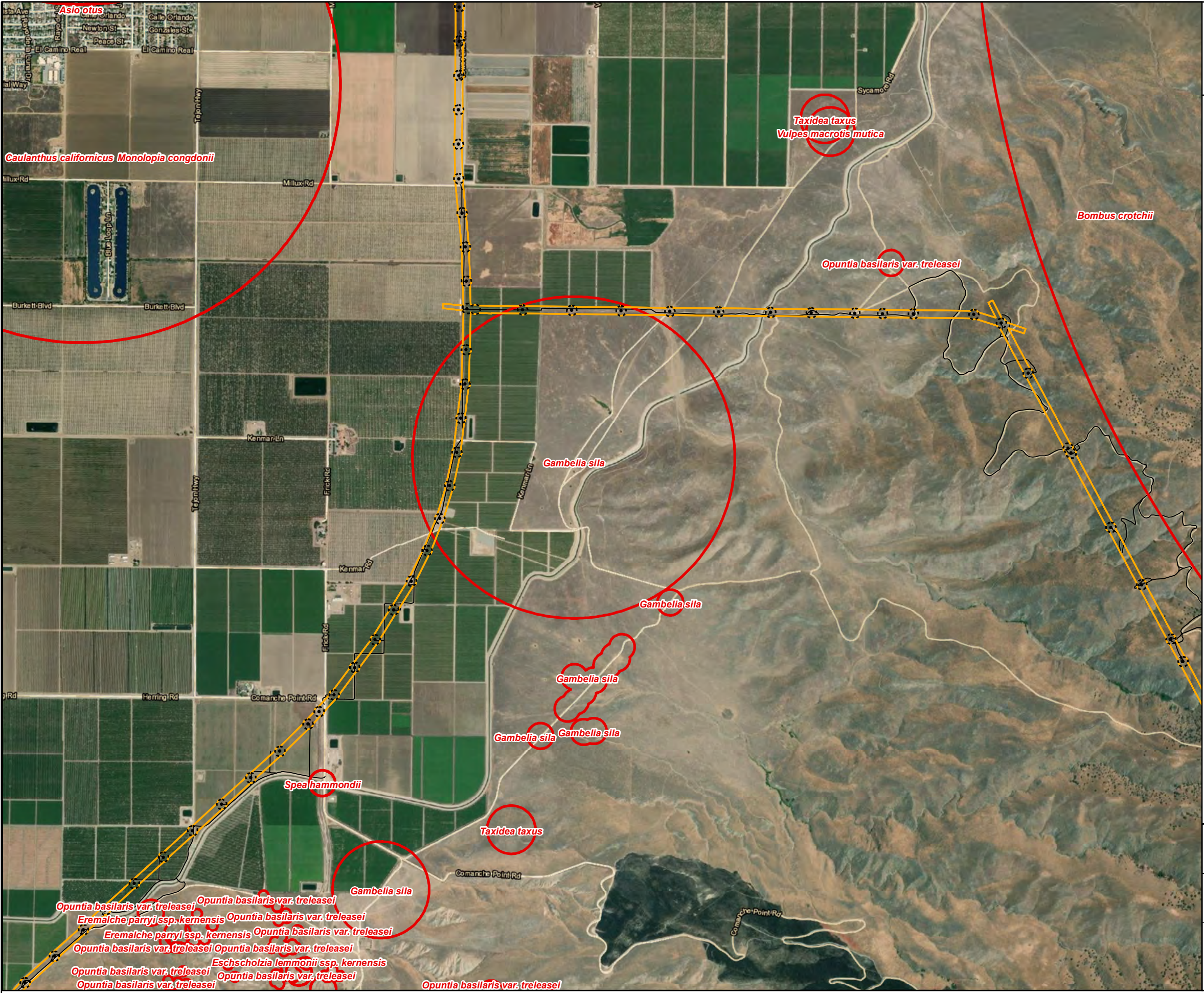
**LEGEND**

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- ACCESS ROADS
- ⬜ 100 FOOT RADIUS TOWER BUFFER
- ▭ SURVEY AREA
- ▭ CNDDDB OCCURRENCES

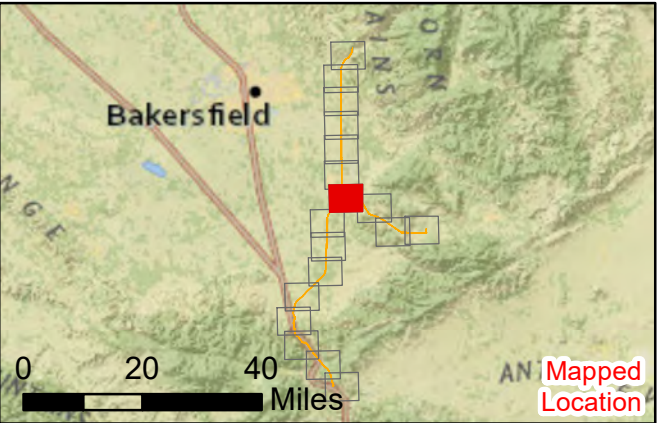
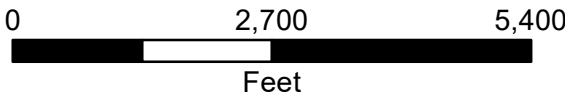




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Coordinate System: NAD 1983 UTM Zone 11N



- LEGEND**
- STRUCTURE LOCATION
  - SUBSTATION LOCATION
  - ACCESS ROADS
  - 100 FOOT RADIUS TOWER BUFFER
  - ▭ SURVEY AREA
  - ▭ CNDDB OCCURRENCES

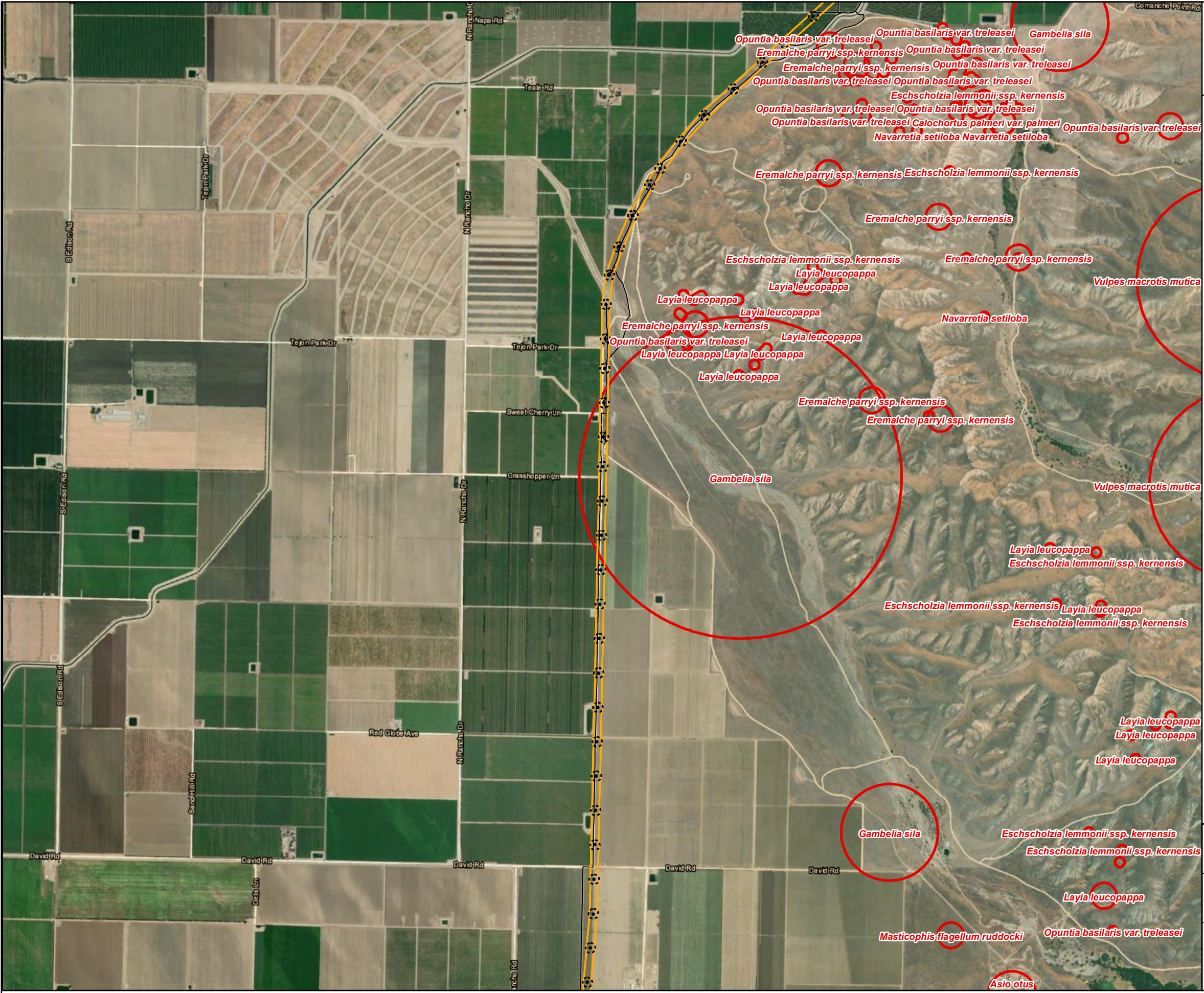


**GORMAN-KERN RIVER  
66 kV PROJECT**

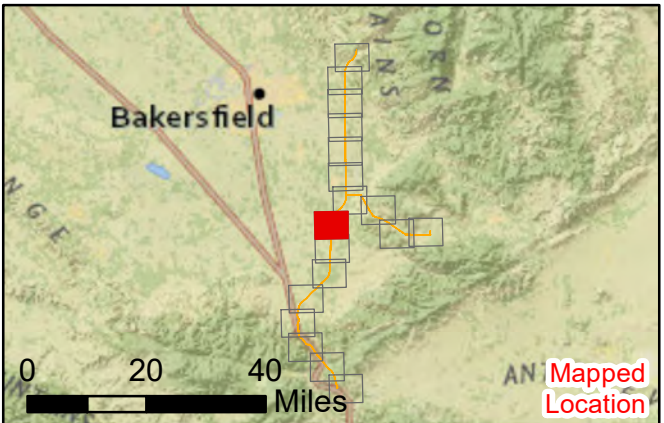
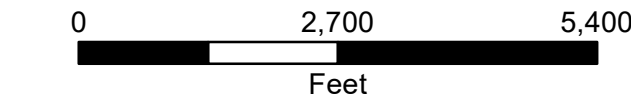
**CNDDB OCCURRENCES**







- LEGEND**
- STRUCTURE LOCATION
  - SUBSTATION LOCATION
  - ACCESS ROADS
  - 100 FOOT RADIUS TOWER BUFFER
  - SURVEY AREA
  - CNDDDB OCCURRENCES



**GORMAN-KERN RIVER  
66 kV PROJECT**

**CNDDDB OCCURRENCES**

**ARCADIS**

Appendix  
**A**  
Page 8 of 18

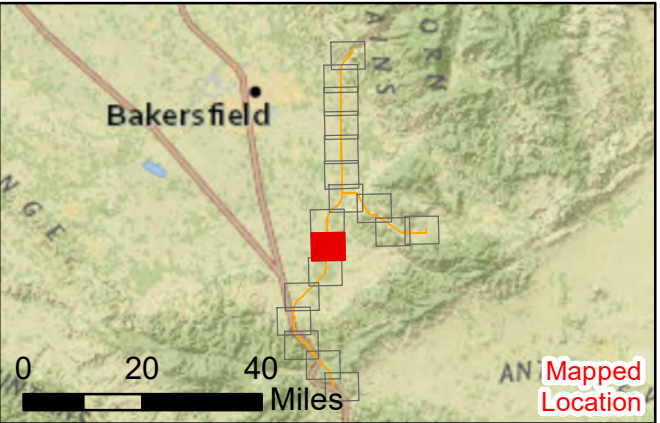
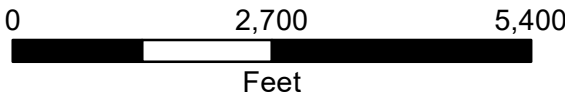


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LEGEND

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- ACCESS ROADS
- 100 FOOT RADIUS TOWER BUFFER
- SURVEY AREA
- CNDDDB OCCURRENCES



GORMAN-KERN RIVER  
66 kV PROJECT

CNDDDB OCCURRENCES

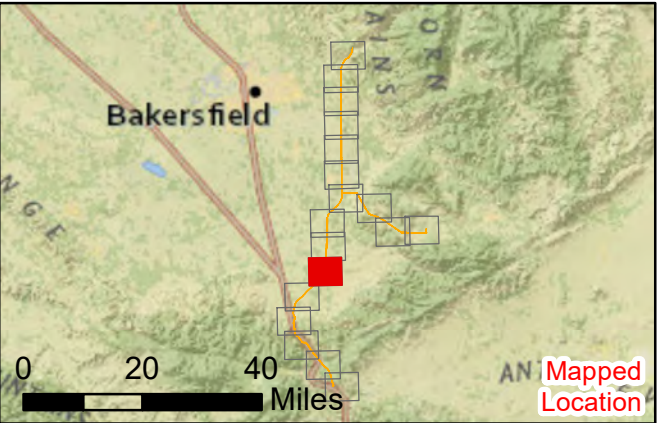
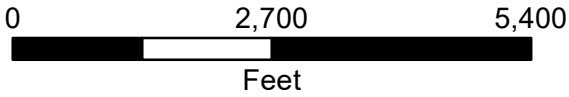




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Coordinate System: NAD 1983 UTM Zone 11N



- LEGEND
- STRUCTURE LOCATION
  - SUBSTATION LOCATION
  - ACCESS ROADS
  - ⬜ 100 FOOT RADIUS TOWER BUFFER
  - ▭ SURVEY AREA
  - ▭ CNDDDB OCCURRENCES



GORMAN-KERN RIVER  
66 kV PROJECT

CNDDDB OCCURRENCES

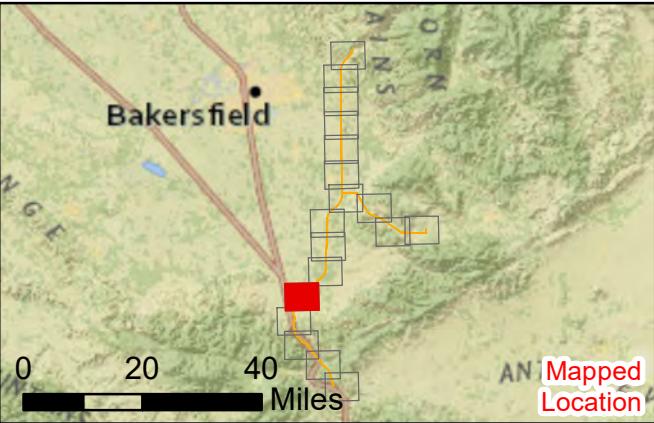
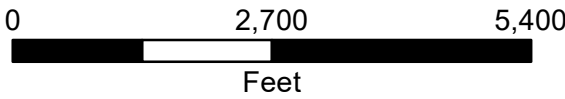


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Coordinate System: NAD 1983 UTM Zone 11N



LEGEND

- STRUCTURE LOCATION
- SUBSTATION LOCATION
- ACCESS ROADS
- ⬜ 100 FOOT RADIUS TOWER BUFFER
- ▭ SURVEY AREA
- ▭ CNDDDB OCCURRENCES



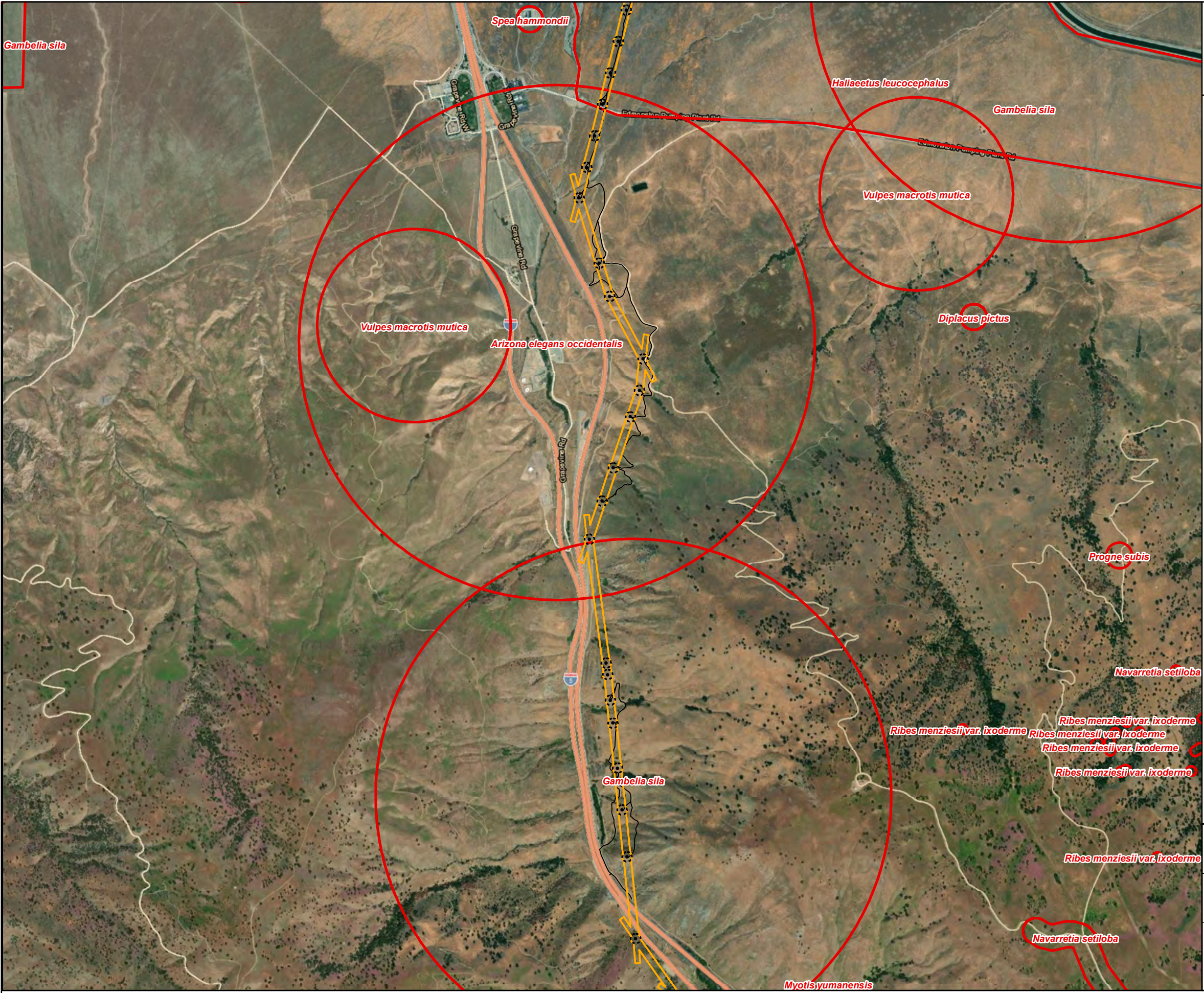
GORMAN-KERN RIVER  
66 kV PROJECT

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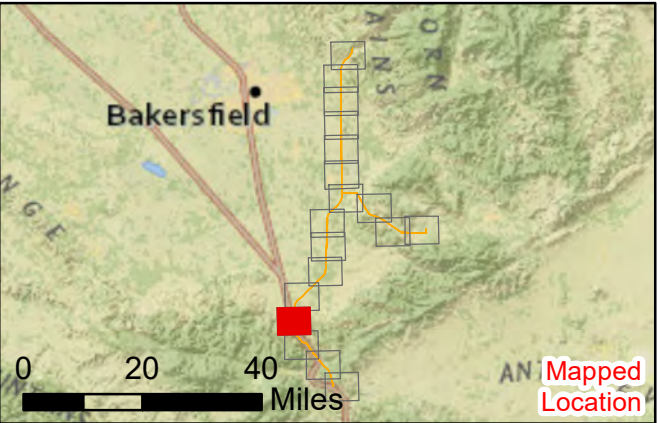
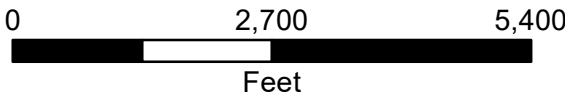




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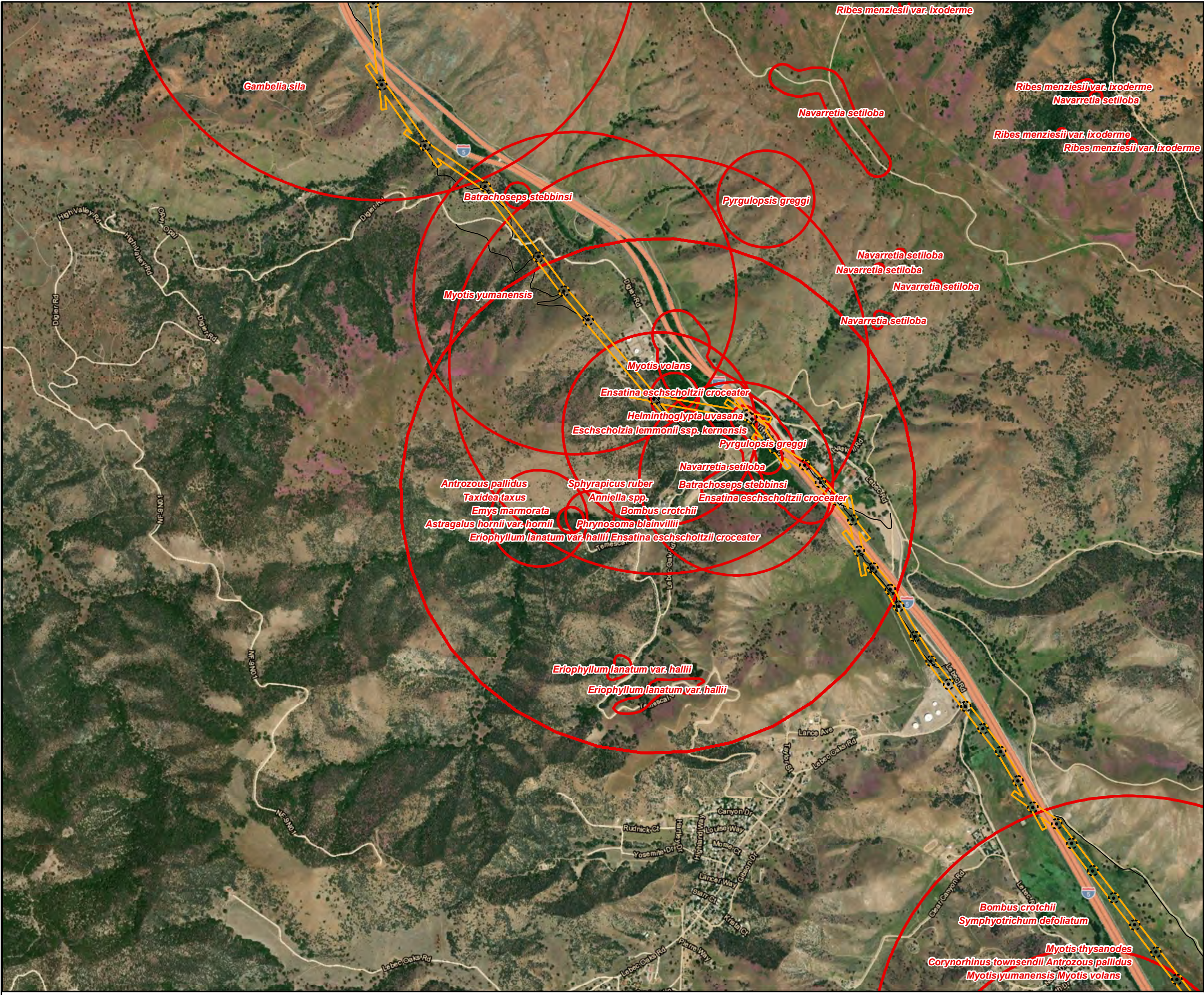


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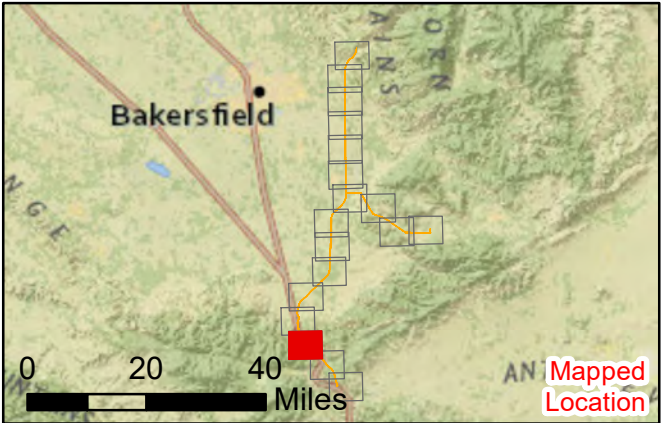
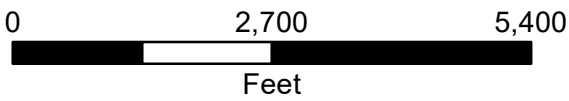
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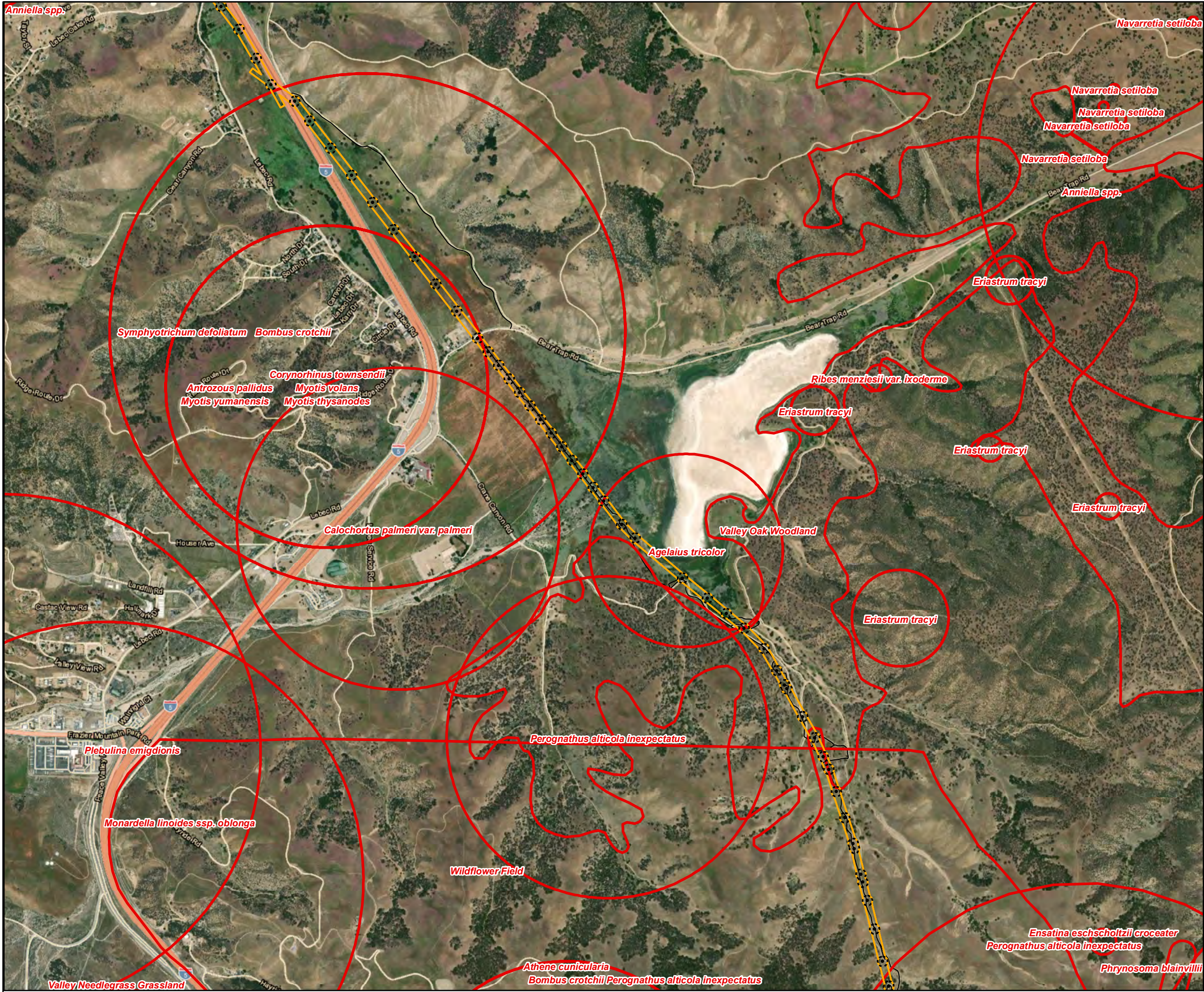


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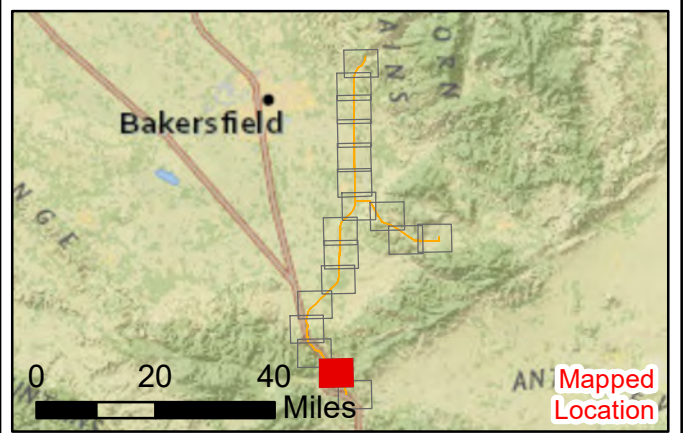
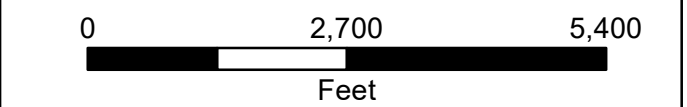
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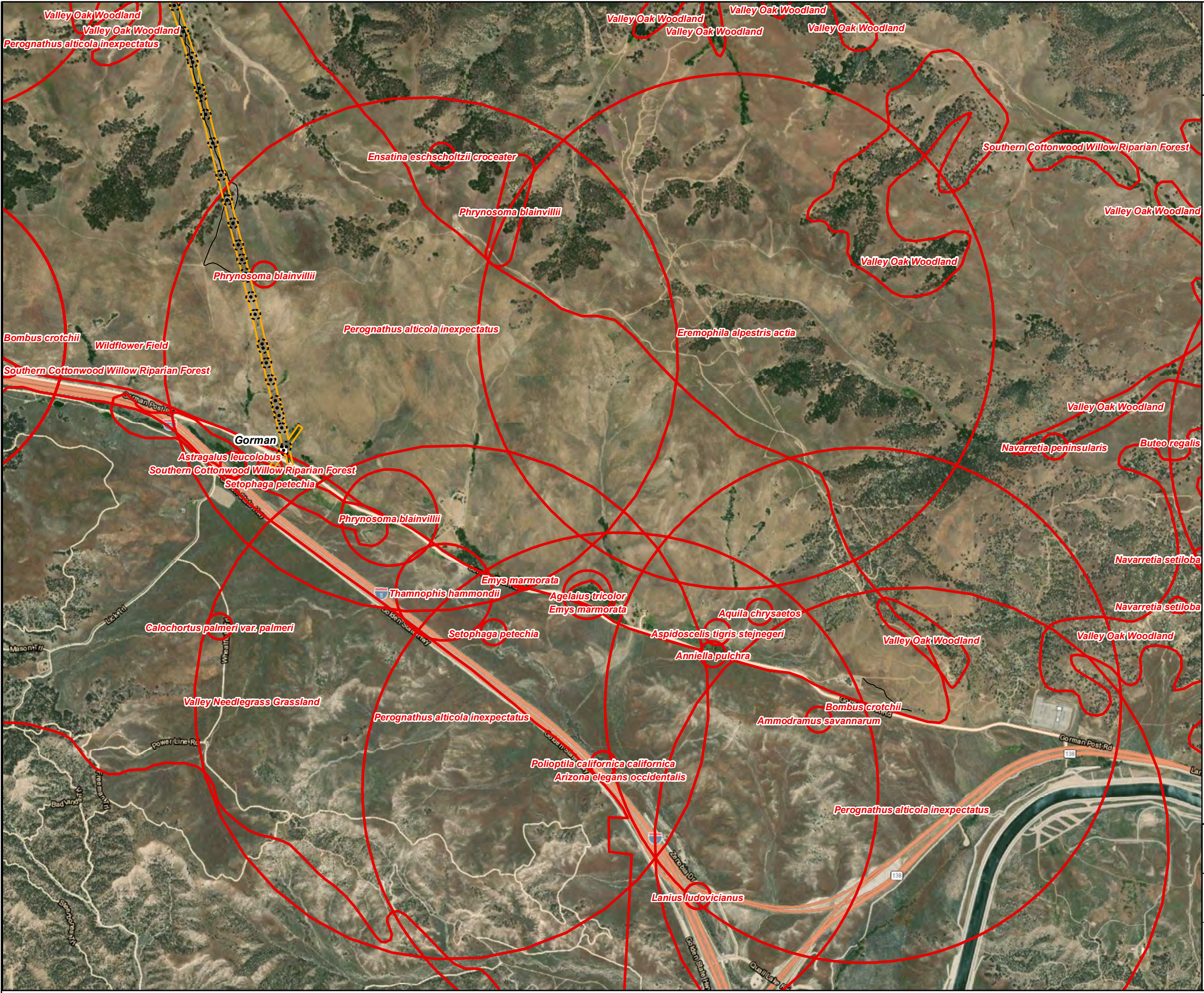
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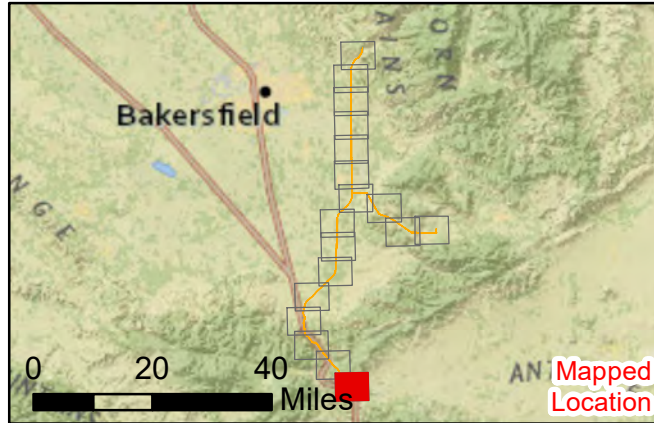
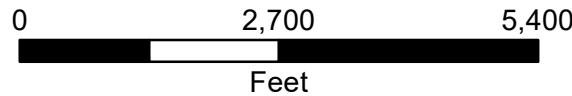


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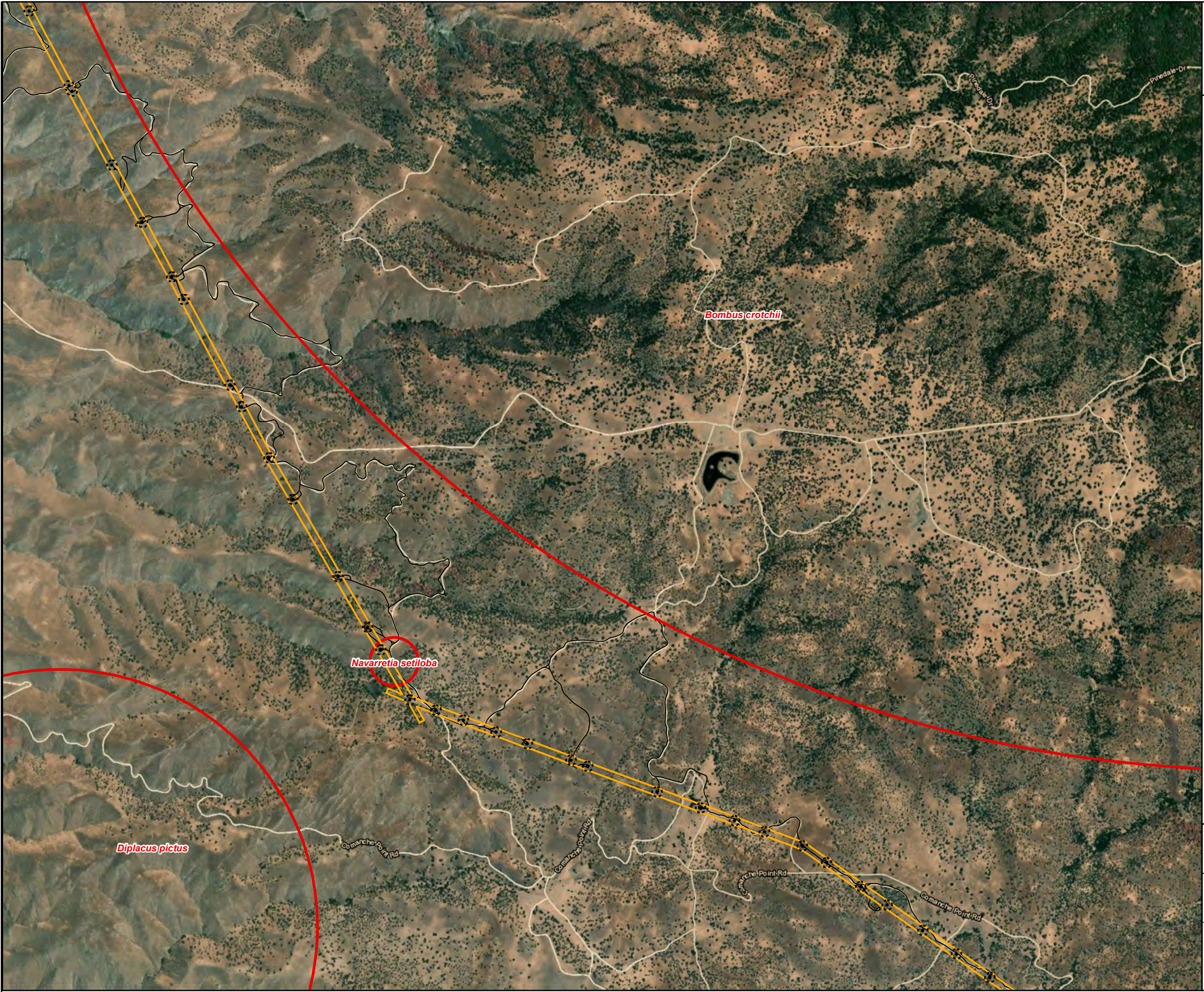
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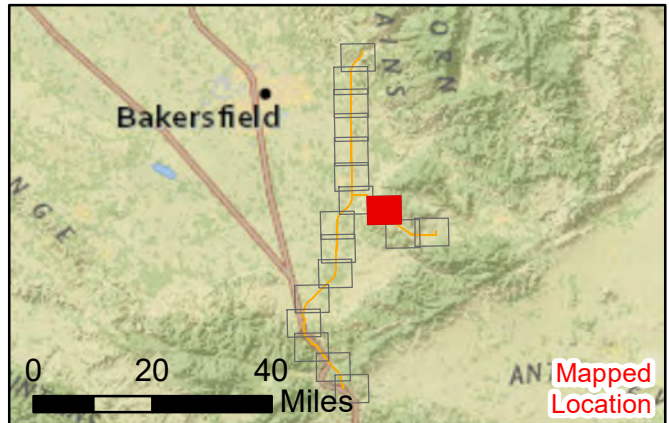
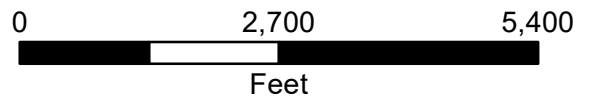


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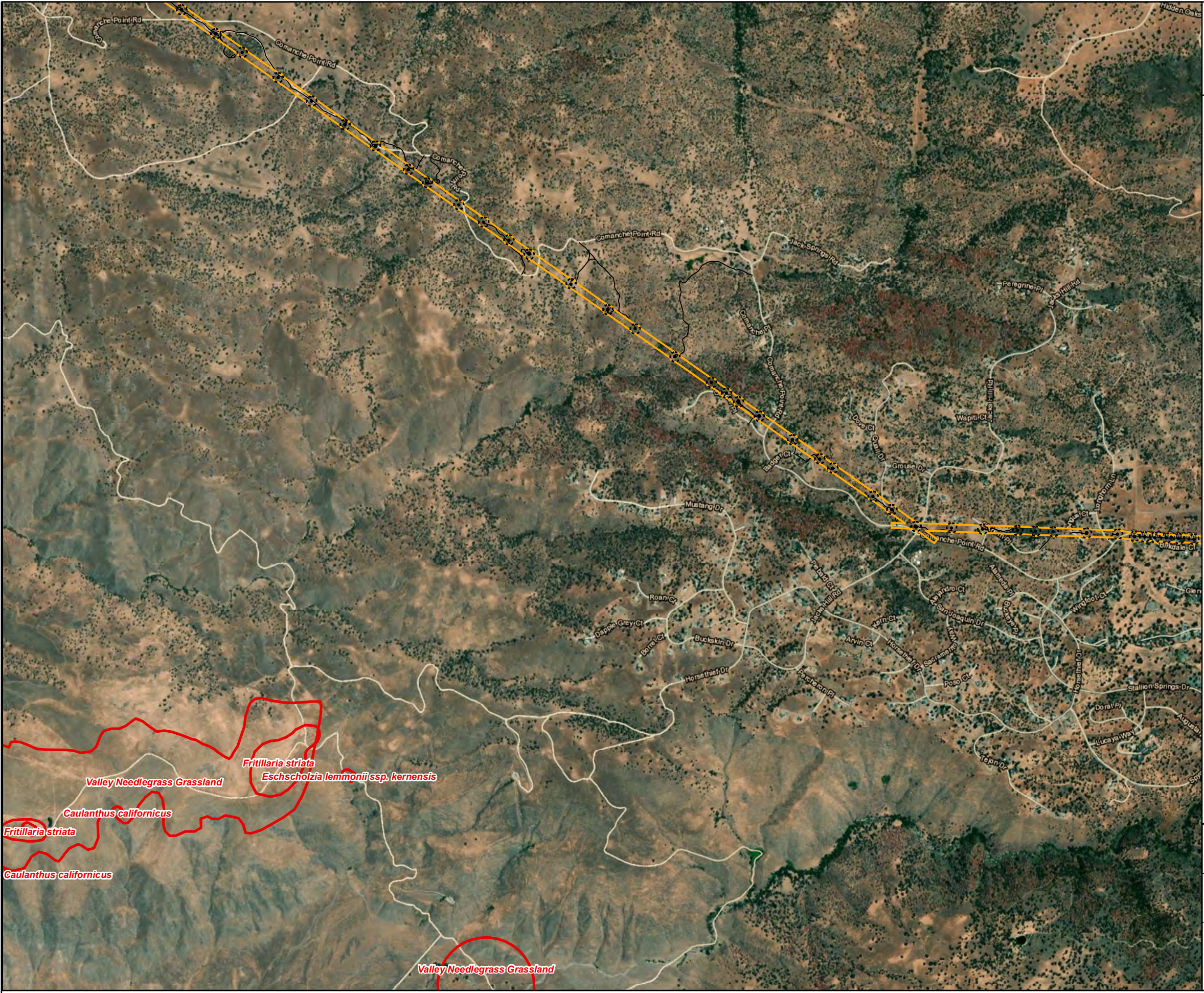


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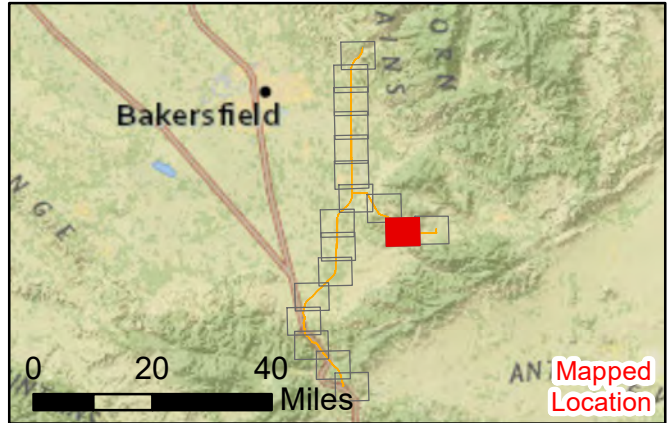
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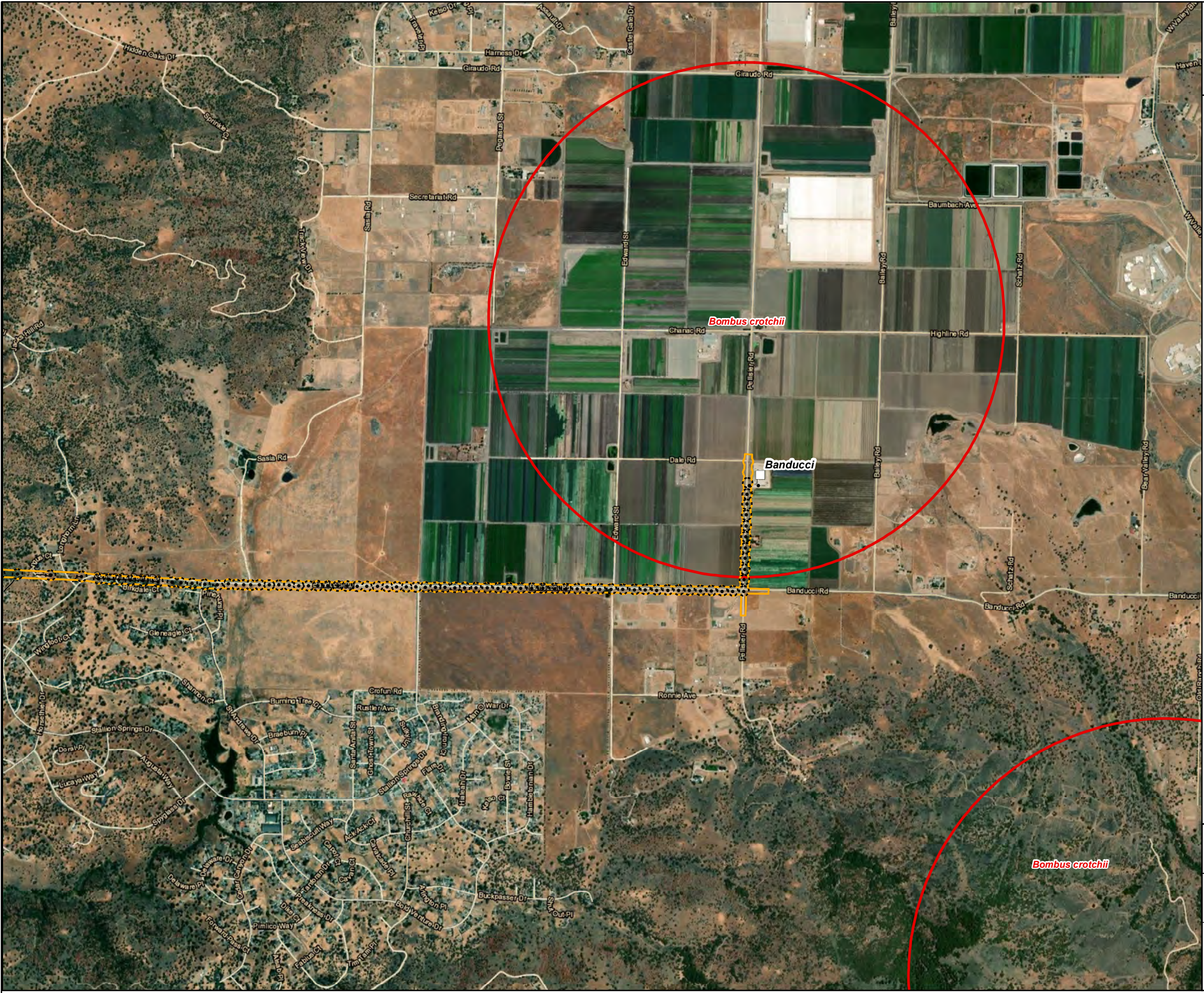
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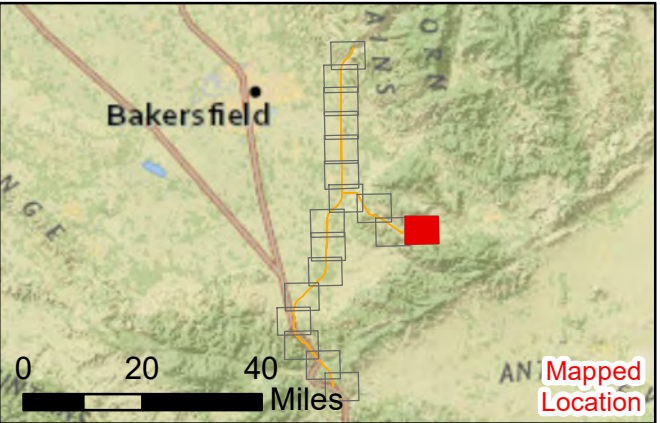
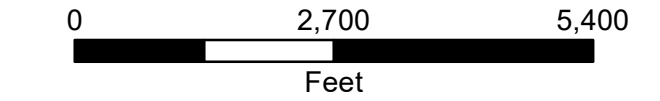
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Appendix B. Observed Plant Species Along GKR Alignment  
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Scientific Name	Common Name	Family	Native or Non-Native	Form
<b>Trees</b>				
<i>Acer negundo</i>	Box-elder	Sapindaceae	Native	Tree
<i>Aesculus californica</i>	California buckeye	Sapindaceae	Native	Tree
<i>Ailanthus altissima</i>	Tree of heaven	Simaroubaceae	Non-native	Tree
<i>Juniperus californica</i>	California juniper	Cupressaceae	Native	Tree, Shrub
<i>Parkinsonia aculeata</i>	Mexican palo verde	Fabaceae	Non-native	Tree
<i>Pinus eldarica</i>	Afghan pine	Pinaceae	Non-native	Tree
<i>Pinus sabiniana</i>	Gray pine, foothill pine, ghost pine	Pinaceae	Native	Tree
<i>Platanus racemosa</i>	California sycamore, western sycamore	Platanaceae	Native	Tree
<i>Populus fremontii</i>	Fremont cottonwood	Salicaceae	Native	Tree
<i>Quercus chrysolepis</i>	Canyon live oak	Fagaceae	Native	Tree
<i>Quercus douglasii</i>	Blue oak	Fagaceae	Native	Tree
<i>Quercus lobata</i>	Valley oak	Fagaceae	Native	Tree
<i>Quercus wislizeni</i> var. <i>wislizeni</i>	Interior live oak	Fagaceae	Native	Tree
<i>Salix gooddingii</i>	Goodding's black willow	Salicaceae	Native	Tree
<i>Salix laevigata</i>	Red willow	Salicaceae	Native	Tree
<i>Salix lasiolepis</i>	Arroyo willow	Salicaceae	Native	Tree, Shrub
<i>Salix lucida</i> (S. <i>lasiandra</i> )	Yellow willow, Pacific willow	Salicaceae	Native	Tree
<i>Tamarix ramosissima</i>	Salt-cedar	Tamaricaceae	Non-native	Tree
<b>Shrubs and Subshrubs</b>				
<i>Ambrosia salsola</i>	Cheesebush	Asteraceae	Native	Shrub
<i>Artemisia tridentata</i> subsp. <i>tridentata</i>	Big sagebrush	Asteraceae	Native	Shrub
<i>Atriplex canescens</i>	Four-wing salt bush	Chenopodiaceae	Native	Shrub
<i>Baccharis salicifolia</i>	Mulefat	Asteraceae	Native	Shrub
<i>Ceanothus cuneatus</i>	Buckbrush	Rhamnaceae	Native	Shrub
<i>Ceanothus vestitus</i>	Mojave ceanothus	Rhamnaceae	Native	Shrub
<i>Encelia actoni</i>	Acton's brittlebush, Acton's encelia	Asteraceae	Native	Shrub
<i>Ephedra californica</i>	California joint-fir, ephedra	Ephedraceae	Native	Shrub
<i>Ericameria linearifolia</i>	Narrowleaved goldenbush	Asteraceae	Native	Shrub
<i>Ericameria nauseosa</i>	Rubber rabbitbrush	Asteraceae	Native	Shrub
<i>Eriogonum elongatum</i>	Wand buckwheat	Polygonaceae	Native	Shrub
<i>Eriogonum fasciculatum</i> var. <i>fasciculatum</i>	California buckwheat	Polygonaceae	Native	Shrub
<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	California buckwheat	Polygonaceae	Native	Shrub
<i>Eriophyllum confertiflorum</i>	Golden-yarrow	Asteraceae	Native	Subshrub
<i>Hesperoyucca whipplei</i>	Chaparral yucca	Agavaceae	Native	Shrub
<i>Lepidospartum squamatum</i>	Scalebroom	Asteraceae	Native	Shrub
<i>Lupinus albifrons</i>	Silver bush lupine	Fabaceae	Native	Shrub
<i>Lupinus excubitus</i> var. <i>austromontanus</i>	Grape soda lupine	Fabaceae	Native	Shrub
<i>Opuntia basilaris</i> var. <i>treleasei</i>	Bakersfield cactus	Cactaceae	Native	(succulent)
<i>Peritoma arborea</i>	Bladderpod	Cleomaceae	Native	Shrub
<i>Prunus ilicifolia</i>	Holly leaf cherry	Rosaceae	Native	Shrub
<i>Quercus john-tuckeri</i>	Tucker's oak	Fagaceae	Native	Shrub
<i>Quercus wislizeni</i> var. <i>frutescens</i>	Interior live oak (shrub form)	Fagaceae	Native	Shrub
<i>Rhamnus ilicifolia</i>	Hollyleaf redberry	Rhamnaceae	Native	Shrub
<i>Ribes californicum</i>	California gooseberry	Grossulariaceae	Native	Shrub
<i>Ribes quercetorum</i>	Oak gooseberry	Grossulariaceae	Native	Shrub
<i>Salix exigua</i>	Sandbar willow, narrow-leaved willow	Salicaceae	Native	Shrub
<i>Sambucus nigra</i> subsp. <i>caerulea</i>	Blue elderberry	Adoxaceae	Native	Shrub
<i>Toxicodendron diversilobum</i>	Poison-oak	Anacardiaceae	Native	Shrub



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<b>Herbaceous Species (annuals, biannuals, perennials, graminoids, ferns)</b>				
<i>Achillea millefolium</i>	Common yarrow	Asteraceae	Native	Herb
<i>Acmispon americanus</i>	American bird's foot trefoil	Fabaceae	Native	Herb
<i>Acmispon grandiflorus</i> var. <i>grandiflorus</i>	Chaparral lotus	Fabaceae	Native	Herb
<i>Acmispon procumbens</i>	Silky California broom	Fabaceae	Native	Herb
<i>Acmispon strigosus</i>	Strigose lotus	Fabaceae	Native	Herb
<i>Acmispon wrangelianus</i>	Chilean trefoil	Fabaceae	Native	Herb
<i>Allophyllum gilioides</i>	Dense false gilia	Polemoniaceae	Native	Herb
<i>Amaranthus albus</i>	Tumbleweed	Amaranthaceae	Non-native	Herb
<i>Ambrosia acanthicarpa</i>	Annual bursage	Asteraceae	Native	Herb
<i>Amsinckia intermedia</i>	Common fiddleneck	Boraginaceae	Native	Herb
<i>Amsinckia menziesii</i>	Small-flowered fiddleneck	Boraginaceae	Native	Herb
<i>Amsinckia tessellata</i>	Desert fiddleneck	Boraginaceae	Native	Herb
<i>Anemopsis californica</i>	Yerba mansa	Saururaceae	Native	Herb
<i>Apium graveolens</i>	Celery	Apiaceae	Non-native	Herb
<i>Argemone munita</i>	Prickly poppy	Papaveraceae	Native	Herb
<i>Artemisia douglasiana</i>	Mugwort	Asteraceae	Native	Herb
<i>Artemisia dracunculus</i>	Tarragon	Asteraceae	Native	Herb
<i>Asclepias californica</i>	California milkweed	Apocynaceae	Native	Herb
<i>Asclepias erosa</i>	Desert milkweed	Apocynaceae	Native	Herb
<i>Asclepias fascicularis</i>	Narrow-leaf milkweed	Apocynaceae	Native	Herb
<i>Astragalus didymocarpus</i>	Two-seeded milkvetch	Fabaceae	Native	Herb
<i>Astragalus douglasii</i> var. <i>douglasii</i>	Douglas' milkvetch	Fabaceae	Native	Herb
<i>Astragalus gambelianus</i>	Gambel milkvetch	Fabaceae	Native	Herb
<i>Astragalus lentiginosus</i> var. <i>variabilis</i>	Freckled milkvetch	Fabaceae	Native	Herb
<i>Astragalus oxyphysus</i>	Stanislaus milkvetch	Fabaceae	Native	Herb
<i>Astragalus trichopodus</i> var. <i>phoxus</i>	Santa Barbara milkvetch	Fabaceae	Native	Herb
<i>Avena barbata</i>	Slender wild oat	Poaceae	Non-native	Graminoid
<i>Avena fatua</i>	Wild oat	Poaceae	Non-native	Graminoid
<i>Balsamorhiza deltoidea</i>	Balsam root	Asteraceae	Native	Herb
<i>Bowlesia incana</i>	Hoary bowlesia	Apiaceae	Native	Herb
<i>Brassica tournefortii</i>	Saharan mustard	Brassicaceae	Non-native	Herb
<i>Brodiaea terrestris</i> ssp. <i>kernensis</i>	Kern brodiaea	Themidaceae	Native	Herb
<i>Bromus arenarius</i>	Australian chess	Poaceae	Non-native	Graminoid
<i>Bromus carinatus</i>	California brome	Poaceae	Native	Graminoid
<i>Bromus diandrus</i>	Ripgut grass	Poaceae	Non-native	Graminoid
<i>Bromus hordeaceus</i>	Soft chess	Poaceae	Non-native	Graminoid
<i>Bromus madritensis</i> ssp. <i>rubens</i>	Red brome	Poaceae	Non-native	Graminoid
<i>Bromus tectorum</i>	Cheat grass	Poaceae	Non-native	Graminoid
<i>Calandrinia menziesii</i>	Red maids	Portulacaceae	Native	Herb
<i>Calochortus venustus</i>	Butterfly mariposa lily	Liliaceae	Native	Herb
<i>Calystegia longipes</i>	Piute morning glory	Convolvulaceae	Native	Herb
<i>Calystegia occidentalis</i>	Bush morning glory	Convolvulaceae	Native	Herb
<i>Camissonia campestris</i> ssp. <i>campestris</i>	Field sun-cup	Onagraceae	Native	Herb



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<i>Camissonia kernensis</i> ssp. <i>gilmanii</i>	Gilman's evening primrose	Onagraceae	Native	Herb
<i>Capsella bursa pastoris</i>	Shepherd's purse	Brassicaceae	Non-native	Herb
<i>Carex praegracilis</i>	Slender sedge	Cyperaceae	Native	Graminoid
<i>Castilleja exserta</i> subsp. <i>exserta</i>	Purple owl's clover	Orobanchaceae	Native	Herb
<i>Centaurea melitensis</i>	Maltese star-thistle	Asteraceae	Non-native	Herb
<i>Centaurea solstitialis</i>	Yellow star-thistle	Asteraceae	Non-native	Herb
<i>Chaenactis glabriuscula</i>	Yellow pincushion	Asteraceae	Native	Herb
<i>Chaenactis watsonii</i>	Pincushion	Asteraceae	Native	Herb
<i>Chaenactis xantiana</i>	Fleshy pincushion	Asteraceae	Native	Herb
<i>Chenopodium californicum</i>	California goosefoot	Chenopodiaceae	Native	Herb
<i>Chenopodium murale</i>	Nettleleaf goosefoot	Chenopodiaceae	Non-native	Herb
<i>Chlorogalum pomeridianum</i>	Amole, soaproot	Agavaceae	Native	Herb
<i>Chorizanthe xanti</i> var. <i>xanti</i>	Xantu's spineflower	Polygonaceae	Native	Herb
<i>Cirsium occidentale</i>	Cobweb thistle	Asteraceae	Native	Herb
<i>Cirsium vulgare</i>	Bull thistle	Asteraceae	Non-native	Herb
<i>Clarkia botatae</i>	Punchbowl godetia	Onagraceae	Native	Herb
<i>Clarkia cylindrica</i>	Speckled clarkia	Onagraceae	Native	Herb
<i>Clarkia purpurea</i> subsp. <i>quadrivulnera</i>	Wine cups	Onagraceae	Native	Herb
<i>Clarkia unguiculata</i>	Elegant clarkia	Onagraceae	Native	Herb
<i>Claytonia rubra</i>	Red stemmed spring beauty	Montiaceae	Native	Herb
<i>Collinsia bartsiiifolia</i>	Chinese houses	Plantaginaceae	Native	Herb
<i>Collinsia heterophylla</i>	Purple Chinese houses	Plantaginaceae	Native	Herb
<i>Conium maculatum</i>	Poison-hemlock	Apiaceae	Non-native	Herb
<i>Corethrogyne filaginifolia</i>	California aster	Asteraceae	Native	Herb
<i>Croton californicus</i>	California croton	Euphorbiaceae	Native	Herb
<i>Croton setiger</i>	Doveweed, turkey-mullein	Euphorbiaceae	Native	Herb
<i>Cryptantha circumscissa</i>	Cushion cryptantha	Boraginaceae	Native	Herb
<i>Cryptantha flaccida</i>	Beaked cryptantha	Boraginaceae	Native	Herb
<i>Cryptantha microstachys</i>	Tejon cryptantha	Boraginaceae	Native	Herb
<i>Cryptantha nevadensis</i>	Nevada cryptantha	Boraginaceae	Native	Herb
<i>Cucurbita foetidissima</i>	Buffalo gourd	Cucurbitaceae	Native	Herb
<i>Cucurbita palmata</i>	Coyote melon	Cucurbitaceae	Native	Herb
<i>Cynodon dactylon</i>	Bermuda grass	Poaceae	Non-native	Graminoid
<i>Cyperus eragrostis</i>	Tall nutsedge	Cyperaceae	Native	Graminoid
<i>Datura wrightii</i>	Jimsonweed	Solanaceae	Native	Herb
<i>Daucus pusillus</i>	Rattlesnake weed, wild carrot	Apiaceae	Native	Herb
<i>Deinandra pallida</i>	Kern tarweed	Asteraceae	Native	Herb
<i>Descurainia pinnata</i>	Western tansy mustard	Brassicaceae	Native	Herb
<i>Descurainia sophia</i>	Flix weed	Brassicaceae	Non-native	Herb
<i>Dichelostemma capitatum</i>	Blue dicks	Themidaceae	Native	Herb
<b><i>Diplacus (Mimulus) pictus</i></b>	<b>Calico monkeyflower</b>	<b>Phrymaceae</b>	<b>Native</b>	<b>Herb</b>
<i>Distichlis spicata</i>	Salt grass	Poaceae	Native	Graminoid
<i>Duchesnea indica</i>	Mock-strawberry	Rosaceae	Non-native	Herb
<i>Dudleya lanceolata</i>	Lance-leaved dudleya	Crassulaceae	Native	Herb



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<i>Eleocharis parishii</i>	Parish's spikerush	Cyperaceae	Native	Graminoid
<i>Elymus multisetus</i>	Big squirrel tail	Poaceae	Native	Graminoid
<i>Elymus triticoides</i>	Alkali-rye	Poaceae	Native	Graminoid
<b><i>Eremalche kernensis</i></b>	<b>Kern mallow</b>	<b>Malvaceae</b>	<b>Native</b>	Herb
<i>Eriastrum densiflorum</i>	Giant eriastrum	Polemoniaceae	Native	Herb
<i>Erigeron canadensis</i>	Horseweed	Asteraceae	Native	Herb
<i>Eriogonum gracillimum</i>	Rose-and-white buckwheat	Polygonaceae	Native	Herb
<i>Eriogonum roseum</i>	Wild buckwheat	Polygonaceae	Native	Herb
<i>Erodium botrys</i>	Big heron bill	Geraniaceae	Non-native	Herb
<i>Erodium brachycarpum</i>	Foothill filaree	Geraniaceae	Non-native	Herb
<i>Erodium cicutarium</i>	Redstem filaree	Geraniaceae	Non-native	Herb
<i>Erysimum capitatum</i>	Western wall flower	Brassicaceae	Native	Herb
<i>Erythranthe guttata</i>	Seep monkeyflower	Phrymaceae	Native	Herb
<i>Eschscholzia caespitosa</i>	Foothill poppy	Papaveraceae	Native	Herb
<i>Eschscholzia californica</i>	California poppy	Papaveraceae	Native	Herb
<i>Euphorbia albomarginata</i>	Rattlesnake sandmat	Euphorbiaceae	Native	Herb
<i>Euphorbia ocellata</i>	Contura creek spurge	Euphorbiaceae	Native	Herb
<i>Festuca arundinacea</i>	Tall fescue	Poaceae	Non-native	Graminoid
<i>Festuca microstachys</i>	Small fescue	Poaceae	Native	Graminoid
<i>Festuca myuros</i>	Rattail fescue	Poaceae	Native	Graminoid
<i>Festuca perennis</i>	Perennial ryegrass	Poaceae	Non-native	Graminoid
<i>Galium aparine</i>	Cleavers	Rubiaceae	Native	Herb
<i>Gilia capitata</i> subsp. <i>abrotanifolia</i>	Bluehead gilia	Polemoniaceae	Native	Herb
<i>Gilia latiflora</i>	Broad-flowered gilia	Polemoniaceae	Native	Herb
<i>Helianthus annuus</i>	Common sunflower	Asteraceae	Native	Herb
<i>Heliotropium curassavicum</i>	Alkali heliotrope	Boraginaceae	Native	Herb
<i>Herniaria hirsuta</i>	Hairy rupturewort	Caryophyllaceae	Non-native	Herb
<i>Hirschfeldia incana</i>	Mediterranean hoary mustard	Brassicaceae	Non-native	Herb
<i>Hollisteria lanata</i>	False spineflower	Polygonaceae	Native	Herb
<i>Hordeum brachyantherum</i>	Meadow barley	Poaceae	Native	Graminoid
<i>Hordeum jubatum</i>	Fox tail barley	Poaceae	Native	Graminoid
<i>Hordeum marinum</i>	Mediterranean barley	Poaceae	Non-native	Graminoid
<i>Hordeum murinum</i>	Wall barley	Poaceae	Non-native	Graminoid
<i>Hypochaeris glabrata</i>	Smooth cat's ear	Asteraceae	Non-native	Herb
<i>Isocoma acradenia</i>	Alkali goldenbush	Asteraceae	Native	Herb
<i>Juncus balticus</i>	Baltic rush	Juncaceae	Native	Graminoid
<i>Juncus bufonius</i>	Toad rush	Juncaceae	Native	Graminoid
<i>Juncus mexicanus</i>	Mexican rush	Juncaceae	Native	Graminoid
<i>Juncus xiphioides</i>	Iris-leaved rush	Juncaceae	Native	Graminoid
<i>Lactuca serriola</i>	Prickly lettuce	Asteraceae	Non-native	Herb
<i>Lamarckia aurea</i>	Golden top grass	Poaceae	Non-native	Graminoid
<i>Lasthenia californica</i>	California goldfields	Asteraceae	Native	Herb



Appendix B. Observed Plant Species Along GKR Alignment  
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Scientific Name	Common Name	Family	Native or Non-Native	Form
<i>Lepidium chalepense</i>	Lens-podded hoary cress	Brassicaceae	Non-native	Herb
<i>Lepidium latifolium</i>	Perennial pepperweed	Brassicaceae	Non-native	Herb
<i>Lepidium nitidum</i>	Peppergrass	Brassicaceae	Native	Herb
<i>Leptosiphon bicolor</i>	True babystars	Polemoniaceae	Native	Herb
<i>Leptosiphon liniflorus</i>	Narrowflower flaxflower	Polemoniaceae	Native	Herb
<i>Linanthus dichotomus</i>	Evening snow	Polemoniaceae	Native	Herb
<i>Lithophragma parviflorum</i> var. <i>parviflorum</i>	Small-flowered woodland star	Saxifragaceae	Native	Herb
<i>Logfia filaginoides</i>	California cottonrose	Asteraceae	Native	Herb
<i>Lomatium dissectum</i> var. <i>multifidum</i>	Fern-leaved lomatium	Apiaceae	Native	Herb
<i>Lomatium mohavense</i>	Mojave wild parsley	Apiaceae	Native	Herb
<i>Lomatium vaginatum</i>	Broadsheathed parsley	Apiaceae	Native	Herb
<i>Lotus corniculatus</i>	Bird's foot trefoil	Fabaceae	Native	Herb
<i>Lotus strigosus</i>	Strigose lotus	Fabaceae	Native	Herb
<i>Lupinus benthamii</i>	Bentham lupine	Fabaceae	Native	Herb
<i>Lupinus bicolor</i>	Miniature lupine	Fabaceae	Native	Herb
<i>Lupinus microcarpus</i> var. <i>microcarpus</i>	Chick lupine	Fabaceae	Native	Herb
<i>Lupinus nanus</i>	Sky lupine	Fabaceae	Native	Herb
<i>Malva parviflora</i>	Cheeseweed	Malvaceae	Non-native	Herb
<i>Marah fabacea</i>	California man-root	Cucurbitaceae	Native	Herb
<i>Marrubium vulgare</i>	White horehound	Lamiaceae	Non-native	Herb
<i>Matricaria discoidea</i>	Pineapple weed	Asteraceae	Native	Herb
<i>Medicago polymorpha</i>	California burclover	Fabaceae	Non-native	Herb
<i>Melica californica</i>	California melic	Poaceae	Native	Graminoid
<i>Melilotus albus</i>	White sweetclover	Fabaceae	Non-native	Herb
<i>Melilotus indicus</i>	Yellow sweetclover	Fabaceae	Non-native	Herb
<i>Mentzelia pectinata</i>	San Joaquin blazing star	Loasaceae	Native	Herb
<i>Micropus californicus</i> var. <i>californicus</i>	Cottontop	Asteraceae	Native	Herb
<i>Microsteris gracilis</i>	Slender phlox	Polemoniaceae	Native	Herb
<i>Mirabilis laevis</i>	Desert wishbone bush	Nyctaginaceae	Native	Herb
<i>Mirabilis multiflora</i>	Colorado four o'clock	Nyctaginaceae	Native	Herb
<i>Muhlenbergia rigens</i>	Deer grass	Poaceae	Native	Graminoid
<i>Nasturtium officinale</i>	Water cress	Brassicaceae	Native	Herb
<i>Navarretia intertexta</i>	Interwoven navarretia	Polemoniaceae	Native	Herb
<b><i>Navarretia setiloba</i></b>	<b>Piute mountains navarretia</b>	<b>Polemoniaceae</b>	<b>Native</b>	<b>Herb</b>
<i>Nemophila menziesii</i>	Baby blue eyes	Boraginaceae	Native	Herb
<i>Nicotiana attenuata</i>	Coyote tobacco	Solanaceae	Native	Herb
<i>Nicotiana quadrivalvis</i>	Indian tobacco	Solanaceae	Native	Herb
<i>Packera breweri</i>	Brewer's ragwort	Asteraceae	Native	Herb
<i>Pectocarya heterocarpa</i>	Mixed-nut pectocarya	Boraginaceae	Native	Herb
<i>Pectocarya penicillata</i>	Northern pectocarya	Boraginaceae	Native	Herb
<i>Pellaea mucronata</i> var. <i>mucronata</i>	Bird's foot fern	Pteridaceae	Native	Herb
<b><i>Perideridia pringlei</i></b>	<b>Adobe yampah</b>	<b>Apiaceae</b>	<b>Native</b>	<b>Herb</b>
<i>Phacelia cicutaria</i> var. <i>hispida</i>	Caterpillar phacelia	Boraginaceae	Native	Herb
<i>Phacelia distans</i>	Common phacelia	Boraginaceae	Native	Herb



**Appendix B. Observed Plant Species Along GKR Alignment**  
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**Southern California Edison**



Scientific Name	Common Name	Family	Native or Non-Native	Form
<i>Phacelia imbricata</i> var. <i>imbricata</i>	Imbricate phacelia	Boraginaceae	Native	Herb
<i>Phacelia tanacetifolia</i>	Tansy-leaved phacelia	Boraginaceae	Native	Herb
<i>Phalaris minor</i>	Little-seeded canary grass	Poaceae	Non-native	Graminoid
<i>Plagiobothrys arizonicus</i>	Arizona popcorn flower	Boraginaceae	Native	Herb
<i>Plagiobothrys nothofulvus</i>	Rusty-haired popcorn flower	Boraginaceae	Native	Herb
<i>Plantago erecta</i>	California plantain	Plantaginaceae	Native	Herb
<i>Plantago major</i>	Common plantain	Plantaginaceae	Non-native	Herb
<i>Platystemon californicus</i>	Cream cups	Papaveraceae	Native	Herb
<i>Poa annua</i>	Annual blue grass	Poaceae	Non-native	Graminoid
<i>Poa bulbosa</i>	Bulbous bluegrass	Poaceae	Non-native	Graminoid
<i>Poa pratensis</i>	Kentucky bluegrass	Poaceae	Non-native	Graminoid
<i>Poa secunda</i> subsp. <i>secunda</i>	Onesided bluegrass	Poaceae	Native	Graminoid
<i>Polygonum aviculare</i>	Knotweed	Polygonaceae	Non-native	Herb
<i>Polypogon monspeliensis</i>	Rabbitsfoot grass	Poaceae	Non-native	Herb
<i>Primula clevelandii</i>	Shooting stars	Primulaceae	Native	Herb
<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed	Asteraceae	Non-native	Herb
<i>Pseudognaphalium stramineum</i>	Cottonbatting plant	Asteraceae	Native	Herb
<i>Pterostegia drymarioides</i>	Fairy mist	Polygonaceae	Native	Herb
<i>Rafinesquia californica</i>	California chicory	Asteraceae	Native	Herb
<i>Ranunculus californica</i>	California buttercup	Ranunculaceae	Native	Herb
<i>Ranunculus testiculatus</i>	Tubercled buttercup	Ranunculaceae	Non-native	Herb
<i>Rumex crispus</i>	Curly dock	Polygonaceae	Non-native	Herb
<i>Salsola tragus</i>	Russian-thistle	Chenopodiaceae	Non-native	Herb
<i>Salvia carduacea</i>	Thistle sage	Lamiaceae	Native	Herb
<i>Salvia columbariae</i>	Chia sage	Lamiaceae	Native	Herb
<i>Sanicula bipinnatifida</i>	Purple sanicle	Apiaceae	Native	Herb
<i>Schismus arabicus</i>	Mediterranean grass	Poaceae	Non-native	Graminoid
<i>Schoenoplectus acutus</i>	Hardstem bulrush	Cyperaceae	Native	Graminoid
<i>Schoenoplectus pungens</i>	Common threesquare	Cyperaceae	Native	Graminoid
<i>Scrophularia californica</i>	California figwort	Scrophulariaceae	Native	Herb
<i>Selaginella bigelovii</i>	Bigelow's moss fern	Selaginellaceae	Native	Herb
<i>Sidalcea sparsifolia</i>	Southern checkerbloom	Malvaceae	Native	Herb
<i>Silybum marianum</i>	Milk thistle	Asteraceae	Non-native	Herb
<i>Sisymbrium altissimum</i>	Tumble mustard	Brassicaceae	Non-native	Herb
<i>Sisymbrium irio</i>	London rocket	Brassicaceae	Non-native	Herb
<i>Sisymbrium orientale</i>	Indian hedge mustard	Brassicaceae	Non-native	Herb
<i>Sisyrinchium bellum</i>	Blue-eyed grass	Iridaceae	Native	Herb
<i>Solanum elaeagnifolium</i>	White-horse nettle	Solanaceae	Non-native	Herb
<i>Solidago confinis</i>	Southern goldenrod	Asteraceae	Native	Herb
<i>Sonchus asper</i>	Prickly sow-thistle	Asteraceae	Non-native	Herb
<i>Sonchus oleraceus</i>	Common sow-thistle	Asteraceae	Non-native	Herb
<i>Stephanomeria exigua</i>	Small wirelettuce	Asteraceae	Native	Herb
<i>Stipa cernua</i>	Nodding needle grass	Poaceae	Native	Graminoid
<i>Stipa miliacea</i> var. <i>miliacea</i>	Smilo grass	Poaceae	Non-native	Graminoid
<i>Stipa pulchra</i>	Purple needlegrass	Poaceae	Native	Graminoid
<i>Stipa speciosa</i>	Desert needle grass	Poaceae	Native	Graminoid



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Scientific Name	Common Name	Family	Native or Non-Native	Form
<i>Thysanocarpus curvipes</i>	Fringe pod	Brassicaceae	Native	Herb
<i>Tragopogon dubius</i>	Yellow salsify	Asteraceae	Non-native	Herb
<i>Tribulus terrestris</i>	Puncture vine	Zygophyllaceae	Non-native	Herb
<i>Trichostema lanceolatum</i>	Vinegar weed	Lamiaceae	Native	Herb
<b><i>Trichostema ovatum</i></b>	<b>San Joaquin bluecurls</b>	<b>Lamiaceae</b>	<b>Native</b>	<b>Herb</b>
<i>Trifolium microcephalum</i>	Small-head clover	Fabaceae	Native	Herb
<i>Triteleia ixioides</i>	Golden brodiaea	Themidaceae	Native	Herb
<i>Triteleia laxa</i>	Ithuriel's spear	Themidaceae	Native	Herb
<i>Triticum aestivum</i>	Common wheat	Poaceae	Non-native	Graminoid
<i>Uropappus lindleyi</i>	Silver puffs	Asteraceae	Native	Herb
<i>Urtica dioica</i>	Stinging nettle	Urticaceae	Native	Herb
<i>Urtica dioica</i> subsp. <i>holosericea</i>	Giant creek nettle	Urticaceae	Native	Herb
<i>Urtica urens</i>	Dwarf nettle	Urticaceae	Non-native	Herb
<i>Veronica anagallis-aquatica</i>	Water speedwell	Plantaginaceae	Non-native	Herb
<i>Viola pinetorum</i> subsp. <i>pinetorum</i>	Goosefoot yellow violet	Violaceae	Native	Herb
<i>Xanthium spinosum</i>	Spiny cocklebur	Asteraceae	Native	Herb
<i>Xanthium strumarium</i>	Cocklebur	Asteraceae	Native	Herb

**Sensitive species in Bold**



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# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Aesculus californica</u> Woodland Alliance Association <u>Aesculus californica</u> Association
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			circle: Relevé or RA
Database #:	Date:	Name of recorder:	
<u>BVC 0266</u>	<u>4/5/2017</u>	<u>MONITO, RICHARD</u>	
		Other surveyors:	<u>PAULETTE, MICHAEL CARY</u>
	Location Name: <u>TETON, TURN, KERN RIVER</u>		
GPS name:		For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side	
UTME <u>3 2 6 3 5 6</u> UTMN <u>3 8 6 1 0 2 6</u>		Zone: <u>11</u> NAD83 GPS error: ft./ m./ PDOP ____	
Decimal degrees: LAT <u>%&amp;#x2191; (*) #S (&amp;#x2191; +</u>		LONG <u>Z##*Z+++&amp;#x2191; SS</u>	
GPS within stand? <u>Yes</u> / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID ____ Projected UTM: UTMN ____			
Camera Name:		Cardinal photos at ID point:	
Other photos: <u>Fullerum, GPS</u>			
Stand Size (acres): <1, <u>(1-5)</u> , >5   Plot Size (m²): 100 / ____   Plot Shape ____ x ____ m   RA Radius ____ m			
Exposure, Actual °: <u>NE</u> NW SE SW Flat Variable   Steepness, Actual °: ____ 0° 1-5° >5-25° <u>&gt;25</u>			
Topography: Macro: top <u>upper</u> <u>mid</u> lower bottom   Micro: <u>convex</u> flat concave undulating			
Geology code: <u>GRAN</u> Soil Texture code: <u>COLS</u>   <u>Upland</u> or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H2O: <u>0</u> BA Stems: <u>70</u> Litter: <u>0</u> Bedrock: <u>0</u> Boulder: <u>10</u> Stone: <u>0</u> Cobble: <u>0</u> Gravel: <u>0</u> Fines: <u>10</u> =100%			
% Current year bioturbation ____ Past bioturbation present? Yes / <u>No</u>   % Hoof punch ____			
Fire evidence: <u>Yes</u> / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>EVIDENCE OF PAST FIRE ON RIDGETOP, BUT NOT HAVE AFFECTED SLOPE VEGETATION. NOTED AS UNDISTURBED</u>			
Disturbance code / Intensity (L,M,H): <u>H</u> / <u>L</u> / <u>T/L</u> / ____ / ____ / ____ "Other" ____			
II. HABITAT DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: <u>1</u> (<2ft. stem ht.), <u>2</u> (2-10ft. ht.), <u>3</u> (10-20ft. ht.), <u>4</u> (>20ft. ht.)			
Desert Palm/Joshua Tree: <u>1</u> (<1.5" base diameter), <u>2</u> (1.5-6" diam.), <u>3</u> (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <u>AESCULUS CALIFORNICA WOODLAND</u>			
Field-assessed Association name (optional): <u>Aesculus californica</u> Association			
Adjacent Alliances/direction: <u>SALIX LAEVIGATA</u> / <u>E</u> / <u>QUERCUS BERBERIC</u> / <u>W</u>			
Confidence in Alliance identification: L M <u>(H)</u> Explain: ____			
Phenology (E,P,L): Herb Shrub Tree Other identification or mapping information: ____			



(Revised April 28, 2016)

SPECIES SHEET

% NonVasc cover: 40 Total % Vasc Veg cover: 60

**Height Class** - Conifer tree / Hardwood tree: 15 Regenerating Tree:      Shrub:      Herbaceous: 1

Height classes: 1= $\leq 1/2$ m, 2= $1/2-1$ m, 3= $1-2$ m, 4= $2-5$ m, 5= $5-10$ m, 6= $10-15$ m, 7= $15-20$ m, 8= $20-35$ m, 9= $35-50$ m, 10= $>50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:**



(Revised April 28, 2016)

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## SPECIES SHEET



**Combined Vegetation Rapid Assessment and Relevé Field Form**  
(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Platanus racemosa - Quercus agrifolia Woodland Alliance</u> Association <u>Platanus racemosa / Salix laevigata / Salix lasiolepis Association</u>
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			
Database #: <u>0518049N</u>	Date: <u>5/14/17</u>	Name of recorder: <u>Cynthia Nicely</u>	
Location Name: <u>Kern</u>		Other surveyors:	
GPS name: <u>70700</u> For Relevé only: Bearing °, left axis at 1D point ____ of Long / Short side			
UTME _____ UTMN _____ Zone: 11 NAD83 GPS error: ft./ m./ PDOP _____			
Decimal degrees: LAT <u>35.45059432</u> LONG <u>118.78241010</u>			
GPS within stand? <u>(Yes)</u> / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record. Base point ID _____ Projected UTM: UTME _____ UTMN _____			
Camera Name: <u>glen</u> Cardinal photos at 1D point: <u>N, E, S, W</u>			
Other photos:			
Stand Size (acres): <1, 1-5, <u>&gt;5</u>   Plot Size (m²): <u>100</u>   Plot Shape ____ x ____ m   RA Radius <u>30</u> m			
Exposure, Actual °: <u>135</u> NE NW <u>(SE)</u> SW Flat Variable   Steepness, Actual °: <u>NA</u> 0° <u>(1-5°)</u> > 5-25° > 25			
Topography: Macro: top upper mid lower <u>bottom</u>   Micro: convex flat <u>concave</u> undulating			
Geology code: _____ Soil Texture code: _____   Upland or <u>Wetland/Riparian</u> (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud) <u>72</u>			
H:0: <u>450</u> BA Stems: <u>2</u> Litter: <u>1</u> Bedrock: <u>5</u> Boulder: <u>5</u> Stone: <u>5</u> Cobble: <u>5</u> Gravel: <u>5</u> Fines: <u>33</u> = 100%			
% Current year bioturbation <u>0</u> Past bioturbation present? Yes / <u>(No)</u>   % Hoof punch <u>0</u>			
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments:  <u>Riparian area (Kern River) adjacent to road (Hwy 178)</u>			
Disturbance code / Intensity (L,M,H): _____ "Other" _____			
II. HABITAT DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, <60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: <u>1</u> (<2ft. stem ht.), <u>2</u> (2-10ft. ht.), <u>3</u> (10-20ft. ht.), <u>4</u> (>20ft. ht.)			
Desert Palm/Joshua Tree: <u>1</u> (<1.5" base diameter), <u>2</u> (1.5-6" diam.), <u>3</u> (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name <u>Platanus racemosa - Quercus agrifolia Woodland Alliance</u>			
Field-assessed Association name (optional): <u>Platanus racemosa - Salix laevigata / Salix lasiolepis -</u>			
Adjacent Alliances/direction: <u>Baccharis salicifolia Association</u>			
Confidence in Alliance identification: L M <u>(H)</u> Explain: <u>CMV used in field</u>			
Phenology (E,P,L): Herb <u>P</u> Shrub <u>P</u> Tree <u>P</u> Other identification or mapping information:			



Database #: 0518046JN

SPECIES SHEET

V. VEGETATION DESCRIPTION:

% NonVase cover: 25 Total % Vase Veg cover: 25

% Cover - Conifer tree / Hardwood tree: 1 15 Regenerating Tree: — Shrub: 5 Herbaceous: 5

Height Class - Conifer tree / Hardwood tree: — 5 Regenerating Tree: — Shrub: 2 Herbaceous: 1

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Stratum categories: T=Tree, A=Sapling, E=Seedling, S=Shrub, H=Herb, N=Non-vascular

% Cover Intervals for reference: r=trace, +=<1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Stratum	Species	% cover	C	Final species determination
T	<i>Salix laevigata</i>	20		<i>Salix laevigata</i>
T	<i>Platanus occidentalis</i>	5		
S	<i>Encelia actonii</i>	1		
S	<i>Baccharis salicifolia</i>	4		
H	<i>Dahua angustifolia</i>	<1		
H	<i>Hirschfeldia incana</i>	<1		
S	<i>Salix lasiolepis</i>	5		
H	<i>Cirsium vulgare</i>	<1		
H	<i>Bromus madritensis nens</i>	2		
H	<i>Bromus diandrus</i>	1		
H	<i>A</i>			

Unusual species:



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

*Populus fremontii* - *Fraxinus velutina* - *Salix gooddingii*

Forest Alliance

For Office Use:	Final database #:	Final vegetation type:	Alliance:	Association:
		<i>Populus fremontii</i> - <i>Salix laevigata</i> - <i>Salix gooddingii</i>		
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>				
Database #:	Date:	Name of recorder:	circle: Relevé or RA	
BVC0609	4/5/17	Ricardo Montijo		
	UID:	Other surveyors:		
		Cynthia Nicely, Mary Campbell		
		Location Name:		
		Tejon Ranch, Kern alignment		
GPS name: unknown		For Relevé only: Bearing°, left axis at ID point of Long / Short side		
UTME	UTMN	Zone: 11 NAD83 GPS error: ft./ m./ PDOP		
Decimal degrees: LAT 34.875445		LONG -118.89381		
GPS within stand? Yes / No		If No, cite from GPS to stand: distance (m) bearing° inclination°		
and record: Base point ID		Projected UTM: UTME UTMN		
Camera Name: unknown		Cardinal photos at ID point:		
Other photos:				
Stand Size (acres): 1, 1-5, >5		Plot Area (m²): 100 / Plot Dimensions x m RA Radius m		
Exposure, Actual°: NE NW SE SW Flat Variable		Steepness, Actual°: 0° 1-5° >5-25° >25		
Topography: Macro: top upper mid lower bottom		Micro: convex flat concave undulating		
Geology code: Soil Texture code:		Upland or Wetland/Riparian (circle one)		
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)				
H2O: BA Stems: Litter: Bedrock: Boulder: Stone: Cobble: Gravel: Fines: =100%				
% Current year bioturbation Past bioturbation present? Yes / No		% Hoof punch		
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.				
Site history, stand age, comments:				
updated field form to determine Association:				
used photos & data from				
2nd survey in 2018/2019				
no surface info.				
Disturbance code / Intensity (L,M,H): / / / "Other" /				
<b>II. HABITAT DESCRIPTION</b>				
Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)				
Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)				
Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.)				
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)				
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)				
<b>III. INTERPRETATION OF STAND</b>				
Field-assessed vegetation Alliance name: <i>Populus fremontii</i> - <i>Fraxinus velutina</i> - <i>Salix gooddingii</i> Forest Alliance				
Field-assessed Association name (optional): <i>Populus fremontii</i> - <i>Salix laevigata</i> , <i>lasiolepis</i> , <i>lucida</i>				
Adjacent Alliances/direction: / / /				
Confidence in Alliance identification: L M H Explain:				
Phenology (E,P,L): Herb / Shrub P Tree P Other identification or mapping information:				



(Revised March 27, 2018)

BVL 0609

## SPECIES SHEET

#### IV. VEGETATION DESCRIPTION

% NonVasc cover:      Total % Vasc Veg cover: 100

**% Cover -** Conifer tree / Hardwood tree: 40 Regenerating Tree:      Shrub: 10 Herbaceous:     

**Height Class** - Conifer tree / Hardwood tree: \_\_\_\_\_ / \_\_\_\_\_ **Regenerating Tree:** \_\_\_\_\_ **Shrub:** \_\_\_\_\_ **Herbaceous:** \_\_\_\_\_

*Height classes:* 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

[illegible]

**Unusual species:**



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

*Populus fremontii* - *Fraxinus velutina* - *Salix gooddingii*

For Office Use:	Final database #:	Final vegetation type:	Alliance: <u>Forest Alliance</u>
		Association:	<u><i>Populus fremontii</i> - <i>Salix lasiolepis</i> Association</u>
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Database #: <u>051503</u>	Date: <u>05-15-17</u>	Name of recorder: <u>Alyssa Taylor</u>	circle: Relevé or <u>(RA)</u>
Location Name: <u>Lebec, CA KERN 2.1</u>		Other surveyors:	
GPS name: <u>70706</u>		For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side	
UTME ____ UTMN ____		Zone: <u>11</u> NAD83 GPS error: ft./ m./ PDOP ____	
Decimal degrees: LAT <u>34° 83 23 46 31</u>		LONG <u>-118° 85 21 76 20</u>	
GPS within stand? Yes / No		If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____	
and record: Base point ID ____		Projected UTMs: UTME ____ UTMN ____	
Camera Name: <u>fulcrum</u>		Cardinal photos at ID point: <u>NESW</u>	
Other photos:			
Stand Size (acres): <1, 1-5, <u>&gt;5</u>		Plot Size (m²): 100 / ____ Plot Shape ____ x ____ m RA Radius <u>25</u> m	
Exposure, Actual °: ____ NE NW SE SW <u>Flat</u> Variable		Steepness, Actual °: ____ 0° <u>1-5°</u> > 5-25° > 25	
Topography: Macro: top upper mid lower <u>bottom</u>		Micro: convex <u>flat</u> concave undulating	
Geology code: ____ Soil Texture code: ____		Upland or Wetland/Riparian (circle one)	
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H2O: - BA Stems: <u>2</u> Litter: <u>20</u> Bedrock: - Boulder: - Stone: - Cobble: - Gravel: - Fines: <u>78</u> =100%			
% Current year bioturbation <u>0</u> Past bioturbation present? Yes / <u>No</u>		% Hoof punch ____	
Fire evidence: Yes / <u>No</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>SEE Alignment</u> <u>Grave</u> <u>Roads</u>			
Disturbance code / Intensity (L,M,H): <u>04 / L 05 / H 15 / L</u> / / "Other" / /			
<b>II. HABITAT DESCRIPTION</b>			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (>12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: <u>1</u> (<2ft. stem ht.), <u>2</u> (2-10ft. ht.), <u>3</u> (10-20ft. ht.), <u>4</u> (>20ft. ht.)			
Desert Palm/Joshua Tree: <u>1</u> (<1.5" base diameter), <u>2</u> (1.5-6" diam.), <u>3</u> (>6" diam.)			
<b>III. INTERPRETATION OF STAND</b>			
Field-assessed vegetation Alliance name: <u><i>Populus fremontii</i> - <i>Fraxinus velutina</i> - <i>Salix gooddingii</i> Forest Alliance</u>			
Field-assessed Association name (optional): <u><i>Populus fremontii</i> - <i>Salix lasiolepis</i> Association</u>			
Adjacent Alliances/direction: ____			
Confidence in Alliance identification: L M <u>H</u> Explain: <u>McV / Jepson</u>			
Phenology (E,P,L): Herb <u>♀</u> Shrub ____ Tree <u>E</u> Other identification or mapping information:			



(Revised April 28, 2016)

SPECIES SHEET

% NonVasc cover:      Total % Vasc Veg cover: 99

Height Class - Conifer tree / Hardwood tree: 17 Regenerating Tree:      Shrub: 2 Herbaceous: 1

Height classes: 1= $<1/2$ m, 2= $1/2$ -1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $>50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Unusual species: \_\_\_\_\_



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Quercus chrysolepis Forest Alliance</u> Association <u>Quercus chrysolepis Association</u>
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			circle: Relevé or <u>RA</u>
Database #:	Date:	Name of recorder:	
<u>051506</u>	<u>05.15.17</u>	<u>Alyssa Taylor</u>	
		Other surveyors:	<u>Cecile Shohet</u>
	Location Name: <u>Lebec, CA Kern 21</u>		
GPS name: <u>70700</u>		For Relevé only: Bearing°, left axis at ID point ____ of <u>Long</u> / <u>Short</u> side	
UTME _____		UTMN _____ Zone: <u>11</u> NAD83 GPS error: ft./ m./ PDOP _____	
Decimal degrees: LAT <u>34° 50' 69.54"</u>		LONG <u>-118° 53' 22.99"</u>	
GPS within stand? <u>Yes</u> No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID _____ Projected UTM's: UTME _____ UTMN _____			
Camera Name: <u>fulcrum</u> Cardinal photos at ID point: <u>NESW</u>			
Other photos: _____			
Stand Size (acres): <1, 1-5, <u>&gt;5</u>   Plot Size (m²): 100 / _____   Plot Shape ____ x ____ m   RA Radius <u>25</u> m			
Exposure, Actual °: <u>340</u> <u>NE</u> NW SE SW Flat Variable   Steepness, Actual °: ____ 0° 1-5° > 5-25° > 25			
Topography: Macro: top upper mid lower <u>bottom</u>   Micro: convex flat concave <u>undulating</u>			
Geology code: <u>SETU</u> Soil Texture code: <u>MESP</u>   Upland or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H <sub>2</sub> O: <u>BA</u> Stems: <u>2</u> Litter: <u>25</u> Bedrock: <u>Boulder</u> : <u>Stone</u> : <u>Cobble</u> : <u>Gravel</u> : <u>5</u> Fines: <u>77</u> =100%			
% Current year bioturbation _____ Past bioturbation present? Yes / No   % Hoof punch _____			
Fire evidence: Yes <u>No</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>SE alignment</u> <u>Grazing</u> <u>Roads</u>			
Disturbance code / Intensity (L,M,H): <u>04/L</u> <u>05/H</u> <u>15/M</u> / / / "Other" _____ /			
II. HABITAT DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: <u>1</u> (<2ft. stem ht.), <u>2</u> (2-10ft. ht.), <u>3</u> (10-20ft. ht.), <u>4</u> (>20ft. ht.)			
Desert Palm/Joshua Tree: <u>1</u> (<1.5" base diameter), <u>2</u> (1.5-6" diam.), <u>3</u> (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <u>Quercus chrysolepis (tree) Forest Alliance</u>			
Field-assessed Association name (optional): <u>Quercus chrysolepis Association</u>			
Adjacent Alliances/direction: _____			
Confidence in Alliance identification: L M <u>H</u> Explain: <u>McV / Jepsen</u>			
Phenology (E,P,L): Herb <u>P</u> Shrub _____ Tree <u>E</u> Other identification or mapping information: _____			



(Revised April 28, 2016)

SPECIES SHEET

% NonVasc cover: \_\_\_\_\_ Total % Vasc Veg cover: 66

**Height Class** - Conifer tree / Hardwood tree: 18' Regenerating Tree:        Shrub:        Herbaceous: 1

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Unusual species: \_\_\_\_\_



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Quercus douglasii</u> Association <u>Quercus douglasii - Aesculus californica / grass</u>
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Database #: <u>533</u> <u>BVCO945</u>	Date: <u>5/22/18</u>	Name of recorder: <u>Sarah Termondt</u>	circle: Relevé or RA
UID:		Other surveyors: <u>Mary Carroll Cynthia Nicely</u>	
		Location Name: <u>Grapevine Valley, Kern alignment</u>	
GPS name: <u>Collector App</u>		For Relevé only: Bearing°, left axis at ID point _____ of Long / Short side	
UTME _____ UTMN _____		Zone: 11 NAD83 GPS error: ft./m./PDOP _____	
Decimal degrees: LAT <u>34.906775</u>		LONG <u>118.921307</u>	
GPS within stand? <input checked="" type="checkbox"/> Yes / No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____			
and record: Base point ID _____ Projected UTM: UTME _____ UTMN _____			
Camera Name: <u>Collector</u> Cardinal photos at ID point: _____			
Other photos: _____			
Stand Size (acres): <input checked="" type="checkbox"/> <1, <input type="checkbox"/> 1-5, <input type="checkbox"/> >5   Plot Area (m²): 100 / _____   Plot Dimensions _____ x _____ m   RA Radius _____ m			
Exposure, Actual °: _____ NE NW <input checked="" type="checkbox"/> SE SW Flat Variable   Steepness, Actual °: _____ 0° <input checked="" type="checkbox"/> 1-5° > 5-25° > 25			
Topography: Macro: <input checked="" type="checkbox"/> top upper mid lower bottom   Micro: <input checked="" type="checkbox"/> convex flat concave undulating			
Geology code: _____ Soil Texture code: _____   <input checked="" type="checkbox"/> Upland or Wetland/Riparian (circle one)			
% Surface cover: _____ (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H <sub>2</sub> O: <input type="checkbox"/> BA Stems: <u>3</u> Litter: <u>3</u> Bedrock: _____ Boulder: _____ Stone: _____ Cobble: _____ Gravel: _____ Fines: <u>94</u> =100%			
% Current year bioturbation <input checked="" type="checkbox"/> Past bioturbation present? Yes / <input checked="" type="checkbox"/> No   % Hoof punch <input checked="" type="checkbox"/>			
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments:  <div style="text-align: center;"> <p>Form updated from original; desk top determination made for Association using R photos</p> </div>			
Disturbance code / Intensity (L,M,H): _____ / _____ / _____ / _____ "Other" _____			
<b>II. HABITAT DESCRIPTION</b>			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
<b>III. INTERPRETATION OF STAND</b>			
Field-assessed vegetation Alliance name: <u>Quercus douglasii</u>			
Field-assessed Association name (optional): <u>Quercus douglasii - Aesculus californica / grass</u>			
Adjacent Alliances/direction: _____ / _____			
Confidence in Alliance identification: L M H Explain: _____			
Phenology (E,P,L): Herb <u>P</u> Shrub <u>NA</u> Tree <u>P</u> Other identification or mapping information: _____			



(Revised March 27, 2018)

SPECIES SHEET

% NonVasc cover: \_\_\_\_\_ Total % Vasc Veg cover: 130

**Height Class** - Conifer tree / Hardwood tree: 5 Regenerating Tree:    Shrub: 2 Herbaceous: 1

**Height classes:** 1= $<1/2$ m, 2= $1/2$ -1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $>50$ m

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:**



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Quercus douglasii Woodland</u> Association <u>Quercus douglasii / Bromus spp.</u>
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			
Database #: <u>051701JN</u>	Date: <u>5/17/17</u>	Name of recorder: <u>Cynthia Nively</u>	circle: Relevé or <u>RA</u>
Location Name:		Other surveyors: <u>J. N. -</u>	
GPS name: <u>10706</u>	For Relevé only: Bearing°, left axis at ID point _____ of <u>Long</u> / <u>Short</u> side		
UTME _____	UTMN _____	Zone: <u>11</u> NAD83 GPS error: ft./ m./ PDOP _____	
Decimal degrees: LAT <u>35.12618319</u>		LONG <u>118.72023348</u>	
GPS within stand? <u>Yes</u> <input checked="" type="checkbox"/> No <input type="checkbox"/>	If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____		
and record Base point ID _____	Projected UTM: UTME _____ UTMN _____		
Camera Name: <u>Film</u>	Cardinal photos at ID point: <u>N, E, S, W</u>		
Other photos:			
Stand Size (acres): <1, 1-5, <u>&gt;5</u>	Plot Size (m²): <u>100</u>	Plot Shape _____ x _____ m	RA Radius <u>30</u> m
Exposure, Actual °: <u>90</u> NE NW SE SW Flat Variable		Steepness, Actual °: <u>NA</u> 0° <u>1-5°</u> > 5-25° > 25	
Topography: Macro: top <u>upper</u> mid lower bottom	Micro: <u>convex</u> flat concave undulating		
Geology code: _____	Soil Texture code: _____	Apland or Wetland/Riparian (circle one)	
% Surface cover: _____	(Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)		
H2O: <u>0</u> BA Stems: <u>2</u> Litter: <u>1</u> Bedrock: <u>0</u> Boulder: <u>0</u> Stone: <u>0</u> Cobble: <u>0</u> Gravel: <u>0</u> Fines: <u>97</u> = 100%			
% Current year bioturbation <u>2</u>	Past bioturbation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
% Hoof punch <u>37</u>			
Fire evidence: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>4E Alignment spur road</u>			
Disturbance code / Intensity (L,M,H): <u>05/11/15/1L</u> / / / "Other" /			
II. HABITAT DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: <u>1</u> (<2ft. stem ht.), <u>2</u> (2-10ft. ht.), <u>3</u> (10-20ft. ht.), <u>4</u> (>20ft. ht.)			
Desert Palm/Joshua Tree: <u>1</u> (<1.5" base diameter), <u>2</u> (1.5-6" diam), <u>3</u> (>6" diam)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <u>Quercus douglasii Woodland Alliance</u>			
Field-assessed Association name (optional): <u>Quercus douglasii / Bromus spp.</u>			
Adjacent Alliances/direction: _____			
Confidence in Alliance identification: L M <u>H</u> Explain: <u>CMV in Field</u>			
Phenology (E,P,L): Herb <u>P</u> Shrub <u>P</u> Tree <u>P</u> Other identification or mapping information:			



Database #: 051702CTN

SPECIES SHEET

% Cover - Conifer tree / Hardwood tree: — / 35      % NonVase cover: 0      Total % Vase Veg cover: 65  
 Height Class - Conifer tree / Hardwood tree: — / 5      Regenerating Tree: —      Shrub: 5      Herbaceous: 40  
 Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m  
 Regenerating Tree: —      Shrub: 2      Herbaceous: 1

% NonVasc cover: 0 Total % Vasc Veg cover: 65

% Cover - Conifer tree / Hardwood tree:  $\frac{1}{35}$  Regenerating Tree:  $\frac{1}{2}$  Shrub: 5 Herbaceous: 40

Height Class - Conifer tree / Hardwood tree: — / 5 Regenerating Tree: — Shrub: 2 Herbaceous: 1

Height classes: 1= $\leq 1/2$ m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $\geq 50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

[illegible]

Unusual species:



Quercus douglasii Woodland Alliance

Quercus douglasii / Eriogonum fasciculatum / herbaceous Association

(14)

Eriogonum fasciculatum

GPS waypoint #: 14 GPS name: Juno GPS datum: (NAD 83) 83 Zone: 10S / 10T (11S) (circle one)

UTM field reading: UTME 35.105805 UTMN -118.680386 GPS Error:  $\pm$  4 ft/(m)

Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance \_\_\_\_\_ (in meters) and bearing \_\_\_\_\_ (degrees)

Elevation: 4515 (ft) m Photograph #'s:

Geology code: GRAW Soil Texture code: COLS | Upland or Wetland/Riparian (circle one)  
Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating (circle one)

% Surface cover: Lg rock: 40 Sm rock: 20 Bare/Fine: 40 Litter: \_\_\_\_\_ BA Stems: \_\_\_\_\_ Water: \_\_\_\_\_ =sums to 100%  
(>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud)

Slope exposure, Actual °: \_\_\_\_\_ General: NE NW SE SW Flat Variable /All (circle one)

Slope steepness, Actual °: \_\_\_\_\_ General: 0° 1-5° 5-25° >25° (circle one)

Size of stand: <1 acre \_\_\_\_\_ 1-5 acres \_\_\_\_\_ >5 acres \_\_\_\_\_ Plot: Yes / No If yes, denote size: 100 m<sup>2</sup> / 400m<sup>2</sup> / 1000 m<sup>2</sup> / Other

Site history, stand age, and comments: SITE APPEARS UNDISTURBED

Type/ Level of disturbance codes: H1 G3 L \_\_\_\_\_ "Other"

II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.: QUERCUS DOUGLASII - INFREQUENT

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam), 3 (>6" diam.) % NonVasc cover: 60 Total % Veg cover: 40

% Cover -Overstory Tree Conifer/Hardwood: \_\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_\_ Shrub: 20 Herbaceous: 40

Height Class - Overstory Conifer/Hardwood: \_\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_\_ Shrub: 02 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m



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Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%					
Strata	Species	% cover	Strata	Species	% cover
S	ERIOGONUM FAS.	30			
T	QUERCUS DOUGLASII	3			
S	RIBES	5			
H	BROMUS RUBENS	30			
N	ARCTOSTAPHYLOS	20			

Unusual species: \_\_\_\_\_

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Quercus douglasii Woodland Alliance

Field-assessed association name (optional): Quercus douglasii / Eriogonum fasciculatum / herbaceous Association

Adjacent alliances: \_\_\_\_\_

Confidence in alliance identification: L M ☒ H Explain: Jepson / MCV

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_



# CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Version Revised Feb 21, 2007)

1

For Office Use:	Final database #:	Final vegetation type name:	Alliance <u>Quercus douglasii Woodland</u> Association <u>Quercus douglasii Association</u>
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## I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo #:	Date:	Name(s) of surveyors:
		4/10/2012	MONTE, CADY, LOUBET

GPS waypoint #: 1 GPS name: JUNO GPS datum: (e.g. NAD 83) NAD83 Zone: 10S / 10T / 11S (circle one)  
Latitude: 35.13019489902572 Longitude: -118.7343374836627

UTM field reading: UTM 341481.7 UTMN 3888857-8 GPS Error:  $\pm$  13 ft (m)

Is GPS within stand? Yes No If No, cite from GPS point to stand, the distance \_\_\_\_\_ (in meters) and bearing \_\_\_\_\_ (degrees)

Elevation: 962 ft (m) Photograph #'s: \_\_\_\_\_

Geology code: GRAN Soil Texture code: CLAY | Upland or Wetland/Riparian (circle one)  
Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating (circle one)

% Surface cover: Lg rock: 5 Sm rock: 10 Bare/Fine: 85 Litter: \_\_\_\_\_ BA Stems: \_\_\_\_\_ Water: \_\_\_\_\_ =sums to 100%  
( $>25$  cm diam) (2mm-25 cm diam) ( $<2$  mm, Incl sand, mud)

Slope exposure, Actual  $^{\circ}$ : \_\_\_\_\_ General: NE NW SE SW Flat Variable / All (circle one)

Slope steepness, Actual  $^{\circ}$ : \_\_\_\_\_ General:  $0^{\circ}$   $1-5^{\circ}$   $5-25^{\circ}$   $>25^{\circ}$  (circle one)

Size of stand:  $<1$  acre  $1-5$  acres  $>5$  acres X Plot: Yes / No If yes, denote size:  $100\text{ m}^2$  /  $400\text{ m}^2$  /  $1000\text{ m}^2$  / Other

Site history, stand age, and comments: GRAZED

Type/ Level of disturbance codes: T / L H / M \_\_\_\_\_ "Other"

## II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 ( $<1$ " dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 ( $>24$ " dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.: QUERCUS DOUGLASII

Shrub: S1 seedling ( $<3$  yr. old), S2 young ( $<1\%$  dead), S3 mature (1-25% dead), S4 decadent ( $>25\%$  dead)

Herbaceous: H1 ( $<12$ " plant ht.), H2 ( $>12$ " ht.) Desert Riparian Tree/Shrub: 1 ( $<2$ ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 ( $>20$ ft. ht.)

Desert Palm/Joshua Tree: 1 ( $<1.5$ " base diameter), 2 (1.5-6" diam.), 3 ( $>6$ " diam.) % NonVase cover: \_\_\_\_\_ Total % Veg cover: \_\_\_\_\_



Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
T	QUERCUS DOUGLASII	30			
T	QUERCUS LOBATA	2			
T	QUERCUS WISLIZENII	2			
H	CRYPTANTHA FLACCIDA	5			
H	BRAUNSMADRIENSIS REP.	50			
H	AVENA BARBATA	10			
H	HORDEUM MARINUM	20			

Unusual species: \_\_\_\_\_

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: QUERCUS DOUGLASII woodland Alliance

Field-assessed association name (optional): Quercus douglasii Association

Adjacent alliances: \_\_\_\_\_

Confidence in alliance identification: L M ☒ H Explain: Jeffrey / MCV

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? ☒ Yes ☐ No If Yes, What has changed?

Polygon is more than one type: (Yes, ☒ No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_



# CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Version Revised Feb 21, 2007)

3

3c

For Office Use:	Final database #:	Final vegetation type name:	Alliance <u>Quercus douglasii woodlands alliance</u> Association <u>Quercus douglasii / Bromus spp. Association</u>
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## I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo #:	Date: <u>4/10/17</u>	Name(s) of surveyors: <u>MONTICO, CAOY LOUBET</u>
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GPS waypoint #: 3 GPS name: Juno GPS datum: (e.g. NAD 83) NAD83 Zone: 10S / 10T (11S) (circle one)

Latitude: 35.12783933601319 Longitude: -118.72686958646194

UTM field reading: UTM 342 657.65 UTMN 3888584.7 GPS Error:  $\pm$  2 ft/m (m)

Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance \_\_\_\_\_ (in meters) and bearing \_\_\_\_\_ (degrees)

Elevation: 38 ft/m (m) Photograph #'s: \_\_\_\_\_

Geology code: GAAN Soil Texture code: CLLS | Upland or Wetland/Riparian (circle one)  
Topography: Macro: top upper mid lower (bottom) | Micro: convex flat concave (undulating) (circle one)

% Surface cover: Lg rock: 10 Sm rock: 2 Bare/Fine: 88 Litter: \_\_\_\_\_ BA Stems: \_\_\_\_\_ Water: \_\_\_\_\_ =sums to 100%  
(>25 cm diam) (2mm-25 cm diam) (<2 mm, incl sand, mud)

Slope exposure, Actual °: \_\_\_\_\_ General: NE NW SE SW Flat (Variable / All) (circle one)

Slope steepness, Actual °: \_\_\_\_\_ General: 0° 1-5° (5-25°) > 25° (circle one)

Size of stand: <1 acre \_\_\_\_\_ 1-5 acres \_\_\_\_\_ >5 acres X Plot: Yes / No If yes, denote size: 100 m<sup>2</sup> / 400m<sup>2</sup> / 1000 m<sup>2</sup> / Other

Site history, stand age, and comments: GRAZING IN 1950s

Type/ Level of disturbance codes: T 1 L S I E H I M \_\_\_\_\_ "Other" \_\_\_\_\_

## II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), (T3) (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.: \_\_\_\_\_

Shrub: S1 seedling (<3 yr. old), (S2) young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: \_\_\_\_\_ Total % Veg cover: \_\_\_\_\_



% Cover -Overstory Tree Conifer/Hardwood: 130 Understory tree-Tall shrub: 5 Shrub: 5 Herbaceous: 65

Height Class - Overstory Conifer/Hardwood: 14 Understory tree-Tall shrub: 1 Shrub: 1 Herbaceous: 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
T	QUERCUS DOUGLASII	30			
S	ERIOCHLOA FASC.	5			
H	BROMUS MAURITENSIS RUBEN	60			

Unusual species: \_\_\_\_\_

III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: QUERCUS DOUGLASII wooded Alliance

Field-assessed association name (optional): Quercus douglasii / Bromus spp. Association

Adjacent alliances: \_\_\_\_\_

Confidence in alliance identification: L M H Explain: Jepson / mcv

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_

CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM  
(Desert Revised Nov 20, 2006)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			
Polygon/Stand #:	Air photo #:	Date:	Name(s) of surveyors:



Alliance: *Quercus douglasii*  
Woodland Alliance

*Quercus douglasii* / *Bromus* spp. - *Daucus pusillus* Association 7/11/2017

30

8

GPS waypoint #: 8 GPS name: JUNE GPS datum: (NAD 83) 83 Zone: 10S / 10T 11S (circle one)

Latitude: 35.11281970064728 Longitude: -118.6930760334781

UTM field reading: UTM 345708.702704 UTMN 3886865.901352 GPS Error:  $\pm$  4 ft/m

Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance \_\_\_\_\_ (in meters) and bearing \_\_\_\_\_ (degrees)

Elevation: 496 ft/m Photograph #'s: \_\_\_\_\_

Geology code: GRAN Soil Texture code: COLS | Upland or Wetland/Riparian (circle one)

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating (circle one)

% Surface cover: Lg rock: 30 Sm rock: \_\_\_\_\_ Bare/Fine: 70 Litter: \_\_\_\_\_ BA Stems: \_\_\_\_\_ Water: \_\_\_\_\_ =sums to 100%  
(>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud)

Slope exposure, Actual  $^{\circ}$ : \_\_\_\_\_ General: NE NW SE SW Flat Variable / All (circle one)

Slope steepness, Actual  $^{\circ}$ : \_\_\_\_\_ General:  $0^{\circ}$   $1-5^{\circ}$   $5-25^{\circ}$   $> 25^{\circ}$  (circle one)

Size of stand: <1 acre \_\_\_\_\_ 1-5 acres \_\_\_\_\_ >5 acres \_\_\_\_\_ Plot: Yes / No If yes, denote size: 100 m<sup>2</sup> / 400m<sup>2</sup> / 1000 m<sup>2</sup> / Other

Site history, stand age, and comments: GRAZING IN AREA

Type/ Level of disturbance codes: 1 2 4 1 1 1 "Other"

## II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.: QUERCUS DOUGLASII

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam), 3 (>6" diam) % NonVasc cover: \_\_\_\_\_ Total % Veg cover: \_\_\_\_\_

% Cover -Overstory Tree Conifer/Hardwood: 1 40 Understory tree-Tall shrub: \_\_\_\_\_ Shrub: \_\_\_\_\_ Herbaceous: 40 70

Height Class - Overstory Conifer/Hardwood: 1 4 Understory tree-Tall shrub: \_\_\_\_\_ Shrub: \_\_\_\_\_ Herbaceous: 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m



Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
T	Quercus douglasii	30			
H	Artemisia tridentata	40			
H	Bromus RIGENS MARIANENSIS	30			
H	Daucus pusilus	8			

Unusual species: \_\_\_\_\_

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Quercus douglasii woodland Alliance

Field-assessed association name (optional): Quercus douglasii / Bromus spp. - Daucus pusilus Association

Adjacent alliances: \_\_\_\_\_

Confidence in alliance identification: L M ☒ H Explain: Jepson / MCV

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_



Alliance: *Quercus douglasii* woodland 4/11/2010

Alliance *Quercus douglasii* / *Bromus* spp. Association

10 a

GPS waypoint #: 10 GPS name: Juno GPS datum: (NAD 83) 83 Zone: 10S / 10T / 11S (circle one)

Latitude: 35.10816871538012 Longitude: -118.68476973077208

UTM field reading: UTM 346457.01 UTMN 384337.20 GPS Error:  $\pm$  4 ft/m

Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance \_\_\_\_\_ (in meters) and bearing \_\_\_\_\_ (degrees)

Elevation: 1006 ft/m Photograph #'s:

Geology code: GRAN Soil Texture code: COUS | Upland or Wetland/Riparian (circle one)

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating (circle one)

% Surface cover: Lg rock: 80 Sm rock: \_\_\_\_\_ Bare/Fine: 20 Litter: \_\_\_\_\_ BA Stems: \_\_\_\_\_ Water: \_\_\_\_\_ =sums to 100%  
(>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud)

Slope exposure, Actual  $^{\circ}$ : \_\_\_\_\_ General: NE NW SE SW Flat Variable / All (circle one)

Slope steepness, Actual  $^{\circ}$ : \_\_\_\_\_ General:  $0^{\circ}$   $1-5^{\circ}$   $5-25^{\circ}$   $>25^{\circ}$  (circle one)

Size of stand: <1 acre \_\_\_\_\_ 1-5 acres \_\_\_\_\_ >5 acres X Plot: Yes / No If yes, denote size: 100 m<sup>2</sup> / 400m<sup>2</sup> / 1000 m<sup>2</sup> / Other

Site history, stand age, and comments: GRAZING, STILL OVERGROWING

Type/ Level of disturbance codes: TIL SIM HIM \_\_\_\_\_ "Other"

## II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.: *Quercus douglasii*, *Q. wislizeni*

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: \_\_\_\_\_ Total % Veg cover: 80

% Cover -Overstory Tree Conifer/Hardwood: \_\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_\_ Shrub: 1 Herbaceous: 80

Height Class - Overstory Conifer/Hardwood: 1 4 Understory tree-Tall shrub: 2 Shrub: 1 Herbaceous: 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m



106  
10

Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
T	Quercus douglasii	20			
T	Quercus wislizeni	10			
S	Eriogonum	1			
H	Avena	5			
H	Bromus madritensis subsp.	80			

Unusual species: \_\_\_\_\_

**III. INTERPRETATION OF STAND**

Field-assessed vegetation alliance name: Quercus douglasii woodland Alliance

Field-assessed association name (optional): Quercus douglasii / Bromus spp. Association

Adjacent alliances: \_\_\_\_\_ / \_\_\_\_\_

Confidence in alliance identification: L M ☒ H Explain: Jepson / MCV

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_



7a  
Alliance: Quercus douglasii  
Woodland Alliance

Quercus douglasii - Pinus sabiniana Association

GPS waypoint #: 7 GPS name: Jenny GPS datum: (NAD 83) 83 Zone: 10S / 10T 11S (circle one)

Latitude: 35.11602461436249 Longitude: -118.69901314843783

UTM field reading: UTME 345045 UTMN 388938.05 GPS Error:  $\pm$  3 ft (m)

Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance \_\_\_\_\_ (in meters) and bearing \_\_\_\_\_ (degrees)

Elevation: 897 ft / m Photograph #'s: \_\_\_\_\_

Geology code: GRAV Soil Texture code: COLS | Upland or Wetland/Riparian (circle one)

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating (circle one)

% Surface cover: Lg rock: 10 Sm rock: \_\_\_\_\_ Bare/Fine: 90 Litter: \_\_\_\_\_ BA Stems: \_\_\_\_\_ Water: \_\_\_\_\_ =sums to 100%  
(>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud)

Slope exposure, Actual  $^{\circ}$ : \_\_\_\_\_ General: NE NW SE SW Flat Variable / All (circle one)

Slope steepness, Actual  $^{\circ}$ : \_\_\_\_\_ General:  $0^{\circ}$   $1-5^{\circ}$   $5-25^{\circ}$   $>25^{\circ}$  (circle one)

Size of stand: <1 acre \_\_\_\_\_ 1-5 acres \_\_\_\_\_ >5 acres ✓ Plot: Yes / No If yes, denote size: 100 m<sup>2</sup> / 400m<sup>2</sup> / 1000 m<sup>2</sup> / Other

Site history, stand age, and comments: GRAZING, BUT MUCH UNDISTURBED

Type/ Level of disturbance codes: TIL SIL HIM \_\_\_\_\_ "Other"

## II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.: Quercus Douglasii, Pinus Sabiniana

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: \_\_\_\_\_ Total % Veg cover: \_\_\_\_\_

% Cover -Overstory Tree Conifer/Hardwood: 1 20 Understory tree-Tall shrub: \_\_\_\_\_ Shrub: 1 Herbaceous: 100

Height Class - Overstory Conifer/Hardwood: 1 4 Understory tree-Tall shrub: \_\_\_\_\_ Shrub: 01 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m



7

% Cover -Overstory Tree Conifer/Hardwood: \_\_\_\_/\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_ Shrub: \_\_\_\_ Herbaceous: \_\_\_\_

Height Class - Overstory Conifer/Hardwood: \_\_\_\_/\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_ Shrub: \_\_\_\_ Herbaceous: \_\_\_\_

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
T	QUERCUS DOUGLASII	25			
T	PINUS SABINIANA	5			
S	ERIOGONUM fasciculatum	1			
H	Hordeum	95			
H	MELICA	5			
H					

Unusual species: \_\_\_\_\_

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Quercus douglasii Woodland Alliance

Field-assessed association name (optional): Quercus douglasii - Pinus sabiniana Association

Adjacent alliances: \_\_\_\_\_

Confidence in alliance identification: L M ☒ H Explain: Japan / MCV

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes/No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_

## CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Revised Nov 20, 2006)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association:
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Polygon/Stand #:	Air photo #:	Date:	Name(s) of surveyors:



# CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Version Revised Feb 21, 2007)

13a

For Office Use:	Final database #:	Final vegetation type name:	Alliance <u>Quercus douglasii woodland</u> Association <u>Quercus douglasii / Bromus spp. Association</u>
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## I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo #:	Date:	Name(s) of surveyors:
		4/11/12	Ben Montano, Casanova, Cady

GPS waypoint #: 13 GPS name: JUNO GPS datum: (e.g. NAD 83) \_\_\_\_\_ Zone: 10S / 10T / 11S (circle one)  
 Latitude: 35.11281970064728 Longitude: -118.6930760334781  
 UTM field reading: UTM E 346895 UTM N 3886231 GPS Error: ± 4 ft/m  
 Is GPS within stand? Yes ☒ No ☐ If No, cite from GPS point to stand, the distance \_\_\_\_\_ (in meters) and bearing \_\_\_\_\_ (degrees)

Elevation: 1000 ft/m Photograph #'s: \_\_\_\_\_

Geology code: GRAN Soil Texture code: COUS Upland or Wetland/Riparian (circle one)  
 Topography: Macro: top upper mid lower bottom Micro: convex flat concave undulating (circle one)  
 % Surface cover: Lg rock: 15 Sm rock: \_\_\_\_\_ Bare/Fine: \_\_\_\_\_ Litter: \_\_\_\_\_ BA Stems: 87 Water: \_\_\_\_\_ =sums to 100%  
 (>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud)

Slope exposure, Actual °: \_\_\_\_\_ General: NE NW SE SW Flat Variable /All (circle one)

Slope steepness, Actual °: \_\_\_\_\_ General: 0° 1-5° 5-25° > 25° (circle one)

Size of stand: <1 acre \_\_\_\_\_ 1-5 acres 1 >5 acres \_\_\_\_\_ Plot: Yes / No If yes, denote size: 100 m<sup>2</sup> / 400m<sup>2</sup> / 1000 m<sup>2</sup> / Other

Site history, stand age, and comments: IN AREAS THAT HAVE BEEN & ARE GRAZED

Type/ Level of disturbance codes: TIC SIL HIM \_\_\_\_\_ "Other" \_\_\_\_\_

## II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.: \_\_\_\_\_

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: \_\_\_\_\_ Total % Veg cover: 50



13

% Cover -Overstory Tree Conifer/Hardwood: 1 30 Understory tree-Tall shrub: \_\_\_\_\_ Shrub: 10 Herbaceous: 60

Height Class - Overstory Conifer/Hardwood: 1 4 Understory tree-Tall shrub: \_\_\_\_\_ Shrub: 2 Herbaceous: 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
T	QUERCUS DOUGLASII	30			
M	BROMUS HUMIDUS/RUDENS	20			
S	ERIOGONUM FASCICULATUM	10			

Unusual species: \_\_\_\_\_

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: QUERCUS DOUGLASII woodland Alliance

Field-assessed association name (optional): Quercus douglasii / Bromus spp. Association

Adjacent alliances: \_\_\_\_\_

Confidence in alliance identification: L M H Explain: Jepson / MCV

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_

## CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Revised Nov 20, 2006)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Polygon/Stand #:	Air photo #:	Date:	Name(s) of surveyors:



# CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Version Revised Feb 21, 2007)

6  
6.0

For Office Use:	Final database #:	Final vegetation type name:	Alliance <u>Quercus douglasii woodland Alliance</u> Association <u>Quercus douglasii / Bromus spp. Association</u>
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### I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo #:	Date: <u>4/10/2007</u>	Name(s) of surveyors: <u>LABOUR, CARY, MONTJO</u>
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GPS waypoint #: 6 GPS name: Juno GPS datum: (e.g. NAD 83) 83 Zone: 10S / 10T (11S (circle one))  
 Latitude: 35.121967565153724 Longitude: -118.70942881998168

UTM field reading: UTM 344235 73 UTMN 3837906 EA GPS Error: ± 3 ft (m)

Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance \_\_\_\_\_ (in meters) and bearing \_\_\_\_\_ (degrees)

Elevation: 946 ft / m Photograph #'s: \_\_\_\_\_

Geology code: CRAN Soil Texture code: CLG | Upland or Wetland/Riparian (circle one)  
 Topography: Macro: top upper mid (lower) bottom | Micro: convex flat concave undulating (circle one)

% Surface cover: Lg rock: 2 Sm rock: 2 Bare/Fine: 96 Litter: \_\_\_\_\_ BA Stems: \_\_\_\_\_ Water: \_\_\_\_\_ =sums to 100%  
(>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud)

Slope exposure, Actual °: \_\_\_\_\_ General: NE (NW) SE SW Flat Variable / All (circle one)

Slope steepness, Actual °: \_\_\_\_\_ General: 0° 1-5° (5-25°) > 25° (circle one)

Size of stand: <1 acre 1-5 acres >5 acres Plot: Yes / No If yes, denote size: 100 m<sup>2</sup> / 400m<sup>2</sup> / 1000 m<sup>2</sup> / Other

Site history, stand age, and comments: CATTLE GRAZING, ACTIVE

Type/ Level of disturbance codes: F / V / H / M / / / / "Other"

### II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), (T4) (11-24" dbh), T5 (>24" dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.: QUERCUS (SEE PHOTO ABOVE) 2 SPECIES DOMINANT OVERSTORY

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: (H1) (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: \_\_\_\_\_ Total % Veg cover: \_\_\_\_\_



% Cover -Overstory Tree Conifer/Hardwood: 110 Understory tree-Tall shrub: \_\_\_\_\_ Shrub: \_\_\_\_\_ Herbaceous: 90

Height Class - Overstory Conifer/Hardwood: 105 Understory tree-Tall shrub: \_\_\_\_\_ Shrub: \_\_\_\_\_ Herbaceous: 91

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
T	<i>Quercus douglasii</i>	10			
H	<i>Bromus m.</i>	90			

Unusual species: \_\_\_\_\_

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Quercus douglasii woodland Alliance

Field-assessed association name (optional): Quercus douglasii / Bromus spp. Association

Adjacent alliances: \_\_\_\_\_

Confidence in alliance identification: L M H Explain: Jeppan / MCV

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes/No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_

## CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Revised Nov 20, 2006)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Polygon/Stand #:	Air photo #:	Date:	Name(s) of surveyors:



# CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Version Revised Feb 21, 2007)

5a

For Office Use:	Final database #:	Final vegetation type name:	Alliance <u>Quercus douglasii - Pinus sabiniana</u> Association <u>Quercus douglasii - Pinus sabiniana</u> Association (15)
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## I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #:	Air photo #:	Date: <u>4/11/17</u>	Name(s) of surveyors: <u>LABOUE, CADY, MONTJO</u>
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GPS waypoint #: 16 GPS name: DO GPS datum: (e.g. NAD 83) 83 Zone: 10S / 10T (11S) (circle one)

UTM field reading: UTME 35.10224666 UTMN -118.67426762 GPS Error:  $\pm$  5 ft / m

Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance \_\_\_\_\_ (in meters) and bearing \_\_\_\_\_ (degrees)

Elevation: 3750 ft/m Photograph #'s: \_\_\_\_\_

Geology code: CRW Soil Texture code: CLS | Upland or Wetland/Riparian (circle one)

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating (circle one)

% Surface cover: Lg rock: 20 Sm rock: \_\_\_\_\_ Bare/Fine: 20 Litter: \_\_\_\_\_ BA Stems: 60 Water: \_\_\_\_\_ =sums to 100%  
(>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud)

Slope exposure, Actual  $^{\circ}$ : \_\_\_\_\_ General: NE NW SE SW Flat Variable / All (circle one)

Slope steepness, Actual  $^{\circ}$ : \_\_\_\_\_ General:  $0^{\circ}$  1-5 $^{\circ}$  5-25 $^{\circ}$  >25 $^{\circ}$  (circle one)

Size of stand: <1 acre \_\_\_\_\_ 1-5 acres \_\_\_\_\_ >5 acres X Plot: Yes / No If yes, denote size: 100 m<sup>2</sup> / 400m<sup>2</sup> / 1000 m<sup>2</sup> / Other \_\_\_\_\_

Site history, stand age, and comments: UNDISTURBED RECENTLY

Type/ Level of disturbance codes: T1 L SIL H1 L \_\_\_\_\_ "Other" \_\_\_\_\_

## II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.: PINUS SABINIANA, Quercus douglasii

Shrub: S1 seedling (<3 yr old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 20 Total % Veg cover: 80

Gravelly Sand



Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
T	PINUS SABIANA	20			
T	QUERCUS DOUGLASII	40			
H	BRYONIA ALBENS	15			

Unusual species: \_\_\_\_\_

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Quercus douglasii woodland Alliance

Field-assessed association name (optional): Quercus douglasii - Pinus sabiniana Association

Adjacent alliances: \_\_\_\_\_

Confidence in alliance identification: L M H Explain: Japan / MCV

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_



(Revised March 27, 2018)

Page 1



(Revised March 27, 2018)

SPECIES SHEET

**% NonVasc cover:**                      **Total % Vasc Veg cover:**

**Height Class** - Conifer tree / Hardwood tree:                      /                      Regenerating Tree:                      Shrub:                      Herbaceous:

*Height classes:* 1= $\leq 1/2$ m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $\geq 50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:** \_\_\_\_\_



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Quercus lobata</u>
		Association <u>Quercus lobata / grass</u>	
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Database #: <u>BVC 0774</u>	Date: <u>5/15/17</u>	Name of recorder: <u>Cynthia Nicely</u>	circle: Relevé or RA
	UID:	Other surveyors: <u>Mark Campbell</u>	
		Location Name:	
GPS name: <u>Collech/Tenatlex</u>		For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side	
UTME	UTMN	Zone: 11 NAD83 GPS error: ft./m./PDOP ____	
Decimal degrees: LAT <u>34.816458</u>		LONG <u>-118.83542</u>	
GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID ____		Projected UTM: UTME ____ UTMN ____	
Camera Name: <u>Collech</u> Cardinal photos at ID point: ____			
Other photos: <u>Film</u>			
Stand Size (acres): <1, 1-5, >5   Plot Area (m²): 100 / ____   Plot Dimensions ____ x ____ m   RA Radius ____ m			
Exposure, Actual °: ____ NE NW SE SW Flat Variable   Steepness, Actual °: ____ 0° 1-5° >5-25° >25			
Topography: Macro: top upper <u>mid</u> lower bottom		Micro: convex flat concave <u>undulating</u>	
Geology code: ____		Soil Texture code: ____ Upland or Wetland/Riparian (circle one)	
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H2O:	BA Stems:	Litter:	Bedrock: Boulder: Stone: Cobble: Gravel: Fines: =100%
% Current year bioturbation <u>0</u> Past bioturbation present? Yes / <u>No</u>   % Hoof punch <u>0</u>			
Fire evidence: Yes / <u>No</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments:			
<u>Updated from original form: part of species list was determined from photos + Association determined</u>			
Disturbance code / Intensity (L,M,H): ____ / ____ / ____ / ____ / ____ "Other" ____ / ____			
<b>II. HABITAT DESCRIPTION</b>			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
<b>III. INTERPRETATION OF STAND</b>			
Field-assessed vegetation Alliance name: <u>Quercus lobata</u>			
Field-assessed Association name (optional): <u>Quercus lobata / grass</u>			
Adjacent Alliances/direction: ____ / ____ / ____			
Confidence in Alliance identification: L M H Explain: ____			
Phenology (E,P,L): Herb <u>P</u> Shrub / Tree <u>P</u> Other identification or mapping information: ____			



(Revised March 27, 2018)

SPECIES SHEET

% NonVasc cover: \_\_\_\_ Total % Vasc Veg cover: 120

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

**% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%**

**Unusual species:** \_\_\_\_\_



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance: <u>Quercus lobata</u>
		Association: <u>Quercus lobata - Salix laevigata</u>	circle: Relevé or RA
<b>I. LOCATION/ENVIRONMENTAL DESCRIPTION</b>			
Database #: <u>BVCO 619</u>	Date: <u>5/4/17</u>	Name of recorder: <u>Richard Montijo</u>	
	UID:	Other surveyors: <u>Manuel Carrillo, Cynthia Niche</u>	
		Location Name: <u>Tejon Ranch, Kern alignment</u>	
GPS name: <u>tp unknown</u>		For Relevé only: Bearing°, left axis at ID point _____ of Long / Short side	
UTME _____	UTMN _____	Zone: 11 NAD83 GPS error: ft / m / PDOP _____	
Decimal degrees: LAT <u>34.87441</u>		LONG <u>118.893016</u>	
GPS within stand? <u>Yes</u> / No		If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____	
and record: Base point ID _____		Projected UTM: UTME _____ UTMN _____	
Camera Name: _____		Cardinal photos at ID point: _____	
Other photos: <u>Kelown</u>			
Stand Size (acres): <u>&lt;1</u> , 1-5, >5		Plot Area (m²): 100 / _____ Plot Dimensions _____ x _____ m RA Radius _____ m	
Exposure, Actual °: _____ NE NW SE SW Flat Variable		Steepness, Actual °: _____ 0° 1-5° >5-25° >25	
Topography: Macro: top upper mid lower bottom		Micro: convex flat concave undulating	
Geology code: _____ Soil Texture code: _____		Upland or Wetland/Riparian (circle one)	
% Surface cover: _____ (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H <sub>2</sub> O: _____	BA Stems: _____	Litter: _____	Bedrock: _____ Boulder: _____ Stone: _____ Cobble: _____ Gravel: _____ Fines: _____ =100%
% Current year bioturbation _____		Past bioturbation present? Yes / No   % Hoof punch _____	
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments:			
<u>form updated to include additional</u> <u>specimens seen during 2nd survey</u> <u>&amp; association determined from species,</u> <u>but no surface info available</u>			
Disturbance code / Intensity (L,M,H): _____ / _____ / _____ "Other" _____			
<b>II. HABITAT DESCRIPTION</b>			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
<b>III. INTERPRETATION OF STAND</b>			
Field-assessed vegetation Alliance name: <u>Quercus lobata Woodland</u>			
Field-assessed Association name (optional): <u>Quercus lobata - Salix laevigata Association</u>			
Adjacent Alliances/direction: _____			
Confidence in Alliance identification: L M H Explain: _____			
Phenology (E,P,L): Herb Shrub Tree <u>P</u> Other identification or mapping information: _____			



(Revised March 27, 2018)

BV10 619

## SPECIES SHEET

[illegible]

**Unusual species:**



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance: <u>Mix Oak Woodland</u>
			Association: <u>Mixed oak - Aesculus californica / grass</u>
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			
Database #: <u>BSV C0581</u>	Date: <u>5/22/17</u>	Name of recorder: <u>Jessie Teymond</u>	circle: Relevé or RA <input checked="" type="checkbox"/>
	UID:	Other surveyors: <u>May Capell, Cynthia Nicol</u>	
		Location Name: <u>Lejon Fort Park, Kern</u>	<input type="checkbox"/>
GPS name: <u>Collector / Teymond</u>		For Relevé only: Bearing °, left axis at ID point ____ of Long / Short side	
UTME	UTMN	Zone: 11	NAD83 GPS error: ft./m./PDOP ____
Decimal degrees: LAT <u>34.884478</u>		LONG <u>118.908693</u>	
GPS within stand? <input checked="" type="checkbox"/> Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID ____		Projected UTM: UTME ____ UTMN ____	
Camera Name: ____ Cardinal photos at ID point: ____			
Other photos: <u>Film</u>			
Stand Size (acres): <1, <u>1-5</u> , >5   Plot Area (m²): 100 / ____   Plot Dimensions ____ x ____ m   RA Radius ____ m			
Exposure, Actual °: <u>NE</u> NW SE SW Flat Variable   Steepness, Actual °: ____ 0° 1-5° >5-25° >25			
Topography: Macro: top upper mid lower bottom   Micro: convex flat concave undulating			
Geology code: ____ Soil Texture code: ____   Upland or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H <sub>2</sub> O:	BA Stems:	Litter:	Bedrock: Boulder: Stone: Cobble: Gravel: Fines: =100%
% Current year bioturbation ____ Past bioturbation present? Yes / No   % Hoof punch ____			
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>change desktop</u> <u>updated form to determine Association + rename Alliance</u> <u>no surface data</u> <u>photos used for some species</u>			
Disturbance code / Intensity (L,M,H): ____ / ____ / ____ "Other" ____ / ____			
II. HABITAT DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <u>Mixed Oak Woodland</u>			
Field-assessed Association name (optional): <u>Mixed oak - Aesculus californica / grass</u>			
Adjacent Alliances/direction: ____			
Confidence in Alliance identification: L M H Explain: ____			
Phenology (E,P,L): Herb <u>P</u> Shrub / Tree <u>P</u> Other identification or mapping information: ____			



(Revised March 27, 2018)

SPECIES SHEET

% NonVasc cover:      Total % Vasc Veg cover: 110

**Height Class** - Conifer tree / Hardwood tree: 5 Regenerating Tree:    Shrub:    Herbaceous:   

Height classes: 1= $<1/2$ m, 2= $1/2$ -1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $>50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:**



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Salix laevigata Woodland</u> Association <u>Salix laevigata - Salix lasiolepis</u>
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Database #: <u>B20 621</u>	Date: <u>11/6/17</u>	Name of recorder: <u>Mary Canal</u>	circle: Relevé or RA
	UID:	Other surveyors: <u>Cynthia Nicely</u>	
GPS name: <u>Collab</u>		For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side	
UTME	UTMN	Zone: 11	NAD83 GPS error: ft./ m/ PDOP ____
Decimal degrees: LAT <u>34.874179</u>		LONG <u>118.892476</u>	
GPS within stand? <input checked="" type="checkbox"/> Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID ____		Projected UTMs: UTME ____ UTMN ____	
Camera Name: <u>Collec</u>	Cardinal photos at ID point: ____		
Other photos: <u>Collec</u>			
Stand Size (acres): <u>(1)</u> 1-5, >5   Plot Area (m²): 100 / ____   Plot Dimensions ____ x ____ m   RA Radius ____ m			
Exposure, Actual °: ____ NE NW SE SW Flat Variable   Steepness, Actual °: ____ 0° 1-5° > 5-25° > 25			
Topography: Macro: top upper mid lower bottom		Micro: convex flat concave undulating	
Geology code: ____		Soil Texture code: ____ Upland or Wetland/Riparian (circle one)	
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H2O: BA Stems: Litter: Bedrock: Boulder: Stone: Cobble: Gravel: Fines: =100%			
% Current year bioturbation ____ Past bioturbation present? Yes / No   % Hoof punch ____			
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments:			
<u>updated mapping to determine Association &amp; update Alliance</u> <u>done using photos from JD survey</u> <u>no surface info recorded</u>			
Disturbance code / Intensity (L,M,H): ____ / ____ / ____ / ____ "Other" ____			
<b>II. HABITAT DESCRIPTION</b>			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
<b>III. INTERPRETATION OF STAND</b>			
Field-assessed vegetation Alliance name: <u>Salix laevigata Woodland</u>			
Field-assessed Association name (optional): <u>Salix laevigata - Salix lasiolepis</u>			
Adjacent Alliances/direction: ____			
Confidence in Alliance identification: L M H Explain: ____			
Phenology (E,P,L): Herb <u>P</u> Shrub <u>P</u> Tree <u>P</u> Other identification or mapping information: ____			



(Revised March 27, 2018)

BUO 621

#### IV. VEGETATION DESCRIPTION

**Unusual species:**



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Salix laevigata</u> Woodland Alliance Association <u>Salix laevigata</u> Association
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			circle: Relevé or RA
Database #: <u>BVCO150</u>	Date: <u>04/05/2017</u>	Name of recorder: <u>RICARDO MONTANO</u>	Other surveyors: <u>PAULETTE LABOET, MICHAEL CADY</u>
Location Name:			
GPS name:		For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side	
UTME <u>326504</u> UTMN <u>3860991</u>		Zone: 11 NAD83 GPS error: ft./ m./ PDOP ____	
Decimal degrees: LAT <u>34.87649697420203</u>		LONG <u>-118.89832229527462</u>	
GPS within stand? <u>Yes</u> / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID ____ Projected UTM: UTME ____ UTMN ____			
Camera Name: <u>FULLUM</u> Cardinal photos at ID point: ____			
Other photos: ____			
Stand Size (acres): <1, <u>1-5</u> >5   Plot Size (m²): 100 / ____   Plot Shape ____ x ____ m   RA Radius <u>5</u> m			
Exposure, Actual °: ____ NE NW SE SW <u>Flat</u> Variable   Steepness, Actual °: ____ <u>0°</u> 1-5° > 5-25° > 25			
Topography: Macro: top upper mid <u>lower</u> bottom   Micro: convex <u>flat</u> concave undulating			
Geology code: <u>SIAL</u> Soil Texture code: <u>MES1</u>   Upland or <u>Wetland/Riparian</u> (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H <sub>2</sub> O: <u>15</u> BA Stems: <u>75</u> Litter: ____ Bedrock: ____ Boulder: ____ Stone: ____ Cobble: ____ Gravel: ____ Fines: <u>10</u> =100%			
% Current year bioturbation ____ Past bioturbation present? Yes / <u>No</u>   % Hoof punch ____			
Fire evidence: Yes / <u>No</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>PREVIOUS IMAGERY BACK TO 1994 SHOWS SIMILAR CONDITIONS; PERHAPS WILLOW WOODLANDS WERE MORE EXPANSIVE. AREA IS CURRENTLY FLOODED.</u>			
Disturbance code / Intensity (L,M,H): <u>T / L H / L</u> / ____ / ____ / ____ "Other" ____ / ____			
II. HABITAT DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <u>RED - WILLOW THICKETS</u>			
Field-assessed Association name (optional): <u>Salix laevigata</u> Association			
Adjacent Alliances/direction: <u>LEPIDODERMIS LATIFOLIA</u> S. <u>QUERCUS LAEATA</u> 1 <u>WRE</u>			
Confidence in Alliance identification: L M <u>H</u> Explain: ____			
Phenology (E,P,L): Herb Shrub Tree <u>X</u> Other identification or mapping information: ____			



(Revised April 28, 2016)

SPECIES SHEET

% NonVasc cover:      Total % Vasc Veg cover: 100

Height classes: 1= $\leq 1/2$ m, 2= $1/2-1$ m, 3= $1-2$ m, 4= $2-5$ m, 5= $5-10$ m, 6= $10-15$ m, 7= $15-20$ m, 8= $20-35$ m, 9= $35-50$ m, 10= $\geq 50$ m

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:**



(Revised March 27, 2018)

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(Revised March 27, 2018)

BV 586

SPECIES SHEET

[illegible]

**Unusual species:**



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

For Office Use:	Final database #: <u>051504</u>	Final vegetation type:	Alliance: <u>Salix lucida Woodland Alliance</u> Association: <u>Salix lucida ssp. lasiandra Association</u>
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Database #: <u>051504</u>	Date: <u>05-15-17</u>	Name of recorder: <u>Alyssa Taylor</u>	circle: Relevé or <u>RA</u>
		Other surveyors: <u>Cecile Schochet, Cynthia Nicely</u>	
	Location Name: <u>Lebec, CA Kern 2.1</u>		
GPS name: <u>70706</u>	For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side		
UTME _____	UTMN _____	Zone: 11 NAD83 GPS error: ft./ m./ PDOP _____	
Decimal degrees: LAT <u>34.827508042520606</u>		LONG <u>-118.84625109367715</u>	
GPS within stand? <u>Yes</u> No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____			
and record: Base point ID _____ Projected UTM: UTME _____ UTMN _____			
Camera Name: <u>Furcam</u> Cardinal photos at ID point:			
Other photos:			
Stand Size (acres): <1, 1-5, <u>5</u>   Plot Size (m²): 100 / _____   Plot Shape _____ x _____ m   RA Radius <u>25</u> m			
Exposure, Actual °: <u>20°</u> <u>NE</u> NW SE SW Flat Variable   Steepness, Actual °: _____ 0° <u>1-5°</u> > 5-25° > 25			
Topography: Macro: top upper mid lower <u>bottom</u>   Micro: convex <u>flat</u> concave undulating			
Geology code: <u>SETU</u> Soil Texture code: <u>MESL</u>   Upland or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H <sub>2</sub> O: / BA Stems: <u>2</u> Litter: <u>40</u> Bedrock: / Boulder: / Stone: / Cobble: / Gravel: / Fines: <u>58</u> = 100%			
% Current year bioturbation <u>21</u> Past bioturbation present? Yes / <u>No</u>   % Hoof punch _____			
Fire evidence: Yes / <u>No</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>SCE alignment</u> <u>Grazing</u>			
Disturbance code / Intensity (L,M,H): <u>04 1 2 05 1 M</u> "Other" _____			
<b>II. HABITAT DESCRIPTION</b>			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
<b>III. INTERPRETATION OF STAND</b>			
Field-assessed vegetation Alliance name: <u>Salix lucida Woodland Alliance</u>			
Field-assessed Association name (optional): <u>Salix lucida ssp. lasiandra Association</u>			
Adjacent Alliances/direction: _____			
Confidence in Alliance identification: L M <u>H</u> Explain: <u>MCV / JEPSON</u>			
Phenology (E,P,L): Herb <u>P</u> Shrub <u>/</u> Tree <u>E</u> Other identification or mapping information:			



(Revised April 28, 2016)

SPECIES SHEET

% NonVasc cover: \_\_\_\_\_ Total % Vasc Veg cover: 60

**Height Class** - Conifer tree / Hardwood tree: 16 Regenerating Tree: 6 Shrub:    Herbaceous: 1

Height classes: 1= $\leq 1/2$ m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $\geq 50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Unusual species: \_\_\_\_\_



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

*Salix lucida* ssp. *lasiandra* Alliance

For Office Use:	Final database #:	Final vegetation type:	Alliance
		Association	<i>Salix lucida</i> ssp. <i>lasiandra</i> Association
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Database #:	Date:	Name of recorder:	circle: Relevé or <u>RA</u>
051505	051517	Alyssa Taylor	
Location Name:		Other surveyors:	
Lobec, CA Kern 21		Cecile Schochet / Cynthia Neeley	
GPS name:		For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side	
70706			
UTME	UTMN	Zone:	11 NAD83 GPS error: ft./ m./ PDOP
Decimal degrees: LAT	34.82706348236483	LONG	-118.84536295860472
GPS within stand? Yes <u>(No)</u> If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID ____ Projected UTMs: UTME ____ UTMN ____			
Camera Name: Fulcrum Cardinal photos at ID point: <u>NE SW</u>			
Other photos:			
Stand Size (acres): <1, <u>(3)</u> , >5   Plot Size (m²): 100 / ____   Plot Shape ____ x ____ m   RA Radius <u>25</u> m			
Exposure, Actual °: <u>20</u> NE NW SE SW <u>(Flat)</u> Variable   Steepness, Actual °: ____ 0° <u>(1-5°)</u> > 5-25° > 25			
Topography: Macro: top upper mid lower <u>(bottom)</u>   Micro: convex <u>(flat)</u> concave undulating			
Geology code: <u>SETU</u> Soil Texture code: <u>MESL</u>   Upland or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H2O: ____ BA Stems: ____ Litter: <u>85</u> Bedrock: ____ Boulder: ____ Stone: ____ Cobble: ____ Gravel: ____ Fines: ____ =100%			
% Current year bioturbation ____ Past bioturbation present? Yes / <u>(No)</u>   % Hoof punch ____			
Fire evidence: Yes / <u>(No)</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments:			
<u>SCE alignment</u> <u>Grazing</u>			
Disturbance code / Intensity (L,M,H): <u>04 / L 05 / H</u> / ____ / ____ / ____ "Other" ____ / ____			
<b>II. HABITAT DESCRIPTION</b>			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>(T3)</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>(H2)</u> (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
<b>III. INTERPRETATION OF STAND</b>			
Field-assessed vegetation Alliance name: <u>Salix lucida</u> ssp. <i>lasiandra</i> Alliance			
Field-assessed Association name (optional): <u>Salix lucida</u> ssp. <i>lasiandra</i> Association			
Adjacent Alliances/direction: ____			
Confidence in Alliance identification: L M <u>(H)</u> Explain: <u>MCV / Jerson</u>			
Phenology (E,P,L): Herb <u>E</u> Shrub ____ Tree <u>E</u> Other identification or mapping information: ____			



(Revised April 28, 2016)

SPECIES SHEET

% NonVasc cover:      Total % Vasc Veg cover: 45

Height Class - Conifer tree / Hardwood tree: 18 Regenerating Tree: ☒ Shrub:      Herbaceous: 2

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

[illegible]

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# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

Use:	Final database #:	Final vegetation type:	Alliance <u>Ambrosia salsola Shrubland</u> Association <u>Ambrosia salsola Association</u>
<b>I. LOCATION/ENVIRONMENTAL DESCRIPTION</b>			
Database #:	Date:	Name of recorder:	circle: Relevé or (RA)
<u>051702</u>	<u>051717</u>	<u>Alyssa Taylor</u>	
Location Name:		Other surveyors:	
<u>Kern</u>		<u>Cynthia Nix / Cande Shchet</u>	
GPS name <u>70706</u>			
For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side			
UTMN _____ Zone: 11 NAD83 GPS error: ft./ m./ PDOP _____			
Latitude degrees: LAT <u>35.440238012309784</u>		LONG <u>-118.79248077779394</u>	
GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID _____ Projected UTM: UTM _____ UTMN _____			
Camera Name: <u>Kern</u> Cardinal photos at ID point: _____			
Other photos: _____			
Stand Size (acres): <1, 1-5, <u>&gt;5</u>   Plot Size (m²): 100 / ____   Plot Shape ____ x ____ m   RA Radius <u>25</u> m			
Exposure, Actual °: <u>300</u> NE NW SE <u>(SW)</u> Flat Variable   Steepness, Actual °: ____ 0° <u>1-5°</u> > 5-25° > 25			
Topography: Macro: top upper mid lower <u>bottom</u>   Micro: convex <u>flat</u> concave undulating			
Geology code: _____ Soil Texture code: _____   <u>Upland</u> or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H <sub>2</sub> O: BA Stems: <u>2</u> Litter: Bedrock: Boulder: / Stone: / Cobble: / Gravel: / Fines: <u>98</u> = 100%			
% Current year bioturbation <u>2</u> Past bioturbation present? <u>Yes</u> / No   % Hoof punch _____			
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>SCE alignment</u> <u>alignment grazing: Ag lands</u>			
Disturbance code / Intensity (L,M,H): <u>041M 051H 151M</u> / ____ / ____ "Other" ____ / ____			
<b>II. HABITAT DESCRIPTION</b>			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
<b>III. INTERPRETATION OF STAND</b>			
Revised vegetation Alliance name: <u>Ambrosia salsola Shrubland Alliance</u>			
Revised Association name (optional): <u>Ambrosia salsola Association</u>			
Adjacent Alliances/direction: _____			
Confidence in Alliance identification: L M <u>H</u> Explain: <u>MCV / Tupsa</u>			
Phenology (E,P,L): Herb <u>L</u> Shrub <u>L</u> Tree <u>X</u> Other identification or mapping information: _____			



#: 051707

SPECIES SHEET

**% Cover** - Conifer tree / Hardwood tree: 1 Regenerating Tree:    Shrub: 30 Herbaceous: 65  
**Height Class** - Conifer tree / Hardwood tree: 1 Regenerating Tree:    Shrub: 2 Herbaceous: 1  
*ht classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m*

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular  
% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

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# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Ambrosia Salsola shrubland</u> Alliance Association <u>Ambrosia salsola</u> Association
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			circle: Relevé or <u>RA</u>
Database #:	Date:	Name of recorder:	
<u>051917AT01</u>	<u>051917</u>	<u>Alyssa Taylor</u>	
		Other surveyors:	<u>Cecile Shohet</u>
	Location Name: <u>Kern, CA Kern 1.1</u>		
GPS name: <u>72111</u>	For Relevé only: Bearing °, left axis at ID point ____ of Long / Short side		
UTME ____	UTMN ____	Zone: <u>11</u> NAD83 GPS error: ft./ m./ PDOP ____	
Decimal degrees: LAT <u>35.39641811916294</u>	LONG <u>-118.8082366592866</u>		
GPS within stand? <u>Yes</u> / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID ____ Projected UTMs: UTME ____ UTMN ____			
Camera Name: <u>fulcrum</u> Cardinal photos at ID point: <u>NESW</u>			
Other photos:			
Stand Size (acres): <1, 1-5, >5   Plot Size (m²): 100 / ____   Plot Shape ____ x ____ m   RA Radius <u>25</u> m			
Exposure, Actual °: ____ NE NW SE <u>SW</u> Flat Variable   Steepness, Actual °: ____ 0° <u>1-5°</u> > 5-25° > 25			
Topography: Macro: top upper <u>mid</u> lower bottom   Micro: convex flat concave <u>undulating</u>			
Geology code: <u>SETU</u> Soil Texture code: <u>MESR</u>   <u>Upland</u> or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H2O: <u>BA</u> Stems: <u>2</u> Litter: <u>10</u> Bedrock: <u>-</u> Boulder: <u>-</u> Stone: <u>3</u> Cobble: <u>8</u> Gravel: <u>3</u> Fines: <u>74</u> =100%			
% Current year bioturbation <u>1</u> Past bioturbation present? <u>Yes</u> / No   % Hoof punch <u>2</u>			
Fire evidence: Yes / <u>No</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>see assignment, zoning, access roads</u>			
Disturbance code / Intensity (L,M,H): <u>04, H</u> <u>05, H</u> <u>15, L</u> ____ / ____ / ____ "Other" ____ / ____			
II. HABITAT DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: <u>1</u> (<2ft. stem ht.), <u>2</u> (2-10ft. ht.), <u>3</u> (10-20ft. ht.), <u>4</u> (>20ft. ht.)			
Desert Palm/Joshua Tree: <u>1</u> (<1.5" base diameter), <u>2</u> (1.5-6" diam.), <u>3</u> (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <u>Ambrosia Salsola shrubland</u> Alliance			
Field-assessed Association name (optional): <u>Ambrosia salsola</u> Association			
Adjacent Alliances/direction: ____ / ____ / ____			
Confidence in Alliance identification: L M <u>H</u> Explain: <u>MCU / JEPSON</u>			
Phenology (E,P,L): Herb <u>L</u> Shrub <u>E</u> Tree ____ Other identification or mapping information:			



(Revised April 28, 2016)

SPECIES SHEET

% NonVasc cover: \_\_\_\_\_ Total % Vasc Veg cover: 60

Height Class - Conifer tree / Hardwood tree:      /      Regenerating Tree:      Shrub: 2 Herbaceous: 1

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:**



(Revised March 27, 2018)

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(Revised March 27, 2018)

SPECIES SHEET

% NonVasc cover: \_\_\_\_\_ Total % Vasc Veg cover: \_\_\_\_\_

**Height Class** - Conifer tree / Hardwood tree: \_\_\_\_\_ / \_\_\_\_\_ Regenerating Tree: \_\_\_\_\_ Shrub: \_\_\_\_\_ Herbaceous: \_\_\_\_\_

Stratum categories: T=Tree, A = Sapling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Unusual species: \_\_\_\_\_



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Ceanothus cuneatus shrubland</u> <u>Alliance</u>
		Association	<u>Ceanothus cuneatus Association</u>
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			
Database #:	Date:	Name of recorder:	circle: Relevé or RA
<u>05100202GN</u>	<u>5/18/17</u>	<u>Anthony Nicely</u>	
		Other surveyors: <u>—</u>	
Location Name: <u>TRM KERN</u>			
GPS name: <u>70706</u>		For Relevé only: Bearing°, left axis at ID point _____ of Long / Short side	
UTME _____		UTMN _____	
		Zone: 11 NAD83 GPS error: ft./m./PDOP _____	
Decimal degrees: LAT <u>35.09478935686505</u>		LONG <u>-118.65210390472322</u>	
GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) _____ bearing° _____ inclination° _____			
and record: Base point ID _____ Projected UTM: UTM _____ UTMN _____			
Camera Name: <u>filmm</u> Cardinal photos at ID point: <u>N, E, S, W</u>			
Other photos: <u>app. Behavioral photo</u>			
Stand Size (acres): <1, <u>1-5</u> , >5   Plot Size (m²): <u>100</u>   Plot Shape _____ x _____ m   RA Radius <u>5</u> m			
Exposure, Actual°: <u>90</u> NE NW SE SW Flat Variable   Steepness, Actual°: <u>10</u> 0° <u>1-5°</u> >5-25° >25			
Topography: Macro: top <u>upper</u> mid lower bottom   Micro: <u>convex</u> flat <u>concave</u> undulating			
Geology code: <u>MSC</u> Soil Texture code: _____ Upland or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H:0: <u>0</u> BA Stems: <u>3</u> Litter: <u>1</u> Bedrock: <u>1</u> Boulder: <u>1</u> Stone: <u>1</u> Cobble: <u>1</u> Gravel: <u>1</u> Fines: <u>94</u> =100%			
% Current year bioturbation <u>2</u> Past bioturbation present? Yes / <u>No</u>   % Hoof punch <u>2</u>			
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>Small section - adjacent to residential property - relatively low disturbance, no obviously compacted areas road within alignment</u>			
Disturbance code / Intensity (L,M,H): <u>05 L 15 L</u> "Other" _____			
II. HABITAT DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: <u>1</u> (<2ft. stem ht.), <u>2</u> (2-10ft. ht.), <u>3</u> (10-20ft. ht.), <u>4</u> (>20ft. ht.)			
Desert Palm/Joshua Tree: <u>1</u> (<1.5" base diameter), <u>2</u> (1.5-6" diam.), <u>3</u> (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <u>Ceanothus cuneatus Shrubland Alliance</u>			
Field-assessed Association name (optional): <u>Ceanothus cuneatus Association</u>			
Adjacent Alliances/direction: _____			
Confidence in Alliance identification: L M <u>H</u> Explain: <u>used CMV @ in field</u>			
Phenology (E,P,L): Herb Shrub Tree Other identification or mapping information: _____			



Database #: 0580249N

SPECIES SHEET

% Cover - Conifer tree / Hardwood tree: 5 / 5      % NonVase cover: — Total % Vase Veg cover: 80  
 Height Class - Conifer tree / Hardwood tree: 5 / 5      Regenerating Tree: — Shrub: 65 Herbaceous: 5  
 Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Height classes: 1= $\leq 1/2$ m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $\geq 50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

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**Combined Vegetation Rapid Assessment and Relevé Field Form**  
(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Encelia (actonii, virginensis) - Viguiera reticulata Shrubland</u>	
			Association <u>Encelia actonii Association</u>	
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION				
Database #:	Date:	Name of recorder:	circle: Relevé or RA	
<u>051803GN</u>	<u>5/18/17</u>	<u>Anthony Nix</u>		
Location Name:		<u>KEAN</u>		
GPS name: <u>70740</u>		For Relevé only: Bearing°, left axis at ID point _____ of Long / Short side		
UTME _____		UTMN _____ Zone: 11 NAD83 GPS error: ft./ m./ PDOP _____		
Decimal degrees: LAT <u>35.44195803</u>		LONG <u>118.78914949</u>		
GPS within stand? <u>Yes</u> <input checked="" type="checkbox"/> No <input type="checkbox"/>		If No, cite from GPS to stand: distance (m) _____ bearing° _____ inclination° _____		
and record: Base point ID _____		Projected UTM: UTM _____ UTMN _____		
Camera Name: <u>Fulcrum</u>		Cardinal photos at ID point: <u>N, E, S, W</u>		
Other photos: <u>on JD Photo locations app - needs to be moved</u>				
Stand Size (acres): <1, 1-5, <u>5</u>		Plot Size (m²): <u>100</u>   Plot Shape _____ x _____ m   RA Radius <u>3</u> m		
Exposure, Actual°: <u>180</u> NE NW SE SW Flat Variable   Steepness, Actual°: <u>NA</u> 0° 1-5° <u>&gt;5-25°</u> >25				
Topography: Macro: <u>top</u> upper mid lower bottom   Micro: <u>convex</u> flat concave undulating				
Geology code: _____		Soil Texture code: _____   <u>Upland</u> or Wetland/Riparian (circle one)		
% Surface cover: _____		(Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)		
H:0: <u>0</u> BA Stems: <u>2</u> Litter: <u>1</u> Bedrock: <u>2</u> Boulder: <u>2</u> Stone: <u>1</u> Cobble: <u>0</u> Gravel: <u>0</u> Fines: <u>97</u> =100%				
% Current year bioturbation <u>0</u>		Past bioturbation present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   % Hoof punch <u>0</u>		
Fire evidence: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (circle one) If yes, describe in Site history section, including date of fire, if known.				
Site history, stand age, comments:  <u>old access road leading to tower, very little disturbance, a barbed wire fence separates the tower from rest of plot</u>				
Disturbance code / Intensity (L,M,H): <u>05 L 15 L</u> "Other" _____				
II. HABITAT DESCRIPTION				
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)				
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)				
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)				
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)				
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)				
III. INTERPRETATION OF STAND				
Field-assessed vegetation Alliance name: <u>Encelia (actonii, virginensis) - Viguiera reticulata Shrubland</u>				
Field-assessed Association name (optional): <u>Encelia actonii Association</u>				
Adjacent Alliances/direction: _____				
Confidence in Alliance identification: L M <u>H</u> Explain: <u>Used CMU in field</u>				
Phenology (E,P,L): Herb <u>P</u> Shrub <u>P</u> Tree <u>X</u> Other identification or mapping information: _____				



Database #: 05180367N

SPECIES SHEET

% NonVasc cover: 0 Total % Vasc Veg cover: 95

Height Class - Conifer tree / Hardwood tree: 1 Regenerating Tree: — Shrub: 2 Herbaceous: 1

**Stratum categories:** T=Tree, A= Sapling, E= Seedling, S= Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

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# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

<b>For Office Use:</b>	<b>Final database #:</b>	<b>Final vegetation type:</b>	<b>Alliance</b> <i>Encelia [actonii, virginensis] – Viguiera reticulata Shrubland Alliance</i>
		<b>Association</b> <i>Encelia actonii Association</i>	
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			circle: <b>Relevé</b> or <b>RA</b>
<b>Database #:</b>	<b>Date:</b> 5/1/2018	<b>Name of recorder:</b> Mary Carroll	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	<b>UID:</b>	<b>Other surveyors:</b> Cynthia Nicely	
		<b>Location Name:</b> Kern River	
<b>GPS name:</b> Collector		For Relevé only: <b>Bearing</b> °, left axis at ID point ____ of <b>Long / Short</b> side	
<b>UTME</b> ____ <b>UTMN</b> ____		<b>Zone:</b> 11 <b>NAD83</b> <b>GPS error:</b> ft./ m./ <b>PDOP</b> ____	
<b>Decimal degrees:</b> <b>LAT</b> 35.4466968°		<b>LONG</b> -118.785217°	
<b>GPS within stand:</b> <b>Yes</b> / <b>No</b> If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: <b>Base point ID</b> ____ <b>Projected UTM:</b> <b>UTME</b> ____ <b>UTMN</b> ____			
<b>Camera Name:</b> iPhone7 <b>Cardinal photos at ID point:</b>			
<b>Other photos:</b>			
<b>Stand Size (acres):</b> <1, 1, 5, >5 <b>Plot Area (m<sup>2</sup>):</b> 100 / ____   <b>Plot Dimensions</b> ____ x ____ m   <b>RA Radius</b> ____ m			
<b>Exposure, Actual °:</b> ____ <b>NE</b> <b>NW</b> <b>SE</b> <b>SW</b> <b>Flat</b> <b>Variable</b>   <b>Steepness, Actual °:</b> ____ <b>0°</b> <b>1-5°</b> <b>&gt; 5-25°</b> <b>&gt; 25°</b>			
<b>Topography: Macro:</b> top upper <b>mid</b> lower bottom   <b>Micro:</b> <b>convex</b> flat concave undulating			
<b>Geology code:</b> ____ <b>Soil Texture code:</b> ____   <b>Upland</b> or <b>Wetland/Riparian</b> (circle one)			
<b>% Surface cover:</b> (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
<b>H<sub>2</sub>O:</b> <b>BA Stems:</b> <b>Litter:</b> <b>Bedrock:</b> 60 <b>Boulder:</b> <b>Stone:</b> 10 <b>Cobble:</b> 15 <b>Gravel:</b> 5 <b>Fines:</b> 5 =100%			
<b>% Current year bioturbation</b> <b>yes</b> <b>Past bioturbation present?</b> <b>Yes</b> / <b>No</b>   <b>% Hoof punch</b> ____			
<b>Fire evidence:</b> <b>Yes</b> / <b>No</b> (circle one) If yes, describe in Site history section, including date of fire, if known.			
<b>Site history, stand age, comments:</b>			
Scattered <i>Encelia actonii</i> and <i>Ambrosia salsola</i> with mix of native and non-native forbs and grasses. Kern mallow observed along access road to utility tower that bisects the stand. Evidence of active grazing, including trails. Shrub density might be higher in the absence of rangeland grazing, shrubs more common on rocky south- to southwest-facing steep slopes. Very little soil development, rocky. Non-native grasses such as <i>Bromus madritensis</i> subsp. <i>rubens</i> and <i>Avena barbata</i> common, <i>Erodium</i> also, along with many native forbs in low numbers, especially amongst rocks.			
<b>Disturbance code / Intensity (L,M,H):</b> 04/M 05/M / ____ / ____ / ____ "Other" ____ / ____			
<b>II. HABITAT DESCRIPTION</b>			
<b>Tree DBH:</b> <b>T1</b> (<1" dbh), <b>T2</b> (1-6" dbh), <b>T3</b> (6-11" dbh), <b>T4</b> (11-24" dbh), <b>T5</b> (>24" dbh), <b>T6</b> multi-layered (T3 or T4 layer under T5, >60% cover)			
<b>Shrub:</b> <b>S1</b> seedling (<3 yr. old), <b>S2</b> young (<1% dead), <b>S3</b> mature (1-25% dead), <b>S4</b> decadent (>25% dead)			
<b>Herbaceous:</b> <b>H1</b> (<12" plant ht.), <b>H2</b> (>12" ht.)			
<b>Desert Riparian Tree/Shrub:</b> <b>1</b> (<2ft. stem ht.), <b>2</b> (2-10ft. ht.), <b>3</b> (10-20ft. ht.), <b>4</b> (>20ft. ht.)			
<b>Desert Palm/Joshua Tree:</b> <b>1</b> (<1.5" base diameter), <b>2</b> (1.5-6" diam.), <b>3</b> (>6" diam.)			
<b>III. INTERPRETATION OF STAND</b>			
<b>Field-assessed vegetation Alliance name:</b> <i>Encelia [actonii, virginensis] – Viguiera reticulata Shrubland Alliance</i>			
<b>Field-assessed Association name (optional):</b> <i>Encelia actonii Association</i>			
<b>Adjacent Alliances/direction:</b> ____ / ____ , ____ / ____			
<b>Confidence in Alliance identification:</b> <b>L</b> <b>M</b> <b>H</b> <b>Explain:</b> Confirmed identification of dominants with Jepson Manual			
<b>Phenology (E,P,L):</b> <b>Herb</b> <b>P</b> <b>Shrub</b> <b>P</b> <b>Tree</b> <b>X</b> <b>Other identification or mapping information:</b>			



(Revised March 27, 2018)

SPECIES SHEET

**% NonVasc cover:**      **Total % Vasc Veg cover:**

*Height classes:* 1= $\leq 1/2$ m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $\geq 50$ m

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:** \_\_\_\_\_



# CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Version Revised Feb 21, 2007)

4

For Office Use: Final database #: Final vegetation type name: Alliance Ephedra californica - Ephedra trifurca Shrubland Alliance Association Ephedra californica / annual - perennial herb

## I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

Polygon/Stand #: Air photo #: Date: Name(s) of surveyors:

3/28/17 Montijo, R

GPS waypoint #: GPS name: GPS datum: (e.g. NAD 83) Zone: 10S / 10T / 11S (circle one)

UTM field reading: UTM E 35.284499° UTM N -118.807616 GPS Error: ± 12 (ft) m

Is GPS within stand? Yes No If No, cite from GPS point to stand, the distance (in meters) and bearing (degrees)

Elevation: 621 (ft) m Photograph #'s: IMG 20170328 -11.0340 952

Geology code: DUNE Soil Texture code: MESN | Upland or Wetland/Riparian (circle one)  
Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating (circle one)

% Surface cover: Lg rock: Sm rock: Bare/Fine: 60 Litter: 10 BA Stems: 30 Water: =sums to 100%  
(>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud)

Slope exposure, Actual °: General: NE NW SE SW Flat Variable /All (circle one)

Slope steepness, Actual °: 12 General: 0° 1-5° 5-25° > 25° (circle one)

Size of stand: <1 acre 1-5 acres X >5 acres Plot: Yes / No If yes, denote size: 100 m<sup>2</sup> / 400 m<sup>2</sup> / 1000 m<sup>2</sup> / Other

Site history, stand age, and comments: DUNE, RELATIVELY UNDISTURBED

SINCE AT LEAST 1933 according to collections by L. BENSON  
+ AERIALS

Type/ Level of disturbance codes: H / L S / L / / / "Other"

## II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.:

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: 20 Total % Veg cover: 30



Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
L	EPHEDRA CALIFORNICA	8			
S	OPUNTIA BASILARIS TRELEASEI	5			
N	BROMUS MADRITENSIS RUBENS	10			
H	HIRSCHFELDT INCANA	2			
H	ERODIUM BOTRYS	1			
H	" CUCURBITARIA	2			
H	CHAENACTIS GABRIELIANA	0.2			
H	SALVIA CROUACEA	0.5		TRACE / small	

Unusual species: OPUNTIA BASILARIS TRELEASEI

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: \_\_\_\_\_

Field-assessed association name (optional): EPHEDRA CALIFORNICA / ANNUAL-PERENNIAL  
HERB ASSOC.

Adjacent alliances: LEPIDOSPARTUM SQUAMATUM

Confidence in alliance identification: L M H Explain: Japan / MCV

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_



(Revised March 27, 2018)

Page 1



(Revised March 27, 2018)

SPECIES SHEET

**% NonVasc cover:** 0      **Total % Vasc Veg cover:** 98

*Height classes:* 1= $\leq 1/2$ m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $\geq 50$ m

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:** \_\_\_\_\_



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Ericameria nauseosus shrubland alliance</u>
			Association <u>Ericameria nauseosa Association</u>
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			circle: Relevé or <u>RA</u>
Database #: <u>051817AT02</u>	Date: <u>051817</u>	Name of recorder: <u>Alyssa Taylor</u>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		Other surveyors: <u>Cecile Shonet</u>	
Location Name: <u>Tehachapi line / Kern</u>			<input type="checkbox"/>
GPS name: <u>72111</u>		For Relevé only: Bearing°, left axis at ID point ____ of <u>Long</u> / <u>Short</u> side	
UTME _____ UTMN _____		Zone: <u>11</u> NAD83 GPS error: ft./ m./ PDOP _____	
Decimal degrees: LAT <u>35° 10' 41.7"</u>		LONG <u>-118° 53' 58.39"</u>	
GPS within stand? <u>(Yes)</u> / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID _____ Projected UTM: UTME _____ UTMN _____			
Camera Name: <u>Fulcrum</u> Cardinal photos at ID point: <u>N E S W</u>			
Other photos: _____			
Stand Size (acres): <1, 1-5, <u>&gt;5</u>   Plot Size (m²): 100 / ____   Plot Shape ____ x ____ m   RA Radius <u>25</u> m			
Exposure, Actual °: ____ <u>(NE)</u> NW SE SW Flat Variable   Steepness, Actual °: ____ 0° <u>1-5°</u> >5-25° >25			
Topography: Macro: top upper mid lower <u>bottom</u>   Micro: convex <u>flat</u> concave undulating			
Geology code: <u>SETU</u> Soil Texture code: <u>MESD</u>   <u>Upland</u> or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H <sub>2</sub> O: / BA Stems: Litter: Bedrock: / Boulder: / Stone: / Cobble: / Gravel: Fines: =100%			
% Current year bioturbation ____ Past bioturbation present? Yes / No   % Hoof punch ____			
Fire evidence: Yes / <u>No</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>SCE alignment</u> <u>Agriculture</u> <u>Grazing</u> <u>Access roads</u>			
Disturbance code / Intensity (L,M,H): <u>04 / L 05 / M 15 / L</u> ____ / ____ / ____ "Other" ____ / ____			
II. HABITAT DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: <u>1</u> (<2ft. stem ht.), <u>2</u> (2-10ft. ht.), <u>3</u> (10-20ft. ht.), <u>4</u> (>20ft. ht.)			
Desert Palm/Joshua Tree: <u>1</u> (<1.5" base diameter), <u>2</u> (1.5-6" diam.), <u>3</u> (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <u>Ericameria nauseosus shrubland alliance</u>			
Field-assessed Association name (optional): <u>Ericameria nauseosa Association</u>			
Adjacent Alliances/direction: ____ / ____ / ____			
Confidence in Alliance identification: L M <u>(H)</u> Explain: <u>MCV / JEPSON</u>			
Phenology (E,P,L): Herb <u>P</u> Shrub <u>E</u> Tree ____ Other identification or mapping information: ____			



(Revised April 28, 2016)

SPECIES SHEET

% NonVasc cover:      Total % Vasc Veg cover: 60

**Height Class** - Conifer tree / Hardwood tree: \_\_\_\_ / \_\_\_\_      Regenerating Tree: \_\_\_\_      Shrub: 2      Herbaceous: 1

Stratum categories: T=Tree, A=SApling, E=SEedling, S=Shrub, H=Herb, N=Non-vascular  
% Cover Intervals for reference: r=trace, +=<1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:**



(Revised March 27, 2018)

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(Revised March 27, 2018)

BVG1426

## SPECIES SHEET

% NonVasc cover: \_\_\_\_\_ Total % Vasc Veg cover: 96

Shrub: 2 Herbaceous:

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

[illegible]

**Unusual species:**



**Combined Vegetation Rapid Assessment and Relevé Field Form**  
(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Eriogonum fasciculatum</u> <span style="float:right">Shrubland Alliance</span> Association <u>Eriogonum fasciculatum Association</u>
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Database #: <u>051703</u>	Date: <u>051717</u>	Name of recorder: <u>Alyssa Taylor</u>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		Other surveyors: <u>Cecile Shihet</u>	
Location Name: <u>Lebec, CA Kern 2.1</u>			
GPS name: <u>70706</u>		For Relevé only: Bearing°, left axis at ID point ____ of <u>Long</u> / <u>Short</u> side	
UTME _____ UTMN _____		Zone: <u>11</u> NAD83 GPS error: ft./ m./ PDOP _____	
Decimal degrees: LAT <u>34.83354016558989</u>		LONG <u>-118.8534708818012</u>	
GPS within stand? <u>Yes</u> / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID _____ Projected UTM's: UTME _____ UTMN _____			
Camera Name: <u>fulcrum</u> Cardinal photos at ID point: <u>NESW</u>			
Other photos: _____			
Stand Size (acres): <1, 1-5, <u>&gt;5</u>   Plot Size (m²): 100 / ____   Plot Shape ____ x ____ m   RA Radius <u>25</u> m			
Exposure, Actual °: ____ NE NW SE <u>SW</u> Flat Variable   Steepness, Actual °: ____ 0° <u>1-5°</u> > 5-25° > 25			
Topography: Macro: top <u>upper</u> mid lower bottom   Micro: <u>convex</u> flat concave undulating			
Geology code: <u>SETU</u> Soil Texture code: <u>MESD</u>   <u>Upland</u> or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H <sub>2</sub> O: <u>✓</u> BA Stems: <u>2</u> Litter: <u>10</u> Bedrock: <u>3</u> Boulder: <u>7</u> Stone: <u>1</u> Cobble: <u>✓</u> Gravel: <u>25</u> Fines: <u>53</u> =100%			
% Current year bioturbation <u>&lt;1</u> Past bioturbation present? Yes / <u>No</u>   % Hoof punch ____			
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>SEE alignment, clearing, access roads</u>			
Disturbance code / Intensity (L,M,H): <u>04/M 05/H 15/M</u> / ____ / ____ "Other" ____ / ____			
<b>II. HABITAT DESCRIPTION</b>			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
<b>III. INTERPRETATION OF STAND</b>			
Field-assessed vegetation Alliance name: <u>Eriogonum fasciculatum</u> <span style="float:right">Shrubland Alliance</span>			
Field-assessed Association name (optional): <u>Eriogonum fasciculatum Association</u>			
Adjacent Alliances/direction: _____			
Confidence in Alliance identification: L M <u>H</u> Explain: <u>MCV / JEPSON</u>			
Phenology (E,P,L): Herb <u>L</u> Shrub <u>P</u> Tree _____ Other identification or mapping information: _____			



(Revised April 28, 2016)

SPECIES SHEET

% NonVasc cover: \_\_\_\_\_ Total % Vasc Veg cover: 65

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Unusual species: \_\_\_\_\_



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

*Lepidospartum squamatum* / ephemeral annuals Association

For Office Use:	Final database #:	Final vegetation type:	Alliance Association
			<i>Lepidospartum squamatum</i> <i>Shrubland Alliance</i>

## I. LOCATION/ENVIRONMENTAL DESCRIPTION

Database #:	Date:	Name of recorder:
051701	05 17 17	Alyssa Taylor
		Other surveyors:
		Becile Shubert
Location Name: Kern 2.1		

ne: NW

For Relevé only: Bearing°, left axis at ID point \_\_\_\_ of Long / Short side

UTMN

Zone: 11 NAD83 GPS error: ft./ m./ PDOP \_\_\_\_

Decimal degrees: LAT 35.12385724 LONG -118.84114746

GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) \_\_\_\_ bearing ° \_\_\_\_ inclination ° \_\_\_\_  
and record: Base point ID \_\_\_\_ Projected UTM: UTME \_\_\_\_ UTMN \_\_\_\_

Camera Name: TVcam Cardinal photos at ID point:  
Other photos:

Stand Size (acres): <1, 1-5, >5 | Plot Size (m²): 100 / \_\_\_\_ | Plot Shape \_\_\_\_ x \_\_\_\_ m | RA Radius 25 m  
Exposure, Actual °: \_\_\_\_ NE NW SE SW Flat Variable | Steepness, Actual °: \_\_\_\_ 0° 1-5° >5-25° >25

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating  
Geology code: \_\_\_\_ Soil Texture code: \_\_\_\_ | Upland or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)  
H2: 4 BA Stems: 2 Litter: 5 Bedrock: Boulder: Stone: Cobble: Gravel: 10 Fines: 83=100%

% Current year bioturbation \_\_\_\_ Past bioturbation present? Yes / No | % Hoof punch \_\_\_\_

Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

SCE alignment  
grazing  
roads  
Ag land

Disturbance code / Intensity (L,M,H): 04, M 05, H 15, m \_\_\_\_ "Other" \_\_\_\_

## II. STAND DESCRIPTION

H: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)  
S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.)

Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)

## III. INTERPRETATION OF STAND

Assessed vegetation Alliance name: *Lepidospartum squamatum*

Assessed Association name (optional): *Lepidospartum squamatum* / ephemeral annuals Association

Adjacent Alliances/direction: \_\_\_\_

Confidence in Alliance identification: L M H Explain: MCV/Depson

Phenology (E,P,L): Herb L Shrub E Tree Other identification or mapping information:



## SPECIES SHEET

### VEGETATION DESCRIPTION

% NonVasc cover:          Total % Vasc Veg cover: 85

Height Class - Conifer tree / Hardwood tree:      /      Regenerating Tree:      Shrub: 3 Herbaceous: 1

Height classes: 1= $\leq 1/2$ m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $\geq 50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H=Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Page 2



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Lepido spartum shrubland Alliance</u> Association <u>Lepidospartum squamatum / ephemeral annuals Association</u>
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			circle: Relevé or (RA)
Database #:	Date:	Name of recorder:	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<u>051917AT02</u>	<u>05 19 17</u>	Other surveyors: <u>Cecilia Shohet</u>	
Location Name: <u>fern line</u>			<input type="checkbox"/>
GPS name: <u>72111</u>			For Relevé only: Bearing°, left axis at ID point _____ of Long / Short side
UTME _____ UTMN _____			Zone: 11 NAD83 GPS error: ft./ m./ PDOP _____
Decimal degrees: LAT <u>35° 39' 44.9177</u> LONG <u>-118° 08' 21.915</u>			
GPS within stand? (Yes) / No			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____			
and record: Base point ID _____ Projected UTM: UTME _____ UTMN _____			<input type="checkbox"/>
Camera Name: <u>Fulcrum</u> Cardinal photos at ID point: <u>NESW</u>			<input type="checkbox"/>
Other photos:			<input type="checkbox"/>
Stand Size (acres): <1, 1-5, <u>&gt;5</u>   Plot Size (m²): 100 / _____   Plot Shape _____ x _____ m   RA Radius <u>25</u> m			<input type="checkbox"/>
Exposure, Actual °: _____ <u>NE</u> NW SE SW Flat Variable   Steepness, Actual °: _____ 0° <u>1-5°</u> > 5-25° > 25			<input type="checkbox"/>
Topography: Macro: top upper mid <u>lower</u> bottom   Micro: convex flat concave <u>undulating</u>			<input type="checkbox"/>
Geology code: _____ Soil Texture code: _____   <u>Upland</u> or Wetland/Riparian (circle one)			<input type="checkbox"/>
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H <sub>2</sub> O: / BA Stems: <u>2</u> Litter: <u>10</u> Bedrock: / Boulder: / Stone: / Cobble: <u>2</u> Gravel: <u>5</u> Fines: <u>81</u> =100%			<input type="checkbox"/>
% Current year bioturbation <u>2</u> Past bioturbation present? (Yes) / No   % Hoof punch <u>5</u>			<input type="checkbox"/>
Fire evidence: Yes / <u>No</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			<input type="checkbox"/>
Site history, stand age, comments: <u>see alignment</u> <u>Grazing</u> <u>Access roads</u>			<input type="checkbox"/>
Disturbance code / Intensity (L,M,H): <u>04 / H</u> <u>05 / H</u> <u>15 / M</u> _____ "Other" _____			<input type="checkbox"/>
II. HABITAT DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			<input type="checkbox"/>
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			<input type="checkbox"/>
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			<input type="checkbox"/>
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <u>Lepido spartum shrubland Alliance</u>			<input type="checkbox"/>
Field-assessed Association name (optional): <u>Lepidospartum squamatum / ephemeral annuals Association</u>			<input type="checkbox"/>
Adjacent Alliances/direction: _____			<input type="checkbox"/>
Confidence in Alliance identification: L M <u>H</u> Explain: <u>MCU / Jenson</u>			<input type="checkbox"/>
Phenology (E,P,L): Herb <u>L</u> Shrub <u>E</u> Tree _____ Other identification or mapping information:			<input type="checkbox"/>



(Revised April 28, 2016)

SPECIES SHEET

% NonVasc cover: \_\_\_\_\_ Total % Vasc Veg cover: 60

Height Class - Conifer tree / Hardwood tree:      /      Regenerating Tree:      Shrub: 2 Herbaceous: 1

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Unusual species: \_\_\_\_\_



# CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Version Revised Feb 21, 2007)

7

CVI

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association: <u>Quercus john-tuckeri Shrubland Alliance</u>
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			<u>Quercus john-tuckeri Association</u>
Polygon/Stand #:	Air photo #:	Date: <u>4/4/17</u>	Name(s) of surveyors: <u>RICHARD MONTANO</u>
GPS waypoint #: <u>CVI</u> GPS name: <u>2</u> GPS datum: (e.g. NAD 83) _____ Zone: 10S / 10T / 11S (circle one)			
UTM field reading: UTME <u>34.876688</u> UTMN <u>-118.900542</u> GPS Error: $\pm$ <u>12</u> (ft) m			
Is GPS within stand? <u>Yes</u> / No If No, cite from GPS point to stand, the distance _____ (in meters) and bearing _____ (degrees)			
Elevation: <u>4145</u> (ft) m Photograph #'s: <u>5, 327</u>			
Geology code: <u>GRAN</u> Soil Texture code: <u>COLS</u>   <u>Upland</u> or Wetland/Riparian (circle one)			
Topography: Macro: top <u>upper</u> mid lower bottom   Micro: convex flat concave undulating (circle one)			
% Surface cover: Lg rock: _____ Sm rock: <u>40</u> Bare/Fine: <u>50</u> Litter: <u>5</u> BA Stems: <u>5</u> Water: _____ =sums to 100% (>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud)			
Slope exposure, Actual °: _____ General: <u>NE</u> NW SE SW Flat Variable/All (circle one)			
Slope steepness, Actual °: <u>44</u> General: 0° 1-5° 5-25° <u>&gt;25°</u> (circle one) <u>(612°) ADJACENT</u>			
Size of stand: <1 acre _____ 1-5 acres <u>X</u> >5 acres _____ Plot: <u>Yes</u> / No If yes, denote size: 100 m <sup>2</sup> / 400m <sup>2</sup> / 1000 m <sup>2</sup> / Other			
Site history, stand age, and comments: <u>ROAD ACCESS DISTURBANCE IS MINOR</u>			
Type/ Level of disturbance codes: <u>TIL SIM</u> _____ "Other"			
II. HABITAT AND VEGETATION DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> (multi-layered) (circle one)			
If Tree, list 1-3 dominant overstory spp. <u>Quercus john-tuckeri</u>			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.) Desert Riparian Tree/Shrub: <u>1</u> (<2ft. stem ht.), <u>2</u> (2-10ft. ht.), <u>3</u> (10-20ft. ht.), <u>4</u> (>20ft. ht.)			
Desert Palm/Joshua Tree: <u>1</u> (<1.5" base diameter), <u>2</u> (1.5-6" diam.), <u>3</u> (>6" diam.) % NonVasc cover: _____ Total % Veg cover: <u>65</u>			

GRANITE  
CERCAVIA



Ta

CVI

% Cover - Overstory Tree Conifer/Hardwood: 2 / Understory tree-Tall shrub: 40 Shrub: 20 Herbaceous:   

Height Class - Overstory Conifer/Hardwood:    / Understory tree-Tall shrub:    Shrub: 04 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

TALL SHRUB  
SHORT TREE  
↑

Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
T	<del>Quercus john-tuckeri</del>				
S	Yucca whipplei	5-15			
T	Acacia californica	1-5			
H	Bromus diandrus	50-75			

Unusual species: TE SON POPPY W/NW

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Quercus john-tuckeri Shrubland Alliance

Field-assessed association name (optional): Quercus john-tuckeri Association

Adjacent alliances:   

Confidence in alliance identification: L M (H) Explain: Jepson / MCV

Other identification problems:   

Has the vegetation changed since air photo taken? Yes/No If Yes, What has changed?

Polygon is more than one type: (Yes, No)    (Note: type with greatest coverage in polygon should be entered in above section)

Other types:   

## CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Revised Nov 20, 2006)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			
Polygon/Stand #:	Air photo #:	Date:	Name(s) of surveyors:



(Revised March 27, 2018)

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(Revised March 27, 2018)

SPECIES SHEET

% NonVasc cover:      Total % Vasc Veg cover: 145

**Height Class** - Conifer tree / Hardwood tree: \_\_\_\_ / \_\_\_\_    Regenerating Tree: \_\_\_\_    Shrub: 3    Herbaceous: 2

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

[illegible]

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(Revised March 27, 2018)

Page 1



(Revised March 27, 2018)

SPECIES SHEET

**% NonVasc cover:** 0      **Total % Vasc Veg cover:** 100

**Height Class** - Conifer tree / Hardwood tree:            /                 Regenerating Tree:                 Shrub: <sup>3</sup>                Herbaceous: <sup>1</sup>          

*Height classes:* 1= $\leq 1/2$ m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $\geq 50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:** \_\_\_\_\_



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Tamarix Semi-Natural Stands</u>
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION		Association <u>Tamarix spp. Association</u>	circle: Relevé or <u>RA</u>
Database #: <u>051507</u>	Date: <u>5/15/17</u>	Name of recorder: <u>Alyssa Taylor</u>	
Location Name:		Other surveyors: <u>Cecile Shohet, Cynthia Nirely</u>	
GPS name: <u>filen (70706)</u>	For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side		
UTME _____	UTMN _____	Zone: 11 NAD83 GPS error: ft./ m./ PDOP _____	
Decimal degrees: LAT <u>34.83354016558989</u>	LONG <u>-118.8534708818012</u>		
GPS within stand? <u>Yes</u> / No	If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____		
and record: Base point ID _____	Projected UTM: UTME _____ UTMN _____		
Camera Name: <u>filen</u>	Cardinal photos at ID point: <u>NESW</u>		
Other photos: _____			
Stand Size (acres): <1, <u>1-5</u> , >5	Plot Size (m²): 100 / _____	Plot Shape ____ x ____ m	RA Radius <u>25</u> m
Exposure, Actual °: ____ NE NW SE SW <u>Flat</u> Variable	Steepness, Actual °: ____ 0° <u>1-5°</u> > 5-25° > 25		
Topography: Macro: top upper mid lower <u>bottom</u>	Micro: convex <u>flat</u> concave undulating		
Geology code: _____	Soil Texture code: _____ Upland or Wetland/Riparian (circle one)		
% Surface cover:	(Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)		
<u>BA</u> Stems: <u>2</u> Litter: <u>20</u> Bedrock: _____ Boulder: _____ Stone: _____ Cobbles: _____ Gravel: _____ Fines: <u>78=100%</u>			
% Current year bioturbation <u>0</u>	Past bioturbation present? Yes / <u>No</u>   % Hoof punch _____		
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>SCE alignment</u> <u>Roads</u>			
Disturbance code / Intensity (L,M,H): <u>04 IL 05 H</u> / ____ / ____ / ____ "Other" ____ / ____			
II. HABITAT DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: <u>1</u> (<2ft. stem ht.), <u>2</u> (2-10ft. ht.), <u>3</u> (10-20ft. ht.), <u>4</u> (>20ft. ht.)			
Desert Palm/Joshua Tree: <u>1</u> (<1.5" base diameter), <u>2</u> (1.5-6" diam.), <u>3</u> (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <u>Tamarix Semi-Natural Stands</u>			
Field-assessed Association name (optional): <u>Tamarix spp. Association</u>			
Adjacent Alliances/direction: _____ / _____ / _____			
Confidence in Alliance identification: L M H Explain: _____			
Phenology (E,P,L): Herb <u>P</u> Shrub <u>P</u> Tree <u>P</u> Other identification or mapping information: _____			



(Revised April 28, 2016)

SPECIES SHEET

% NonVasc cover: \_\_\_\_\_ Total % Vasc Veg cover: 80

Height Class - Conifer tree / Hardwood tree: 1 Regenerating Tree: 1 Shrub: 4 Herbaceous: 1

Height classes: 1= $\leq 1/2$ m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $\geq 50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

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(Revised March 27, 2018)

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(Revised March 27, 2018)

SPECIES SHEET

% NonVasc cover:      Total % Vasc Veg cover: 9

Height Class - Conifer tree / Hardwood tree: \_\_\_\_\_ / \_\_\_\_\_ Regenerating Tree: \_\_\_\_\_ Shrub: \_\_\_\_\_ Herbaceous: \_\_\_\_\_

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:**



(Revised March 27, 2018)

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BNCL 78

#### IV. VEGETATION DESCRIPTION

**Unusual species:** \_\_\_\_\_



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

*Juncus arcticus* [var. *balticus*, *mexicanus*] Herbaceous Alliance

For Office Use:	Final database #:	Final vegetation type:	Association
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION		circle: Relevé or <b>RA</b>	
Database #: 31501	Date: 05/15/2017	Name of recorder: Alyssa Taylor	Other surveyors: Cecile Shohet, Cynthia Nicely
Location Name: lewec, ca Kern 2.1			
GPS name: 70706 For Relevé only: Bearing°, left axis at ID point ____ of Long / Short side			
UTME _____ UTMN _____ Zone: 11 NAD83 GPS error: ft./ m./ PDOP _____			
Decimal degrees: LAT 34.85315590477954 LONG -118.87229939205274			
GPS within stand? <b>Yes</b> No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID _____ Projected UTM: UTM _____ UTMN _____			
Camera Name: Fulcrum Cardinal photos at ID point: N E S W			
Other photos:			
Stand Size (acres): <1, 1-5, <b>5</b>   Plot Size (m²): 100 / <b>25</b>   Plot Shape ____ x ____ m   RA Radius <b>25</b> m			
Exposure, Actual °: <b>240</b> ° NE <b>NW</b> SE SW Flat Variable   Steepness, Actual °: ____ 0° <b>1-5</b> ° > 5-25° > 25			
Topography: Macro: top upper mid <b>lower</b> bottom   Micro: convex <b>flat</b> concave undulating			
Geology code: <b>SETU</b> Soil Texture code: <b>MESL</b>   Upland or <b>Wetland</b> Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H2O: 1 BA Stems: 2 Litter: 10 Bedrock: 0 Boulder: 0 Stone: 0 Cobble: 0 Gravel: 1 Fines: <b>86</b> =100%			
% Current year bioturbation 1 Past bioturbation present? Yes / <b>No</b>   % Hoof punch 2			
Fire evidence: Yes / <b>No</b> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: SEE alignment, grazing, roads interpersed between non-native grasslands  <b>NOTES</b> went from dry grassland patchy to meadow			
Disturbance code / Intensity (L,M,H): 04 / M 05 / M 15 / L ____ / ____ / ____ "Other" ____ / ____			
II. HABITAT DESCRIPTION			
Tree DBH: <b>T1</b> (<1" dbh), <b>T2</b> (1-6" dbh), <b>T3</b> (6-11" dbh), <b>T4</b> (11-24" dbh), <b>T5</b> (>24" dbh), <b>T6</b> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <b>S1</b> seedling (<3 yr. old), <b>S2</b> young (<1% dead), <b>S3</b> mature (1-25% dead), <b>S4</b> decadent (>25% dead)			
Herbaceous: <b>H1</b> (<12" plant ht.), <b>H2</b> (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <i>Juncus arcticus</i> [var. <i>balticus</i> , <i>mexicanus</i> ] Herbaceous Alliance			
Field-assessed Association name (optional): <i>Juncus arcticus</i> var. <i>balticus</i> Association			
Adjacent Alliances/direction: ____ / ____ / ____			
Confidence in Alliance identification: L M <b>H</b> Explain: <b>MCV</b>			
Phenology (E,P,L): Herb <b>E</b> Shrub <b>E</b> Tree <b>E</b> Other identification or mapping information:			



## SPECIES SHEET

#### IV. VEGETATION DESCRIPTION

% NonVasc cover: 0 Total % Vasc Veg cover: 85

% Cover - Conifer tree / Hardwood tree: 12 Regenerating Tree: 5 Shrub: 1 Herbaceous: 65

**Height Class** - Conifer tree / Hardwood tree: 1 <sup>ft</sup> Regenerating Tree: 6 Shrub: 2 Herbaceous: 1

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

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# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance: <u>Leymus cinereus, Leymus triticoides</u>
			Association: <u>Leymus triticoides, Bromus spp, Avena spp</u>
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			
Database #: <u>1500 687</u>	Date: <u>5/15/17</u>	Name of recorder: <u>Cynthia Nicely</u>	circle: Relevé or RA
UID: <u>687</u>		Other surveyors: <u>Manly Canall</u>	
GPS name: <u>Collector/terruclex</u>		Location Name: <u>Leban alignment - Leber</u>	
UTME		Zone: 11 NAD83 GPS error: ft./m./PDOP	
Decimal degrees: LAT <u>34.838466</u>		LONG <u>118.858084</u>	
GPS within stand? <u>Yes</u> / No If No, cite from GPS to stand: distance (m) bearing° inclination°			
and record: Base point ID Projected UTM: UTME UTMN			
Camera Name: Cardinal photos at ID point:			
Other photos:			
Stand Size (acres): <1, <u>1-5</u> , >5   Plot Area (m²): 100 /   Plot Dimensions x m   RA Radius m			
Exposure, Actual °: NE NW SE SW Flat Variable   Steepness, Actual °: 0° 1-5° >5-25° >25			
Topography: Macro: top upper mid lower bottom   Micro: convex flat concave undulating			
Geology code: Soil Texture code: Upland or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H <sub>2</sub> O: 0 BA Stems: 2 Litter: 1 Bedrock: 0 Boulder: 0 Stone: 0 Cobble: 0 Gravel: 2 Fines: 95 =100%			
% Current year bioturbation Past bioturbation present? Yes / No   % Hoof punch			
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments:			
<p>farm redone for Association determination.</p> <p>determined using field photos</p> <p>added species to original list</p>			
Disturbance code / Intensity (L,M,H): / / / "Other" /			
II. HABITAT DESCRIPTION			
Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)			
Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <u>Leymus cinereus, Leymus triticoides</u>			
Field-assessed Association name (optional): <u>Leymus triticoides, Bromus spp, Avena spp</u>			
Adjacent Alliances/direction: / / /			
Confidence in Alliance identification: L M H Explain:			
Phenology (E,P,L): Herb <u>E</u> Shrub Tree Other identification or mapping information:			



(Revised March 27, 2018)

Database #: BV 647

% NonVasc cover: \_\_\_\_\_ Total % Vasc Veg cover: 105

**% Cover - Conifer tree / Hardwood tree:**      /      /

### Regenerating Tree:

**Shrub:**

Herbaceous: 10.5

**Height Class - Conifer tree / Hardwood tree:** /

### Regenerating Tree:

**Shrub:**

**Herbaceous:** 1

*Height classes:* 1= $\leq 1/2$ m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $\geq 50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:**



(Revised March 27, 2018)

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(Revised March 27, 2018)

SPECIES SHEET

% NonVasc cover:      Total % Vasc Veg cover: 100

**Height Class** - Conifer tree / Hardwood tree: \_\_\_\_ / \_\_\_\_ Regenerating Tree: \_\_\_\_ Shrub: \_\_\_\_ Herbaceous: \_\_\_\_

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

[illegible]

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## (Revised March 27, 2018)

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(Revised March 27, 2018)

SPECIES SHEET

% NonVasc cover:      Total % Vasc Veg cover: 48

Height Class - Conifer tree / Hardwood tree: \_\_\_\_\_ / \_\_\_\_\_ Regenerating Tree: \_\_\_\_\_ Shrub: \_\_\_\_\_ Herbaceous: \_\_\_\_\_

*Height classes:* 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:**



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised April 28, 2016)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Schoenoplectus americanus</u> Herbaceous Alliance Association <u>Schoenoplectus americanus / Lepidium latifolium</u> Association
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			circle: Relevé or RA
Database #:	Date:	Name of recorder:	
<u>BVC 0264</u>	<u>04/05/17</u>	<u>RICARDO MONTIJO</u>	
Location Name:		Other surveyors:	<u>MICHAEL CADY, PAULETTE LABOUEY</u>
GPS name: _____ For Relevé only: Bearing°, left axis at ID point _____ of Long / Short side			
UTME <u>326545</u> UTMN <u>3860970</u> Zone: <u>11</u> NAD83 GPS error: ft./ m./ PDOP _____			
Decimal degrees: LAT <u>34.87631471062769</u> LONG <u>-118.89786955674285</u>			
GPS within stand? <input checked="" type="checkbox"/> Yes / No If No, cite from GPS to stand: distance (m) _____ bearing ° _____ inclination ° _____			
and record: Base point ID _____ Projected UTM: UTME _____ UTMN _____			
Camera Name: _____ Cardinal photos at ID point: _____			
Other photos: <u>IN FULCRUM IN GPS</u>			
Stand Size (acres): <1, <input checked="" type="checkbox"/> 1-5, >5   Plot Size (m²): 100 / _____   Plot Shape _____ x _____ m   RA Radius <u>5</u> m			
Exposure, Actual °: _____ NE NW SE SW <input checked="" type="checkbox"/> Flat Variable   Steepness, Actual °: <input checked="" type="checkbox"/> 0° <input checked="" type="checkbox"/> 1-5° <input checked="" type="checkbox"/> >5-25° <input checked="" type="checkbox"/> >25			
Topography: Macro: top upper mid lower <input checked="" type="checkbox"/> bottom   Micro: convex <input checked="" type="checkbox"/> flat concave undulating			
Geology code: <u>SIAL</u> Soil Texture code: <u>MES1</u>   Upland or <input checked="" type="checkbox"/> Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H2O: <u>30</u> BA Stems: <u>70</u> Litter: <u>0</u> Bedrock: <u>0</u> Boulder: <u>0</u> Stone: <u>0</u> Cobble: <u>0</u> Gravel: <u>0</u> Fines: <u>0</u> =100%			
% Current year bioturbation _____ Past bioturbation present? Yes / <input checked="" type="checkbox"/> No   % Hoof punch _____			
Fire evidence: Yes / <input checked="" type="checkbox"/> No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments: <u>IN WETTED AREA ADJACENT TO WILLOW RIPARIAN AND PERENNIAL PEPPERWEED STANDS (LEPIDIUM LATIFOLIUM)</u>			
Disturbance code / Intensity (L,M,H): <u>1 1 1 1 1 1</u> "Other" _____			
II. HABITAT DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: <u>1</u> (<2ft. stem ht.), <u>2</u> (2-10ft. ht.), <u>3</u> (10-20ft. ht.), <u>4</u> (>20ft. ht.)			
Desert Palm/Joshua Tree: <u>1</u> (<1.5" base diameter), <u>2</u> (1.5-6" diam.), <u>3</u> (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name: <u>AMERICAN BULBUSH</u>			
Field-assessed Association name (optional): <u>Schoenoplectus americanus / Lepidium latifolium</u> Association			
Adjacent Alliances/direction: <u>SALIX LAEVIGATA</u> / <u>E</u> / <u>AESCHOLUS</u> / <u>W</u>			
Confidence in Alliance identification: L M <input checked="" type="checkbox"/> H Explain: _____			
Phenology (E,P,L): Herb <input checked="" type="checkbox"/> Shrub Tree Other identification or mapping information: _____			



(Revised April 28, 2016)

SPECIES SHEET

% NonVasc cover: 30 Total % Vasc Veg cover: 70

**Height Class** - Conifer tree / Hardwood tree: \_\_\_\_ / \_\_\_\_      Regenerating Tree: \_\_\_\_      Shrub: \_\_\_\_      Herbaceous: \_\_\_\_

Height classes: 1= $\leq 1/2$ m, 2= $1/2-1$ m, 3= $1-2$ m, 4= $2-5$ m, 5= $5-10$ m, 6= $10-15$ m, 7= $15-20$ m, 8= $20-35$ m, 9= $35-50$ m, 10= $\geq 50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:**



# CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Version Revised Feb 21, 2007)

11a

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association: <i>Avena</i> spp. - <i>Bromus</i> spp. Semi-Natural Herbaceous Alliance
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## I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION

*Bromus diandrus* - Mixed herbs Association

Polygon/Stand #:	Air photo #:	Date: 4/11/2014	Name(s) of surveyors: NICHOLSON, LABOUE, CASH
------------------	--------------	-----------------	-----------------------------------------------

GPS waypoint #: 11 GPS name: JUD GPS datum: (e.g. NAD 83) 82 Zone: 10S / 10T / 11S (circle one)

Latitude: 35.107972352514146 Longitude: -118.68430236127028

UTM field reading: UTME 346 414.24 UTMN 3 886 314.7 GPS Error: ± 3 ft/m

Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance (in meters) and bearing (degrees)

Elevation: 996 ft/m Photograph #s:

Geology code: CERAN Soil Texture code: COLS Upland or Wetland/Riparian (circle one)  
Topography: Macro: top upper mid lower bottom Micro: convex flat concave undulating (circle one)

% Surface cover: Lg rock: Sm rock: Bare/Fine: Litter: BA Stems: Water: =sums to 100%  
(>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud) 100% ground cover

Slope exposure, Actual °: General: NE NW SE SW Flat Variable / All (circle one)

Slope steepness, Actual °: General: 0° 1-5° 5-25° > 25° (circle one)

Size of stand: <1 acre 1-5 acres X >5 acres Plot: Yes / No If yes, denote size: 100 m² / 400m² / 1000 m² / Other

Site history, stand age, and comments: GRAZING

Type/ Level of disturbance codes: H1m / / / / / "Other"

## II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.:

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1 5" base diameter), 2 (1 5-6" diam.), 3 (>6" diam.) % NonVasc cover: Total % Veg cover: 79% 76



% Cover -Overstory Tree Conifer/Hardwood: 1 Understory tree-Tall shrub: 42 Shrub: 1 Herbaceous: 95

Height Class - Overstory Conifer/Hardwood: 1 Understory tree-Tall shrub:     Shrub: 02 Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
H	<i>Hordeum MARINUM</i>	30			
H	<i>Bromus diandrus</i>	50			
H	<i>Eragrostis ANGLICANA</i>	10			
H	<i>Urtica dioica</i>	1			
S	<i>Psidium L.</i>	1			

Unusual species: \_\_\_\_\_

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Avena spp. - Bromus spp. Semi-Natural Herbaceous Alliance

Field-assessed association name (optional): \_\_\_\_\_

Adjacent alliances: 1

Confidence in alliance identification: L M H Explain: Agave / MCV

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes/No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_

### CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Revised Nov 20, 2006)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			
Polygon/Stand #:	Air photo #:	Date:	Name(s) of surveyors:



alliance: *Avena* spp. - *Bromus* spp. Semi-Natural Herbaceous  
*Bromus diandrus* - Mixed herbs Association Alliance

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GPS waypoint #: 16 GPS name: \_\_\_\_\_ GPS datum: (NAD 83) \_\_\_\_\_ Zone: 10S / 10T / 11S (circle one)

UTM field reading: UTM E 35 10202646 UTM N 118.67394929 GPS Error:  $\pm$  12 (ft) m

Is GPS within stand? Yes / No If No, cite from GPS point to stand, the distance \_\_\_\_\_ (in meters) and bearing \_\_\_\_\_ (degrees)

Elevation: 3799 (ft) m Photograph #'s: \_\_\_\_\_

Geology code: GRAV Soil Texture code: CLS Upland or Wetland/Riparian (circle one)  
Topography: Macro: top upper mid lower bottom | Micro: convex flat ~~concave~~ undulating (circle one)

% Surface cover: Lg rock: 5 Sm rock: 15 Bare/Fine: \_\_\_\_\_ Litter: \_\_\_\_\_ BA Stems: \_\_\_\_\_ Water: \_\_\_\_\_ =sums to 100%  
( $>25$  cm diam) (2mm-25 cm diam) ( $<2$  mm, Incl sand, mud)

Slope exposure, Actual  $^{\circ}$ : \_\_\_\_\_ General: NE NW SE SW Flat Variable /All (circle one)

Slope steepness, Actual  $^{\circ}$ : \_\_\_\_\_ General:  $0^{\circ}$   $1-5^{\circ}$   $5-25^{\circ}$   $>25^{\circ}$  (circle one)

Size of stand:  $<1$  acre \_\_\_\_\_ 1-5 acres 1  $>5$  acres \_\_\_\_\_ Plot: Yes / No If yes, denote size:  $100\text{ m}^2$  /  $400\text{ m}^2$  /  $1000\text{ m}^2$  / Other

Site history, stand age, and comments: RESIDENTIAL DEVELOPMENT  
ADJACENT

Type/ Level of disturbance codes: H1H S1L T1L \_\_\_\_\_ "Other"

## II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 ( $<1''$  dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 ( $>24''$  dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.: QUERCUS DOUGLASSII, PINUS NERABY

Shrub: S1 seedling ( $<3$  yr. old), S2 young ( $<1\%$  dead), S3 mature (1-25% dead), S4 decadent ( $>25\%$  dead)

Herbaceous: H1 ( $<12''$  plant ht.), H2 ( $>12''$  ht.) Desert Riparian Tree/Shrub: 1 ( $<2\text{ ft}$  stem ht.), 2 (2-10 ft. ht.), 3 (10-20 ft. ht.), 4 ( $>20\text{ ft}$  ht.)

Desert Palm/Joshua Tree: 1 ( $<1.5''$  base diameter), 2 (1.5-6" diam.), 3 ( $>6''$  diam.) % NonVasc cover: 10 Total % Veg cover: 80

% Cover -Overstory Tree Conifer/Hardwood: \_\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_\_ Shrub: \_\_\_\_\_ Herbaceous: 80

Height Class - Overstory Conifer/Hardwood: \_\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_\_ Shrub: \_\_\_\_\_ Herbaceous: 41

Height classes: 01= $<1/2\text{ m}$  02= $1/2-1\text{ m}$  03= $1-2\text{ m}$  04= $2-5\text{ m}$  05= $5-10\text{ m}$  06= $10-15\text{ m}$  07= $15-20\text{ m}$  08= $20-35\text{ m}$  09= $35-50\text{ m}$  10= $>50\text{ m}$



% Cover -Overstory Tree Conifer/Hardwood: \_\_\_\_/\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_ Shrub: \_\_\_\_ Herbaceous: 80

Height Class - Overstory Conifer/Hardwood: \_\_\_\_/\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_ Shrub: \_\_\_\_ Herbaceous: \_\_\_\_

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
H	<i>HIRSCHFELDIA ANAETHA</i>	20			
H	<i>Bromus diandrus</i>	60			

Unusual species: \_\_\_\_\_

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: *Avena* spp. - *Bromus* spp. Semi-Natural Herbaceous Alliance

Field-assessed association name (optional): *Bromus diandrus* - Mixed herbs Association

Adjacent alliances: *QUERCUS DOUGLASII* 1

Confidence in alliance identification: L M (H) Explain: JG/MCV

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes/No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_

## CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Revised Nov 20, 2006)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association:
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Polygon/Stand #:	Air photo #:	Date:	Name(s) of surveyors:

*Bromus - HIRSCHFELDIA*



*Avena* spp. - *Bromus* spp. Semi-Natural Herbaceous Alliance

*Bromus diandrus* - Mixed herbs Association

GPS waypoint #: 18 GPS name: \_\_\_\_\_ GPS datum: (NAD 83) 87 Zone: 10S / 10T (11S) (circle one)

UTM field reading: UTME 35.452985481421806 UTMN -118.78168393659035 GPS Error:  $\pm$  12 (ft) m

Is GPS within stand? Yes No If No, cite from GPS point to stand, the distance \_\_\_\_\_ (in meters) and bearing \_\_\_\_\_ (degrees)

Elevation: 1129 (ft) m Photograph #'s: \_\_\_\_\_

Geology code: GRAN Soil Texture code: GRAVITIC ROCK OVER TOP SCARCE SOIL | Upland or Wetland/Riparian (circle one)  
Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating (circle one)

% Surface cover: Lg rock: 50 Sm rock: \_\_\_\_\_ Bare/Fine: 10 Litter: \_\_\_\_\_ BA Stems: 40 Water: \_\_\_\_\_ =sums to 100%  
(>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud)

Slope exposure, Actual  $^{\circ}$ : \_\_\_\_\_ General: NE NW SE SW Flat Variable / All (circle one)

Slope steepness, Actual  $^{\circ}$ : \_\_\_\_\_ General: 0 $^{\circ}$  1-5 $^{\circ}$  5-25 $^{\circ}$  >25 $^{\circ}$  (circle one)

Size of stand: <1 acre \_\_\_\_\_ 1-5 acres \_\_\_\_\_ >5 acres X Plot: Yes / No If yes, denote size: 100 m<sup>2</sup> / 400m<sup>2</sup> / 1000 m<sup>2</sup> / Other

Site history, stand age, and comments: ROADSIDE - WITHIN KERN FLOODPLAIN

Type/ Level of disturbance codes: DS / H \_\_\_\_\_ "Other"

## II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.: \_\_\_\_\_

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: \_\_\_\_\_ Total % Veg cover: \_\_\_\_\_

% Cover -Overstory Tree Conifer/Hardwood: \_\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_\_ Shrub: 15 Herbaceous: 85

Height Class - Overstory Conifer/Hardwood: \_\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_\_ Shrub: 3 Herbaceous: 1

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m



18

15

Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%					
Strata	Species	% cover	Strata	Species	% cover
H	BROMUS DIANDRUS	70			
H	BROMUS MADRIDENSIS RUBENS	50			
S	EUREKA ACTONI	10			
S	ACMISPEC GRACILIS	2			
H	AVENA BARBATA	3			
H	ERIDANZIA CALIFORNICA	<1			

Unusual species: \_\_\_\_\_

III. INTERPRETATION OF STAND

*Avena* spp. - *Bromus* spp. Semi-Natural Herbaceous Alliance

Field-assessed vegetation alliance name: \_\_\_\_\_

*Bromus diandrus* – Mixed herbs Association

Field-assessed association name (optional): \_\_\_\_\_

Adjacent alliances: \_\_\_\_\_

Confidence in alliance identification: L M ☒ H Explain: Jepson / MCV

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_



# Avena spp. - Bromus spp. Semi-Natural Herbaceous Alliance

Bromus diandrus - Mixed herbs Association

GPS waypoint #: 5 GPS name: WNO GPS datum: (NAD 83) NAD 83 Zone: 10S / 10T 11S (circle one)

Latitude: 35.12413110442523 Longitude: -118.71329121504502

UTM field reading: UTM E 34 3887.88 UTM N 3888152.02 GPS Error: ± 2 ft / m

Is GPS within stand? Yes No If No, cite from GPS point to stand, the distance \_\_\_\_\_ (in meters) and bearing \_\_\_\_\_ (degrees)

Elevation: 984 ft (m) Photograph #'s: \_\_\_\_\_

Geology code: GRAN Soil Texture code: CLS | Upland or Wetland/Riparian (circle one)

Topography: Macro: top upper mid lower bottom | Micro: convex flat concave undulating (circle one)

% Surface cover: Lg rock: 5 Sm rock: 5 Bare/Fine: 90 Litter: \_\_\_\_\_ BA Stems: \_\_\_\_\_ Water: \_\_\_\_\_ =sums to 100%  
(>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud)

Slope exposure, Actual °: \_\_\_\_\_ General: NE NW SE SW Flat Variable /All (circle one)

Slope steepness, Actual °: \_\_\_\_\_ General: 0° 1-5° 5-25° > 25° (circle one)

Size of stand: <1 acre \_\_\_\_\_ 1-5 acres X >5 acres \_\_\_\_\_ Plot: Yes / No If yes, denote size: 100 m<sup>2</sup> / 400m<sup>2</sup> / 1000 m<sup>2</sup> / Other

Site history, stand age, and comments: GRAZING

Type/ Level of disturbance codes: H / M \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ "Other"

## II. HABITAT AND VEGETATION DESCRIPTION

Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 (multi-layered) (circle one)

If Tree, list 1-3 dominant overstory spp.: \_\_\_\_\_

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.) Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.) % NonVasc cover: \_\_\_\_\_ Total % Veg cover: \_\_\_\_\_

% Cover -Overstory Tree Conifer/Hardwood: \_\_\_\_\_ / \_\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_\_ Shrub: \_\_\_\_\_ Herbaceous: 100

Height Class - Overstory Conifer/Hardwood: \_\_\_\_\_ / \_\_\_\_\_ Understory tree-Tall shrub: \_\_\_\_\_ Shrub: \_\_\_\_\_ Herbaceous: 01

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m



55  
(5)

Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
H	<i>Bromus diandrus</i>	25			
H	<i>Hesperis matronalis</i>	25			
H	<i>Erodium cicutarium</i>	1			
S	<i>Lesqueria fraginifolia</i>	2			

Unusual species: Mimulus (Diplacus) pictus Rock outcrops west

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Avena spp. - Bromus spp. Semi-Natural Herbaceous Alliance un Alliance

Field-assessed association name (optional): Bromus diandrus - Mixed herbs Association

Adjacent alliances: \_\_\_\_\_

Confidence in alliance identification: L M ☒ H Explain: Jensen / Mar

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes / No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_



Combined Vegetation Rapid Assessment and Relevé Field Form  
(Revised April 28, 2016)

Avena spp. - Bromus spp. Semi-Natural Herbaceous Alliance

For Office Use:	Final database #:	Final vegetation type:	Alliance Association
		Bromus diandrus - Mixed herbs Association	
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			circle: Relevé or RA
Database #:	Date:	Name of recorder:	
051502	05/15/2017	Alyssa Taylor	
		Other surveyors:	Cecile Scholhet; Cynthia Nicely
		Location Name:	Lebec, CA Kern 2.1
GPS name: 70706		For Relevé only: Bearing°, left axis at ID point of Long / Short side	
UTME	UTMN	Zone: 11 NAD83 GPS error: ft./ m./ PDOP	
Decimal degrees: LAT 34.84047496		LONG -118.95927230	
GPS within stand? Yes / No		If No, cite from GPS to stand: distance (m) bearing° inclination°	
and record: Base point ID		Projected UTMs: UTME UTMN	
Camera Name: Fulcrum		Cardinal photos at ID point: N E S W	
Other photos:			
Stand Size (acres): <1, 1-5, >5		Plot Size (m²): 100 / Plot Shape x m RA Radius 25 m	
Exposure, Actual°: NE NW SE SW		Flat Variable Steepness, Actual°: 0° 1-5° >5-25° >25	
Topography: Macro: top upper mid lower bottom		Micro: convex flat concave undulating	
Geology code: Soil Texture code:		Upland or Wetland/Riparian (circle one)	
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H2O: — BA Stems: 3 Litter: 10 Bedrock: — Boulder: — Stone: — Cobble: — Gravel: — Fines: 87 = 100%			
% Current year bioturbation 1 Past bioturbation present? Yes / No		% Hoof punch 2	
Fire evidence: Yes / No (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments:			
GRAZING SCE 2 of way ROADS			
Disturbance code / Intensity (L,M,H): 04 H 05 H 1 S L "Other"			
II. HABITAT DESCRIPTION			
Tree DBH: T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)			
Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
III. INTERPRETATION OF STAND			
Field-assessed vegetation Alliance name			
Field-assessed Association name (option)			
Adjacent Alliances/direction:			
Confidence in Alliance identification: L M H Explain: HCV			
Phenology (E,P,L): Herb P Shrub E Tree — Other identification or mapping information:			



Database #: 051502

SPECIES SHEET

% NonVase cover:      Total % Vase Veg cover: 85

**Height Class** - Conifer tree / Hardwood tree: 1 Regenerating Tree: — Shrub: 2 Herbaceous: 1

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

[illegible]

Page 2



# CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Version Revised Feb 21, 2007)

20

For Office Use:	Final database #:	Final vegetation type name:	Alliance: <u>Avena spp. - Bromus spp. Semi-Natural Herbaceous m</u> Associati: <u>Alliance</u>
I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION			<u>Bromus diandrus - Mixed herbs Association</u>
Polygon/Stand #:	Air photo #:	Date: <u>4/12/2017</u>	Name(s) of surveyors: <u>RICARDO MONTEZ, PAULETTE L. BACOT, M.C. PARR</u>
GPS waypoint #: <u>20</u>	GPS name: <u>Juno</u>	GPS datum: (e.g. NAD 83) <u>83</u>	Zone: 10S / 10T / <u>11S</u> (circle one)
UTM field reading: <u>UTME 35.41706440</u>	UTMN: <u>-118.8082095</u>	GPS Error: $\pm$ <u>12</u> ft/m	
Is GPS within stand? <u>Yes</u> No If No, cite from GPS point to stand, the distance _____ (in meters) and bearing _____ (degrees)			
Elevation: <u>857</u> ft/m Photograph #'s: _____			
Geology code: <u>GRAN</u>	Soil Texture code: <u>SEE 4</u>	Upland or Wetland/Riparian (circle one)	
Topography: Macro: top <u>upper</u> mid lower bottom	Micro: <u>convex</u> flat concave undulating (circle one)		
% Surface cover: Lg rock: _____ Sm rock: _____ Bare/Fine: <u>40</u> Litter: _____ BA Stems: <u>60</u> Water: _____ =sums to 100% (>25 cm diam) (2mm-25 cm diam) (<2 mm, Incl sand, mud)			
Slope exposure, Actual °: _____ General: <u>NE</u> NW SE SW Flat Variable / All (circle one)			
Slope steepness, Actual °: _____ General: 0° 1-5° 5-25° > 25° (circle one)			
Size of stand: <1 acre 1-5 acres >5 acres <u>X</u> Plot: Yes / No If yes, denote size: 100 m <sup>2</sup> / 400m <sup>2</sup> / 1000 m <sup>2</sup> / Other			
Site history, stand age, and comments: <u>PAST GRAZED</u>			
Type/ Level of disturbance codes: <u>H / M</u> _____ "Other"			
II. HABITAT AND VEGETATION DESCRIPTION			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> (multi-layered) (circle one)			
If Tree, list 1-3 dominant overstory spp.: _____			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.) Desert Riparian Tree/Shrub: <u>1</u> (<2ft. stem ht.), <u>2</u> (2-10ft. ht.), <u>3</u> (10-20ft. ht.), <u>4</u> (>20ft. ht.)			
Desert Palm/Joshua Tree: <u>1</u> (<1.5" base diameter), <u>2</u> (1.5-6" diam.), <u>3</u> (>6" diam.) % NonVasc cover: <u>10</u> Total % Veg cover: <u>90</u>			

+ GRAVELLY CLAY LOAM



20

% Cover -Overstory Tree Conifer/Hardwood: \_\_\_\_ / \_\_\_\_ Understory tree-Tall shrub: \_\_\_\_ Shrub: \_\_\_\_ Herbaceous: 90

Height Class - Overstory Conifer/Hardwood: \_\_\_\_ / \_\_\_\_ Understory tree-Tall shrub: \_\_\_\_ Shrub: \_\_\_\_ Herbaceous: 07

Height classes: 01=<1/2m 02=1/2-1m 03=1-2m 04=2-5m 05=5-10m 06=10-15m 07=15-20m 08=20-35m 09=35-50m 10=>50m

Species (List up to 20 major species), Stratum, and Approximate % cover: Stratum categories: T= Overstory tree, U= Understory tree  
S = Shrub, H= Herb, N= Non-vascular. % cover intervals for reference: <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Strata	Species	% cover	Strata	Species	% cover
11	<i>Horisum</i>	30			
H	<i>PLANT. PARVIFLORA</i>	10			
11	<i>Bromus diandrus</i>	50			

Unusual species: \_\_\_\_\_

### III. INTERPRETATION OF STAND

Field-assessed vegetation alliance name: Avena spp. - Bromus spp. Semi-Natural Herbaceous Alliance

Field-assessed association name (optional): Bromus diandrus - Mixed herbs Association

Adjacent alliances: \_\_\_\_\_

Confidence in alliance identification: L ☒ M ☐ H ☐ Explain: MCV / Japan

Other identification problems: \_\_\_\_\_

Has the vegetation changed since air photo taken? Yes / ☒ No If Yes, What has changed?

Polygon is more than one type: (Yes, No) \_\_\_\_\_ (Note: type with greatest coverage in polygon should be entered in above section)

Other types: \_\_\_\_\_

## CALIFORNIA NATIVE PLANT SOCIETY - VEGETATION RAPID ASSESSMENT FIELD FORM

(Desert Revised Nov 20, 2006)

For Office Use:	Final database #:	Final vegetation type name:	Alliance Association:
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Polygon/Stand #:	Air photo #:	Date:	Name(s) of surveyors:



(Revised March 27, 2018)

## Alliance

Page 1



(Revised March 27, 2018)

SPECIES SHEET

% NonVasc cover: \_\_\_\_ Total % Vasc Veg cover: 91

*Height classes:* 1= $\leq 1/2$ m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $\geq 50$ m

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:** \_\_\_\_\_



# Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance <u>Bromus rubens-Schismus (arabicus, barbatus)</u> Association <u>Bromus rubens - mixed herbs</u>
<b>I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION</b>			
Database #:	Date:	Name of recorder:	
<u>nv0849</u>	<u>4/16/19</u>	<u>Mary Candi</u>	
UID:	Other surveyors:	Location Name:	
	<u>Cynthia Nicely</u>	<u>Gorman Post Road, Kern alignment</u>	
GPS name: <u>Collector</u>	For Relevé only: Bearing °, left axis at ID point ____ of Long / Short side		
UTME	UTMN	Zone: 11	NAD83 GPS error: ft./m./PDOP ____
Decimal degrees: LAT <u>34.787392</u> LONG <u>118.82115</u>			
GPS within stand? Yes / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____			
and record: Base point ID ____ Projected UTM: UTME ____ UTMN ____			
Camera Name: <u>Collector</u> Cardinal photos at ID point: ____			
Other photos: ____			
Stand Size (acres): <1, <u>1-5</u> , >5   Plot Area (m²): 100 / ____   Plot Dimensions ____ x ____ m   RA Radius ____ m			
Exposure, Actual °: ____ NE NW SE <u>SW</u> Flat Variable   Steepness, Actual °: ____ 0° <u>1-5°</u> > 5-25° > 25			
Topography: Macro: top upper <u>mid</u> lower bottom   Micro: <u>convex</u> flat concave undulating			
Geology code: ____ Soil Texture code: ____   <u>Upland</u> or Wetland/Riparian (circle one)			
% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)			
H <sub>2</sub> O: <u>0</u> BA Stems: <u>2</u> Litter: <u>1</u> Bedrock: <u>0</u> Boulder: <u>1</u> Stone: <u>0</u> Cobble: <u>5</u> Gravel: <u>5</u> Fines <u>7</u> = 100%			
% Current year bioturbation <u>0</u> Past bioturbation present? Yes / <u>No</u>   % Hoof punch <u>0</u>			
Fire evidence: Yes / <u>No</u> (circle one) If yes, describe in Site history section, including date of fire, if known.			
Site history, stand age, comments:			
Disturbance code / Intensity (L,M,H): ____ / ____ / ____ / ____ / ____ "Other" ____ / ____			
<b>II. HABITAT DESCRIPTION</b>			
Tree DBH: <u>T1</u> (<1" dbh), <u>T2</u> (1-6" dbh), <u>T3</u> (6-11" dbh), <u>T4</u> (11-24" dbh), <u>T5</u> (>24" dbh), <u>T6</u> multi-layered (T3 or T4 layer under T5, >60% cover)			
Shrub: <u>S1</u> seedling (<3 yr. old), <u>S2</u> young (<1% dead), <u>S3</u> mature (1-25% dead), <u>S4</u> decadent (>25% dead)			
Herbaceous: <u>H1</u> (<12" plant ht.), <u>H2</u> (>12" ht.)			
Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)			
Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)			
<b>III. INTERPRETATION OF STAND</b>			
Field-assessed vegetation Alliance name: <u>Bromus rubens-Schismus (arabicus, barbatus)</u>			
Field-assessed Association name (optional): <u>Bromus rubens - Mixed herbs</u>			
Adjacent Alliances/direction: ____ / ____ / ____			
Confidence in Alliance identification: L M H Explain: ____			
Phenology (E,P,L): Herb <u>P</u> Shrub <u>X</u> Tree <u>X</u> Other identification or mapping information: ____			



(Revised March 27, 2018)

Case #: BVL 0549

## SPECIES SHEET

% NonVasc cover: \_\_\_\_\_ Total % Vasc Veg cover: 89

**Height Class** - Conifer tree / Hardwood tree: 7 Regenerating Tree:    Shrub:    Herbaceous: 1

Height classes: 1= $<1/2$ m, 2= $1/2$ -1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $>50$ m

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

**Unusual species:**



(Revised March 27, 2018)

Page 1



(Revised March 27, 2018)

Case #: BK0976

SPECIES SHEET

90

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10

1





(Revised March 27, 2018)

[illegible]



(Revised March 27, 2018)

BUC0903

## SPECIES SHEET

% NonVasc cover: \_\_\_\_\_ Total % Vasc Veg cover: 100

**% Cover -** Conifer tree / Hardwood tree:            /            • Regenerating Tree:            Shrub:            Herbaceous: 100

**Height Class - Conifer tree / Hardwood tree:**      /      **Regenerating Tree:**      **Shrub:**      **Herbaceous:**

*Height classes:* 1= $\leq 1/2$ m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10= $\geq 50$ m

**Stratum categories:** T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

**% Cover Intervals for reference:** r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

[illegible]

**Unusual species:**



Below are photographic representations of the vegetation communities observed on the Gorman - Kern River alignment. The headings are numbered to correspond with the sections of the reports in which they are discussed.

## **4.1 Woodland and Forest Vegetation**

### **4.1.1 California Buckeye Groves (*Aesculus californica* Woodland Alliance)**

#### ***Aesculus californica* Association**



### **4.1.2 California Sycamore – Coast Live Oak Riparian Woodlands**

#### **(*Platanus racemosa* - *Quercus agrifolia* Woodland Alliance)**

#### ***Platanus racemosa* – *Salix laevigata* / *Salix lasiolepis*- *Baccharis salicifolia* Association**





**4.1.3 Fremont Cottonwood Forest and Woodland  
(Populus fremontii – Fraxinus velutina – Salix gooddingii Forest and Woodland Alliance)  
Populus fremontii - Salix (laevigata, lasiolepis, lucida subsp. lasiandra) Association**



***Populus fremontii* – *Salix lasiolepis* Association**





**4.1.4 Canyon Live Oak Forest and Woodland (*Quercus chrysolepis* Forest and Woodland Alliance)**  
***Quercus chrysolepis* Association**



**4.1.5 Blue Oak Woodland and Forest (*Quercus douglasii* Woodland and Forest Alliance)**  
***Quercus douglasii* – *Quercus lobata* Association**





***Quercus douglasii* – *Aesculus californica* / grass Association**



***Quercus douglasii* – *Pinus sabiniana* Association**





***Quercus douglasii* / *Bromus* spp. – *Daucus pusillus* Association**



***Quercus douglasii* / *Eriogonum fasciculatum* Association**





**4.1.6 Valley Oak Woodland (*Quercus lobata* Woodland Alliance)**  
***Quercus lobata* / grass Association**



**4.1.7 Valley Oak Riparian Forest and Woodland (*Quercus lobata* Riparian Forest and Woodland Alliance)**  
***Quercus lobata* – *Salix lasiolepis* Association**





**4.1.8 Mixed Oak Forest and Woodland**  
**(*Quercus [agrifolia, douglasii, garryana, kelloggii, lobata, wislizeni]* Forest and Woodland Alliance)**  
**Mixed oak – *Aesculus californica* / grass Association**



**4.1.9 Goodding's Willow - Red Willow Woodland and Forest**  
**(*Salix gooddingii* - *Salix laevigata* Woodland and Forest Alliance)**  
***Salix laevigata* Association**





***Salix laevigata* / *Salix lasiolepis* Association**



**4.1.10 Shining Willow Groves (*Salix lucida* subsp. *lasiandra* Woodland Alliance)  
*Salix lucida* subsp. *lasiandra* Association**





***Salix lucida* subsp. *lasiandra* / *Urtica urens* – *Urtica dioica* Association**





## 4.2 Shrubland Vegetation

### 4.2.1 Cheesebush- Sweetbush Scrub (*Ambrosia salsola* – *Bebbia juncea* Shrubland Alliance)

#### *Ambrosia salsola* – *Bebbia juncea* Association



### 4.2.2 Mulefat Thickets (*Baccharis salicifolia* Shrubland Alliance)

#### *Baccharis salicifolia* Association



### 4.2.3 Wedge Leaf Ceanothus Chaparral, Buck Brush Chaparral

#### (*Ceanothus cuneatus* Shrubland Alliance)

#### *Ceanothus cuneatus* Association





**4.2.4 Acton's and Virgin River Brittle Brush – Net-veined Goldeneye Scrub  
(*Encelia [actonii, virginensis]* – *Viguiera reticulata* Shrubland Alliance)  
*Encelia actonii* Association**





**4.2.5 California Joint-fir – Longleaf Joint-fir Scrub**  
**(*Ephedra californica* – *Ephedra trifurca* Shrubland Alliance)**  
***Ephedra californica* / annual – perennial Herb Association**



**4.2.6 Narrowleaf Goldenbush – Bladderpod Scrub (*Ericameria linearifolia* – *Cleome isomeris***  
**Shrubland Alliance *Cleome isomeris* Association**





**4.2.7 Rubber Rabbitbrush Scrub  
(*Ericameria nauseosa* Shrubland Alliance)  
*Ericameria nauseosa* Association**



**4.2.8 California Buckwheat Scrub  
(*Eriogonum fasciculatum* Shrubland Alliance)  
*Eriogonum fasciculatum* Association**





**4.2.9 Scalebroom Scrub (*Lepidospartum squamatum* Shrubland Alliance)  
*Lepidospartum squamatum* / ephemeral annuals Association**



**4.2.10 Tucker Oak Chaparral (*Quercus john-tuckeri* Shrubland Alliance)  
*Quercus john-tuckeri* Association**





**4.2.11 Arroyo Willow Thickets (*Salix lasiolepis* Shrubland Alliance)  
*Salix lasiolepis* Association**



***Salix lasiolepis* – *Salix lucida* Association**





**4.2.12 Tamarisk Thickets (*Tamarix* spp. Semi-Natural Stands)**  
***Tamarix* spp. Association**





### 4.3 Grassland and Herbaceous Vegetation Communities

#### 4.3.1 Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows (*Anemopsis californica* – *Helianthus nuttallii* – *Solidago spectabilis* Herbaceous Alliance) *Solidago (confinis, spectabilis)* Association



#### 4.3.2 Salt Grass Flats (*Distichlis spicata* Herbaceous Alliance) *Distichlis spicata* – *Hordeum murinum* Association





**4.3.3 Baltic and Mexican Rush Marshes**  
**(*Juncus arcticus* [var. *balticus*, *mexicanus*] Herbaceous Alliance)**  
***Juncus arcticus* var. *balticus* Association**



**4.3.4 Ashy Ryegrass – Creeping Ryegrass Turfs**  
**(*Elymus* [*Leymus*] *cinereus* - *Elymus* [*Leymus*] *triticoides* Herbaceous Alliance)**  
***Elymus* [*Leymus*] *triticoides* – *Bromus* spp. – *Avena* spp. Association**





**4.3.5 Common Monkey Flower Seeps  
(*Mimulus (guttatus)* Herbaceous Alliance  
*Mimulus guttatus* Association**



**4.3.6 Needle Grass – Melic Grass Grassland  
(*Nassella* spp. – *Melica* spp. Herbaceous Alliance)  
*Nassella cernua* Association**





**4.3.7 American Bulrush Marsh (*Schoenoplectus americanus* Herbaceous Alliance)  
*Schoenoplectus americanus* / *Lepidium latifolium* Association**



**4.3.8 Wild Oats and Annual Brome Grasslands  
(*Avena* spp. – *Bromus* spp. Semi-Natural Herbaceous Alliance)  
*Bromus diandrus* – Mixed herbs Semi-natural Association**





**4.3.9 Red Brome or Mediterranean Grass Grasslands**  
**(*Bromus rubens* – *Schismus* [*arabicus*, *barbatus*] Semi-Natural Herbaceous Alliance)**  
***Bromus rubens* – Mixed herbs Semi-natural Association**



**4.3.10 Cheatgrass – Medusahead Grassland**  
**(*Bromus tectorum* – *Taeniatherum caput-medusae* Semi-natural Herbaceous Alliance)**  
***Bromus tectorum* – *Bromus diandrus* Semi-natural Association**





**4.3.11 Perennial Pepperweed Patches**  
**(*Lepidium latifolium* Herbaceous Alliance)**  
***Lepidium latifolium* Semi-natural Association**





## 4.4 Disturbed and Developed Habitat

### 4.4.1 Active Agriculture



### 4.4.2 Ornamental/Landscaped Areas





#### 4.4.3 Open Water



#### 4.4.4 Developed





#### 4.4.5 Disturbed Habitat





### 1.1.1 Introduction

The following species were not found within the Gorman – Kern River (GKR) alignment during the 2017 - 2019 sensitive plant surveys but have been reported as historical or extant occurrences in the Project region and are discussed here due to their potential to occur in the Project area. They are organized by rarity (the most rare first), and then alphabetically by scientific name. Table 2 includes results of the CNDDDB and CNPS Electronic Inventory search for species whose presence has been reported in the CNDDDB (2019) for quadrangles that span the GKR alignment.

## 1.2 Sensitive Plants with Potential to Occur, but not Observed

Sensitive plant species are presented by California Rare Plant Rank (CRPR) status, and species within the same CRPR are listed in alphabetical order by scientific name. This section reports species that potentially have suitable habitat within the GKR alignment and are likely to be observed. Species discussed in this section have CNDDDB or CCH records that either overlap the GKR alignment or occur within one mile (1.6 kilometers) of the alignment.

### 1.2.1 Tejon Poppy (*Eschscholzia lemmonii* ssp. *kernensis*) - CRPR 1B.1

Tejon poppy is a spring-blooming annual in the Poppy Family (Papaveraceae) that has a CRPR of 1B.1; it is threatened by habitat loss from non-native species competition and animal grazing (CNPS 2019). Tejon poppy produces erect, blue-green dissected leaves with blunt tips that are crowded at the base of the plant, upright pointed buds, deep orange to yellowish petals, and distinctive bur-like seeds.

Tejon poppy occurs in heavy clay soils in grasslands and chenopod scrub at elevations ranging from 650 to 3,300 feet (200 to 1,000 meters) amsl. It is endemic to Kern County in the foothills surrounding the southern end of the San Joaquin Valley, especially on the east side (CCH 2019, Moe 2016).

**Presence in the Project Area:** Surveys for special-status plant species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. Tejon poppy was not observed within the GKR alignment during the surveys.

There are 85 occurrences of Tejon poppy in Kern County; seventeen are within 5 miles (8 kilometers) of the GKR alignment, and six are within 2 miles (3.2 kilometers) of the alignment. A 2002 record (Occurrence #60) overlaps the GKR alignment on a steep hillside within Fort Tejon State Historic Park above lower Johnson Creek. A 2017 record (Occurrence #5) was reported 0.7 miles (1.1 kilometers) east of the alignment on the slopes above Comanche Point in the Tehachapi Mountains. A 2012 record (Occurrence #73) was reported approximately 0.7 miles (1.1 kilometers) east of the alignment on the slopes above Comanche Point in the Tehachapi Mountains. A 2013 record (Occurrence #84) was reported approximately 1.3 miles (2.1 kilometers) east of the GKR alignment on a steep slope on clay-loam soils near the mouth of Comanche Creek. Two 2013 records (Occurrences #64 and #63) were reported approximately 2 miles (3.2 kilometers) east of the GKR alignment in the Tehachapi Mountains near Comanche Creek.

Potentially suitable habitat for Tejon poppy within the GKR alignment occurs on clay, loam, and occasionally sandy substrates on steep grassy slopes near Comanche Point and Fort Tejon Historic State Park below 3,300 feet (1,005 meters) amsl. Unsuitable habitat includes all areas above 3,300 feet (1,005



meters) amsl, all portions of the alignment between the Kern River and Arvin and between El Paso Creek and Grapevine, as well as areas with rocky or gravelly substrates, riparian and wetland vegetation, active agricultural lands, and developed areas.

The Tejon poppy is likely to occur within the GKR alignment in grassland vegetation in and near Fort Tejon State Historic Park and Comanche Point. This species is relatively prevalent in these areas, especially in close proximity to the GKR alignment and could easily be overlooked due to the high densities of California poppy (*Eschscholzia californica*) in the same area. It does not occur elsewhere within the alignment based on the lack of observations of this seasonally conspicuous species.

### 1.3 Sensitive Herbaceous Plants that Are Unlikely or Do Not Occur within the GKR Alignment

Species discussed in this section have CNDDDB or CCH records that are located more than one mile (1.6 kilometers) from the GKR alignment.

#### 1.3.1 Federally-listed Species

Two Federally-listed species are discussed below: Federally Endangered California jewelflower and Federally Threatened San Joaquin adobe sunburst. Both species are also California Endangered and have CRPR of 1B.1.

##### 1.3.1.1 California Jewelflower (*Caulanthus californicus*) – FE, CE, CRPR 1B.1

California jewelflower is a late-winter- to spring-blooming annual in the Mustard Family (Brassicaceae); it is sometimes classified as *Stanfordia californica* by other botanists (NRCS 2019). It is Federally Endangered, California Endangered, and has a CRPR of 1B.1; it is threatened by agriculture, urbanization, energy development, and grazing, and possibly by non-native plant competition (CNPS 2019). California jewelflower produces large basal leaves as well as clasping leaves along the branching flower stalk. Flowers are slightly inflated at the base, with whitish petals with maroon fringed tips. Flowering occurs in February and April. Unlike similar species of *Caulanthus*, the California jewelflower has an elongate fruit flattened perpendicular to the middle of the ovary and contains generally spherical seeds.

California jewelflower occurs on flats, slopes, and non-alkaline grasslands in chenopod scrub, valley and foothill grassland, and pinyon and juniper woodland at elevations from 230 to 3,300 feet (70 to 1,000 meters) amsl. California jewelflower occurs in the southern end of the San Joaquin Valley and surrounding inner Coast Ranges, Sierra Nevada, Tehachapi Mountains (CCH 2019).

**Presence in the Project Area:** California jewelflower was not observed within the GKR alignment during the surveys.

There are four CNDDDB records within 5 miles (8 kilometers) of the GKR alignment, all of which are possibly or likely extirpated. A 1933 record (Occurrence #30) was reported 2 miles (3.2 kilometers) west of the GKR alignment along the Kern River. A 1940 record (Occurrence #20) was reported 4.75 miles (7.6 kilometers) north of the Kern River Hydro Generation Facility. A 1925 record (Occurrence #39) was reported approximately 1.2 miles (2 kilometers) east of the GKR alignment near Caliente Creek. A 1935 record (Occurrence #43) was reported 0.4 miles (0.6 kilometers) west of the GKR alignment south of



Arvin. A 2015 CCH observation was reported approximately 3.2 miles (5.1 kilometers) southwest of the GKR alignment on a south-facing slope above Comanche Creek (CCH 2019).

Potentially suitable habitat within the GKR alignment for California jewelflower includes sandy substrates in Caliente Creek and in washes and on slopes in the Tehachapi Mountains east of Arvin below 3,300 feet (1,000 meters) amsl, although there are no observations of this conspicuous plant in these areas in the past 80 years within 3 miles (5 kilometers) of the GKR alignment. Unsuitable habitat includes heavy soil textures, dense vegetation, elevations above 3,300 feet (1,000 meters), and all croplands and developed areas.

The California jewelflower is unlikely to occur within the GKR alignment. This conspicuous plant has not been observed near the alignment in the past 80 years, populations near Caliente Creek and Arvin have been extirpated, and populations within the Tehachapi Mountains above Comanche Creek are more than 3.2 miles (5.1 kilometers) from the alignment. It does not occur in other areas within the alignment, based on lack of suitable habitat and absence of survey and CNDDDB or other documented observations.

#### 1.3.1.2 San Joaquin Adobe Sunburst (*Pseudobahia peirsonii*) - FT, CE, CRPR 1B.1

San Joaquin adobe sunburst is a spring-blooming annual in the Sunflower Family (Asteraceae) that is Federally Threatened, California Endangered, and has a CRPR of 1B.1; it is seriously threatened by agriculture, grazing, development, competition from non-native plants, road construction, and flood control activities (CNPS 2019). San Joaquin adobe sunburst is a woolly annual plant with divided leaves and bright yellow flowers surrounding by phyllaries that are free almost to the base and lack callouses; flowers appear from March to May.

San Joaquin adobe sunburst occurs in heavy, adobe clay soils in grasslands and woodlands along the eastern and southern margins of the San Joaquin Valley and adjacent foothills at elevations ranging from 320 to 3,000 feet (100 to 900 meters) amsl. San Joaquin adobe sunburst is endemic to limited areas in Fresno, Tulare, and Kern counties (CCH 2019).

**Presence in the Project Area:** Surveys for special-status plant species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. San Joaquin adobe sunburst was not observed within the GKR alignment during the surveys.

There are two CNDDDB records within 10 miles (16 kilometers) of the GKR alignment. A 2016 record (Occurrence #53) was reported approximately 10 miles (16 kilometers) east of the GKR alignment in the foothills of the Sierra Nevada northeast of Caliente. A 2016 record (Occurrence #52) was reported 3 miles (4.8 kilometers) southeast of the alignment in the western Tehachapi Mountains east of Comanche Point; additional observations in this portion of the Tehachapi Mountains are also reported in CCH (2019).

Potentially suitable habitat within the GKR alignment for San Joaquin adobe sunburst includes heavy clay soils in the western Tehachapi Mountains east of Comanche Point below 3,000 feet (900 meters) amsl. Unsuitable habitat includes heavy soil textures, dense vegetation, elevations above 3,300 feet (1,000 meters), and all croplands and developed areas.

There are no observations of the San Joaquin adobe sunburst that overlap the GKR alignment, and this species is unlikely to occur in the western Tehachapi Mountains east of Comanche Point and does not occur in other portions of the alignment.



### 1.3.2 Species with California Rare Plant Ranking

#### 1.3.2.1 Horn's Milk-vetch (*Astragalus hornii* var. *hornii*) - CRPR 1B.1

Horn's milk-vetch is a spring to fall-blooming annual herb in the Legume Family (Fabaceae). It has a CRPR 1B.1; it was previously subject to eradication efforts in early 1900's because it was poisonous to sheep. It is currently threatened by habitat alteration (CNPS 2019). Horn's milk-vetch is an open, branched annual with silvery compound leaves and stems that range from solid to hollow depending on girth (slender to stout). The head-like inflorescence supports up to 35 white to pale lilac flowers that bloom from May to September, followed by papery, hairy inflated fruits that are crowded in a ball-like head.

Horn's milk-vetch occupies alkaline flats, lake shores, margins of playas, and alkaline meadows and seeps at elevation ranging from 200 to 1,000 feet (60 to 305 meters) amsl. Horn's milk-vetch occurs in several locations at the southern end of the San Joaquin Valley in Kern County, as well as in San Bernardino, Los Angeles, and Inyo Counties, northeast into northwestern Nevada and Utah (NRCS 2019).

**Presence in the Project Area:** Horn's milk-vetch was not observed within the GKR alignment during the surveys.

There is one CNDDDB record that overlaps the GKR alignment and multiple occurrences near Bakersfield along the Kern River in open, sandy patches in seasonal wetlands adjacent to the floodplain. An 1863 record (Occurrence #2) overlaps the GKR alignment where it is generally mapped around Fort Tejon State Historic Park. A 1936 record (Occurrence #4) was reported approximately 1 mile (1.6 kilometers) west of the GKR alignment northwest of Arvin. A 1936 CCH record (UC764099) was reported 1.2 miles (1.9 kilometers) east of the alignment in Caliente Creek near the base of the Piute Mountains. A 1945 CCH record (CAS-BOT-BC186892) was reported 1.3 miles (2.1 kilometers) west of the alignment south of Caliente Creek.

Horn's milk-vetch occurs does not occur within the GKR alignment because there are currently no moist alkaline conditions favored by this species, such as near playas, seeps, and lake shores. Although there are GKR ephemerally wet places near the Kern River, these locations are not alkaline. Horn's milk-vetch does not occur in upland grassland, and woodland areas above 1,000 feet (305 meters) amsl.

The Horn's milk-vetch does not occur within the GKR alignment, based on the lack of recent records (in the past 75 years) within 3 miles of the alignment and the absence of suitable moist alkaline habitat within the alignment.

#### 1.3.2.2 Vasek's Clarkia (*Clarkia tembloriensis* subsp. *calientensis*) - CRPR 1B.1

Vasek's clarkia is a spring-blooming annual in the Evening-primrose Family (Onagraceae). It has a CRPR of 1B.1; it is threatened by grazing and non-native plants (CNPS 2019). Vasek's clarkia is an upright herb with gray-green waxy leaves and distinctive lavender-pink clawed petals with diamond-shaped tips to 0.4 inches (10 millimeters) wide, with the stigma not extending beyond the anthers. It blooms in April and May.

Vasek's clarkia occurs in rocky areas in valley and foothill grassland habitats around 1,640 feet (500 meters) amsl. Vasek's clarkia is a highly restricted endemic, known only from Caliente Hills in the southern Sierra Nevada foothills in Kern County (CCH 2019).

**Presence in the Project Area:** Vasek's clarkia was not observed within the GKR alignment during the



surveys.

There are only three CNDDDB records of Vasek's clarkia in Kern County, all within 5 miles (8 kilometers) of the GKR alignment located near Caliente Creek east of the GKR alignment. A 1986 record (Occurrence #3) reports 200 plants southwest of Bena, 2.9 miles (4.6 kilometers) from the GKR alignment. Another 1986 record (Occurrence #2) reports 100 plants in a steep rock ravine approximately 3.7 miles (5.9 kilometers) from the GKR alignment. A 1982 record (Occurrence #1) reports less than 100 plants located approximately 5.7 miles (9.1 kilometers) from the GKR alignment. GKR

This species does not occur within the GKR alignment, based on observations occurring more than 2.9 miles (4.6 kilometers) from the GKR alignment and the lack of recent records within the Project area.

### 1.3.2.3 Tehachapi Buckwheat (*Eriogonum callistum*) - CRPR 1B.1

Tehachapi buckwheat is a spring-blooming annual herb in the Buckwheat Family (Polygonaceae). It has a CRPR of 1B.1 (CNPS 2019). Tehachapi buckwheat is a small, mounded herb with elliptic grayish basal leaves and leafless inflorescences tipped with a ball-shaped cluster of white to ochre flowers that age to rusty-red.

Tehachapi buckwheat is endemic to limestone outcrops in chaparral at elevations ranging from 4,600 to 4,900 feet (1,400 to 1,500 meters) amsl. Tehachapi buckwheat is endemic to southern Kern County in the Tehachapi Mountains east of Lebec and Castac Lake and further east on a ridge generally north of Neenach (CCH 2019).

**Presence in the Project Area:** Tehachapi buckwheat was not observed within the GKR alignment during the surveys.

There are only six CNDDDB locations in Kern County in the Tehachapi Mountains all are east of the GKR alignment along ridges above 4,500 feet (1,370 meters), above the elevation of the alignment in this area.

There are two 2007 records: Occurrence #1 was reported approximately 2.5 miles (4.0 kilometers) from the GKR alignment on limestone outcrops in chaparral, and Occurrence #2 was reported approximately 3.5 miles (5.6 kilometers) from the alignment on limestone outcrops. A 2015 record (Occurrence #5) was reported approximately 11 miles (17.6 kilometers) from the GKR alignment. A 2016 record (Occurrence #6) was reported approximately 11.5 miles (18.4 kilometers) from GKR alignment on limestone outcrops. There are two 2018 records: Occurrence #3 was reported approximately 5 miles (8 kilometers) northeast of the GKR alignment; and Occurrence #4 was reported 10 miles (16 kilometers) northeast of the GKR alignment on limestone outcrops in coniferous and oak woodland at 5,300 feet (1,615 meters) amsl.

The GKR alignment outside of the elevational range for this species (i.e., alignment maximum elevation is 4,531 feet), and there are no limestone outcrops within the alignment. The lack of suitable habitat and observations of this species suggests that this species does not occur within the alignment.

### 1.3.2.4 Fort Tejon Woolly Sunflower (*Eriophyllum lanatum* var. *hallii*) - CRPR 1B.1

Fort Tejon woolly sunflower is a summer-blooming perennial herb in the Sunflower Family (Asteraceae). It has a CRPR of 1B.1; it is threatened by grazing (CNPS 2019). Fort Tejon woolly sunflower has pinnately lobed leaves and 1 to 5 or more small heads of yellow daisy-like flowers that appear from June to July.

Fort Tejon woolly sunflower occurs in rocky soils in foothill woodland and chaparral at elevations ranging from 3,500 to 4,670 feet (1,065 to 1,500 meters) amsl (CNPS 2019). Fewer than ten known occurrences



are found in the mountains of southern Kern County and one location in the Sierra Madre Mountains of Santa Barbara County above Lyon Canyon. In Kern County, observations include the rocky canyon just west of Fort Tejon in the San Emigdio Mountains, nearby Rising Canyon to the immediate southeast in the Tehachapi Mountains, northeast of Castac Lake, and further east on the ridges high above El Paso Creek.

**Presence in the Project Area:** Fort Tejon woolly sunflower was not observed within the GKR alignment during the surveys.

There are only six CNDDDB records of Fort Tejon woolly sunflower, and four are in Kern County. There are two clusters of CNDDDB observations, one cluster west of the GKR alignment and Interstate 5 between Fort Tejon State Historic Park and Grapevine above 3,500 feet (1,065 meters) amsl and the second more than 4 miles (5.6 kilometers) east of the GKR alignment and Castac Lake.

A 1905 record (Occurrence #2) was reported 0.6 miles (1.0 kilometers) west of the GKR alignment in Johnson Canyon in Fort Tejon State Historic Park. A 1995 record (Occurrence #3) was reported 0.8 miles (1.3 kilometers) west of the GKR alignment in mixed oak woodland. A 2004 record (Occurrence #5) was reported 4.1 miles (6.6 kilometers) east of the alignment in the Tehachapi Mountains northeast of Castac Lake. Another 2004 record (Occurrence #6) was reported 5.2 miles (8.4 kilometers) east of the GKR alignment.

Potentially suitable habitat within the GKR alignment for Fort Tejon woolly sunflower includes open rocky areas in chaparral and open oak woodland vegetation between Fort Tejon State Historic Park and Grapevine above 3,500 feet (1,065 meters) amsl. Unsuitable habitat includes riparian and forest communities with dense vegetation above 4,600 feet (1,402 meters) amsl, non-native grasslands, and wetland, agricultural and developed areas below 3,500 feet (1,070 meters) amsl.

Fort Tejon woolly sunflower occurs in open rocky areas in chaparral and open oak woodland vegetation between Fort Tejon State Historic Park and Grapevine above 3,500 feet (1,065 meters) amsl west of the GKR alignment. It could potentially occur within the alignment to the west of Interstate 5 in this area. It could also occur to the east of Interstate 5 in open chaparral and woodland vegetation in precipitous terrain that has not been surveyed but that provides suitable habitat for this species. GKR It does not occur in riparian and forest communities with dense vegetation above 4,600 feet (1,402 meters) amsl, non-native grasslands, and wetland, agricultural and developed areas below 3,500 feet (1,070 meters) amsl.

Fort Tejon woolly sunflower is unlikely to occur within the GKR alignment in open rocky areas in chaparral and open oak woodland vegetation between Fort Tejon State Historic Park and Grapevine above 3,500 feet (1,065 meters) amsl, based on the presence of potential habitat in these areas; it does not occur elsewhere within the alignment.

#### 1.3.2.5 Striped Adobe Lily (*Fritillaria striata*) - CRPR 1B.1

Striped adobe lily is a spring-blooming bulbous perennial herb in the Lily Family (Liliaceae). It has a CRPR of 1B.1; it is threatened by agriculture, urbanization, and non-native plants. It is possibly threatened by vehicles and road maintenance (CNPS 2019). Striped adobe lily produces basal leaves and a leafless flower stalk bearing several large bell-shaped pinkish flowers striated with purple lines or streaks between February and April.



Striped adobe lily occurs in heavy clay soil found in grassland and foothill woodlands below 3,280 feet (1,000 meters) amsl. Striped adobe lily is endemic to Tulare and Kern Counties in the foothills of the Sierra Nevada and the Tehachapi Mountains near Stallion Springs and near Comanche Point (CCH 2019, Moe 2016).

**Presence in the Project Area:** Striped adobe lily was not observed within the GKR alignment during the surveys.

A 1963 CNDDDB record (Occurrence #10) was reported 1.3 miles (2.1 kilometers) northwest of the GKR alignment near the mouth of the Kern River on the north side of the river. There are four records near Pyramid Hill north of the Kern River; the alignment remains on the south side of the Kern River drainage south of the Kern River Hydro Generating Facility. There are also records southwest of Stallion Springs at lower elevations in the Tehachapi Mountains, including a 1987 record (Occurrence #18) reported 2 miles (3.2 kilometers) south of the alignment at 2,400 feet (731 meters) amsl.

Potential suitable habitat for striped adobe lily within the GKR alignment includes heavy clay adobe soils in grasslands and open woodlands below 3,280 feet (1,000 meters) amsl in the Tehachapi Mountains between Stallion Springs and Arvin. However, there are no records of striped adobe lilies that overlap the alignment in this area (or any other area); the alignment occurs at higher elevations to the north of known colonies of striped adobe lilies in the Tehachapi Mountains. The observations near the Kern River drainage are all north of the Kern River and the alignment is located south of the Kern River once it leaves the Kern River Hydro Generating Facility.

The striped adobe lily does not occur within the GKR alignment, based on the lack of suitable habitat, including appropriate soils and elevations in proximity to known occurrence.

#### 1.3.2.6 Coulter's Goldfields (*Lasthenia glabrata* subsp. *coulteri*) - CRPR 1B.1

Coulter's goldfields is a spring-blooming annual in the Sunflower Family (Asteraceae). It has a CRPR of 1B.1; it is seriously threatened by urbanization, agricultural development, road maintenance, and potentially threatened by foot traffic and drought (CNPS 2019). Coulter's goldfields produce narrow, tapered, opposite, clasping leaves. The yellow flower heads appear in April and May, followed by fruits covered in rusty or yellow papillae or protuberances.

Coulter's goldfields occur in saline places, vernal pools, margins of coastal marshes and swamps, and playas at elevation less than 3,280 feet (less than 1,000 meters) amsl. It is endemic to seasonal wetlands in California in the Great Central Valley, in coastal areas from San Francisco south to San Diego, and in a few additional isolated areas.

**Presence in the Project Area:** Coulter's goldfields was not observed within the GKR alignment during the surveys.

There are 22 CNDDDB records in Kern and Los Angeles counties. There are eight occurrences in Kern County, only one, a 1905 record (Occurrence #2), occurs within 10 miles (16 kilometers) of the GKR alignment and it is considered 'possibly extirpated'; it was reported approximately 2 miles (3.2 kilometers) north of the alignment in Tehachapi.

Suitable habitat for Coulter's goldfields is absent within the GKR alignment; there are no coastal salt marshes, playas, or vernal pools within the GKR alignment, and Coulter's goldfields does not occur



within the GKR alignment.

#### 1.3.2.7 Pale-yellow Layia (*Layia heterotricha*) - CRPR 1B.1

Pale-yellow layia is a spring-blooming annual herb in the Sunflower Family (Asteraceae). It has a CRPR of 1B.1; it is threatened by agricultural conversion and previous construction of San Antonio Reservoir, grazing, non-native plants, and vehicles. It is potentially threatened by road maintenance and wind energy development (CNPS 2019). Pale-yellow layia is a glandular plant with apple or banana scent. It has a stout hollow stem which is not purple streaked, unlike similar taxa. The disk flowers are yellow and do not have pappus and the ray flowers are pale yellow. The plant blooms from April to June.

Pale-yellow layia occurs in alkaline or clay soils in cismontane woodland, coastal scrub, pinyon and juniper woodland, and valley and foothill woodland habitats at elevation ranging from 650 to 5,900 feet (200 to 1,800 meters) amsl in coastal areas, the southern coast mountains, the southern Sierra Nevada, and the Tehachapi Mountains. It extends from Contra Costa County to Ventura County, and as far east as Kern County.

**Presence in the Project Area:** Pale-yellow layia was not observed within the GKR alignment during the surveys.

A 1933 record (Occurrence #4) overlaps the GKR alignment in the Tehachapi Valley. A 1995 record (Occurrence #2) was reported approximately 3.5 miles (5.6 kilometers) northeast of the eastern terminus of the GKR alignment at the Highwind substation near Tehachapi. A 2016 record (Occurrence #106) was reported 4.7 miles (7.5 kilometers) northeast of the Highwind substation in a moist and grassy location in Sand Canyon. A 2017 record (Occurrence #105) was reported 6.4 miles (10.2 kilometers) northeast of Cache Creek in the Tehachapi Mountains. A 1995 record (Occurrence #30) was reported 6.7 miles (10.7 kilometers) northeast of the alignment at the base of Sugarloaf Mountain.

Potential scrub habitat for pale-yellow layia occurs GKR in the Tehachapi Valley within the GKR alignment, but these areas are not suitable GKR due to the lack of alkaline soils under current conditions. All other areas within the alignment provide unsuitable habitat for this species, based on the lack of records and observations.

This species does not occur GKR within the GKR alignment in shrublands in the Tehachapi Valley; there are no alkaline soils within the alignment in this area. Pale-yellow layia does not occur elsewhere within the alignment.

#### 1.3.2.8 Comanche Point Layia (*Layia leucopappa*) - CRPR 1B.1

Comanche Point layia is a spring-blooming annual herb in the Sunflower Family (Asteraceae). It has a CRPR of 1B.1; it is reduced by agriculture and threatened by development and grazing (CNPS 2019). Comanche Point layia is a glandular plant without a strong scent. The disk flowers are yellow to brown and form pappus while the ray flowers are white. The plant blooms from March to April.

Comanche Point layia occurs on vernal wet, whitish clay soils on flats in chenopod scrub and grassland vegetation at elevations ranging from 330 to 1,050 feet (100-350 meters) amsl mainly in Kern County with one record in San Bernardino County.

**Presence in the Project Area:** Comanche Point layia was not observed within the GKR alignment during the surveys.



There are ten CNDDDB records in the southern end of the San Joaquin Valley, and nine are within 1 mile (1.6 kilometers) of the GKR alignment. A 1935 record (Occurrence #5) overlaps the GKR alignment in the community of Edison. A 1935 (Occurrence #12) was reported 0.5 miles (0.8 kilometers) west of the GKR alignment in Arvin. A 2016 record (Occurrence #1) was reported as multiple colonies approximately 0.25 miles (0.4 kilometers) east of the alignment and west of Comanche Point. There are four 2013 records (Occurrences #3, #9, #10, #11) approximately 2 miles (3.8 kilometers) east of the GKR alignment and south of Comanche Point. A 1988 record (Occurrence #8) was reported 2 miles (3.8 kilometers) east of the alignment to the north of Comanche Creek.

Potentially suitable habitat for Comanche Point layia within the GKR alignment includes vernal wet, whitish clay soils in chenopod scrub and grassland vegetation in flat areas near Comanche Point below 1,000 feet (300 meters). It is likely extirpated from Edison due to extensive agricultural development of the lowland flats in this area. Unsuitable habitat includes woodland, chaparral, and riparian communities on rocky and sandy substrates above 1,100 feet (335 meters) amsl, as well as agricultural and developed areas.

Comanche Point layia is unlikely to occur within the GKR alignment and only at Comanche Point in vernal wet, whitish clay soils in chenopod scrub and grassland vegetation below 1,000 feet (300 meters). The GKR alignment intersects the extreme margin of suitable habitat for the Comanche Point layia. Most of the alignment occurs in lowland areas below the hills at Comanche Point, and the Comanche Point layia is expected only in the hills above the Project area. Comanche Point layia does not occur in areas above 1,100 feet (335 meters) amsl, nor does it occur in woodland, chaparral, and riparian communities with rocky or sandy soils or in agricultural and developed areas.

#### 1.3.2.9 Oil Neststraw (*Stylocline citroleum*) - CRPR 1B.1

Oil neststraw is a spring-blooming annual herb in the Sunflower Family (Asteraceae). It has a CRPR of 1B.1 (CNPS 2019). Oil neststraw is a tiny erect herb with spheric, wooly inflorescences.

Oil neststraw occurs in clay often crusted soils and dry drainage edges in chenopod scrub and valley and foothill grassland at elevations ranging from 197 to 984 feet (60 to 300 meters) amsl, often between saltbush (*Atriplex*) shrubs.

Oil neststraw is currently restricted to the San Joaquin Valley in Kern County (CCH 2019). It occurs in the hills west of Tupman.

**Presence in the Project Area:** Oil neststraw was not observed within the GKR alignment during the surveys.

One CNDDDB record was reported 2.5 miles (4.0 kilometers) west of the GKR alignment, a 1935 collection (Occurrence #2) described as 2 miles from (east of) Bakersfield, Kern River Canyon Road. However, the exact location of collection is not known and CDFW denotes more fieldwork is needed to verify the record. Except for this 1935 record, this species has never been documented anywhere other than the hills west of Tupman and north of Taft.

GKR Oil neststraw does not occur within the GKR alignment; its known range occurs outside of the Project area, suitable habitat is absent, and there are no reliable records documenting this species within the GKR alignment.



#### 1.3.2.10 Round-leaved Filaree (*California macrophylla*) - CRPR 1B.2

Round-leaved filaree is a spring to summer-blooming annual or biennial herb in the Geranium Family (Geraniaceae). It has a CRPR of 1B.2; it is threatened by development, urbanization, and habitat alteration and possibly threatened by vehicles, grazing, and non-native plants (CNPS 2019). Round-leaved filaree is a small annual or biennial herb with palmately veined leaves spreading from close to the ground on long petioles. The small white flowers have five petals and do not contain staminodes or sterile or abortive stamen. The flowers bloom from March through July.

Round-leaved filaree occurs in clayey soils in cismontane woodlands and grasslands at elevations from 50 to 4,000 feet (15 to 1,200 meters) amsl throughout much of California, especially coastal areas, coastal mountains, central valley, and Sierra Nevada foothills. Round-leaved filaree occurs outside California only in southwest Oregon and is called *Geranium macrophylla* by some botanists (CCH 2019, NRCS 2019).

**Presence in the Project Area:** Round-leaved filaree was not observed within the GKR alignment during the surveys.

There are no CNDDDB records of round-leaved filaree within the GKR alignment, however, there are seven CCH records within 3.5 miles (5.6 kilometers) of the GKR alignment: a 1905 record (UC137772) was reported approximately 2 miles (3.8 kilometers) north of the GKR alignment in Tehachapi Valley; a 1913 record (CAS-BOT-BC167308) was reported approximately 2 miles (3.8 kilometers) north in the same general area as the 1905 record above. There are three CCH records (2 reported in 2015 and 1 in 2016) from the same general area in the Tehachapi Mountains approximately 3.2 miles (5.1 kilometers) southwest of the GKR alignment on a ridge above Comanche Creek.

Potentially suitable habitat for round-leaved filaree within the GKR alignment includes clayey soils in cismontane woodlands and grasslands below 4,000 feet (1,200 meters) amsl in the Tehachapi Mountains between Stallion Springs and Arvin, although there are no records that overlap the alignment in this area. Unsuitable habitat includes sandy to rocky areas of riparian, chaparral, woodland and wetland communities and all croplands and developed areas.

Round-leaved filaree is unlikely to occur within the GKR alignment and only between Stallion Springs and Arvin where there are grasslands underlain by clay soils below 4,000 feet (1,200 meters) amsl. It does not occur in riparian, chaparral, and wetland communities; in sandy to rocky soils; or in GKR croplands and developed areas.

#### 1.3.2.11 Palmer's Mariposa-lily (*Calochortus palmeri* var. *palmeri*) - CRPR 1B.2

Palmer's mariposa lily is a spring to summer-blooming perennial herb in the Lily Family (Liliaceae). It has a CRPR of 1B.2; it is threatened by development, grazing, non-native plants, recreational activities, and vehicles (CNPS 2019). Palmer's mariposa lily has long linear basal leaves and flower stalks that can have a glaucous coating. The flowers have three white to violet petals generally with reddish to brown spots at the base. It blooms from May to July.

Palmer's mariposa lily is found in moist areas in chaparral, lower montane coniferous forest, and meadows and seeps at elevations from 2,330 to 7,200 feet (710 to 2,200 meters) amsl. In California, the known range of the species is restricted to the San Luis Obispo, Santa Barbara, Kern, Ventura, Los



Angeles, San Bernardino, and Riverside Counties.

**Presence in the Project Area:** Palmer's mariposa lily was not observed within the GKR alignment during the surveys.

A 2014 record (Occurrence #115) was reported approximately 0.75 miles (1.2 kilometers) southeast of the GKR alignment at Comanche Point in the Tehachapi Mountains. A 1964 record (Occurrence #55) was reported approximately 350 feet (106 meters) southwest of the GKR alignment in clay soils in oak woodland in the Castac Valley. A 2013 record (Occurrence #90) was reported 0.65 miles (1.0 kilometers) southwest of the GKR alignment in non-native grassland in the Hungry Valley State Vehicular Recreational Area. Another 2014 record (Occurrence #89) was reported 6 miles (9.6 kilometers) east of the GKR alignment at the west end of the Antelope Valley in the Tehachapi Mountains.

Palmer's mariposa lily is unlikely to occur in the Tehachapi Mountains and in isolated locations near Castac Lake and between the Gorman and Bailey Substations. Although there is a recent record for it at Comanche Point, it occurs there in the hills above the alignment and not in the lowlands where the alignment crosses Comanche Point. Unsuitable habitat includes upland vegetation in dry soils, dense riparian vegetation and marshes, and all croplands and developed areas.

Palmer's mariposa lily is unlikely to occur within the southern portions of the GKR alignment near Castac Lake. It does not occur within the alignment in other locations.

#### 1.3.2.12 Alkali Mariposa-lily (*Calochortus striatus*) - CRPR 1B.2

Alkali mariposa lily is a spring to summer-blooming subshrub in the Lily Family (Liliaceae). It has a CRPR of 1B.2 (CNPS 2019). Alkali mariposa lily has several long slender curving basal leaves and one to several stems that has few leaves and one to several flowers. The most distinct characteristic of Alkali mariposa lily are the pink flowers with purple veins.

Alkali mariposa lily is found on alkali soils and wet locations in chaparral, chenopod scrub, Mojavean desert scrub, and in meadows and seeps at elevations from 2,600 to 4,600 feet (800 to 1,400 meters) amsl and extends from Alameda and Mariposa Counties south to San Bernardino County. Outside of California it is restricted to southern Nevada (CCH 2019, NRCS 2019).

**Presence in the Project Area:** Alkali mariposa lily was not observed within the GKR alignment during the surveys.

There are 113 CNDDDB occurrences of alkali mariposa lily, the majority occur are mapped in Antelope Valley between Edwards Air Force Base and Lancaster. A 2017 record (Occurrence #126) was reported 0.3 miles (0.5 kilometers) east of the GKR alignment in the Tehachapi Mountains near Comanche Point within Amargo Springs.

Potentially suitable habitat for alkali mariposa lily within the GKR alignment includes moist alkaline meadows and springs; there are no moist springs within the GKR alignment but there are moist habitats with alkaline soils, although none are located near Comanche Point.

Alkali mariposa lily does not occur within the GKR alignment based on the absence of moist alkaline springs and meadows in the vicinity of known locations.



### 1.3.2.13 Lemmon's Jewelflower (*Caulanthus lemmonii*) - CRPR 1B.2

Lemmon's jewelflower is a spring-blooming annual herb in the Mustard Family (Brassicaceae). It has a CRPR of 1B.2; it is threatened by development, grazing, and vehicles (CNPS 2019). Lemmon's jewelflower is a small annual plant with basal leaves containing petioles and stalk leaves without petioles. Flowers are produced on branches along an elongate flower stalk from March to May.

Lemmon's jewelflower occurs in grasslands and shrublands at elevations from 260 to 5,200 feet (80 to 1,580 meters) amsl. It has been recorded from Alameda County to Los Angeles County, and as far east as San Bernardino County (CCH 2019).

**Presence in the Project Area:** Lemmon's jewelflower was not observed within the GKR alignment during the surveys.

There are ten CNDDDB records for Lemmon's jewelflower in Kern County. Two are within 10 miles (16 kilometers) of the GKR alignment. A 1991 record (Occurrence #6) is generally located 4.6 miles (7.4 kilometers) northwest of the GKR alignment near Wheeler Ridge. A 2015 record (Occurrence #63) was reported 6.8 miles (10.9 kilometers) west of the GKR alignment within Frazier Park at 5,200 feet (1,580 meters) amsl.

GKR The Lemmon's jewelflower does not occur within the alignment, because the range of this species occurs more than 4 miles (6.4 kilometers) from the GKR alignment.

### 1.3.2.14 Munz's Tidy-tips (*Layia munzii*) - CRPR 1B.2

Munz's tidy-tips is a spring-blooming annual herb in the Sunflower Family (Asteraceae). It has a CRPR of 1B.2; it is threatened by non-native plants and possibly threatened by vehicles and foot traffic (CNPS 2019). Munz's tidy-tips is an annual plant that grows upright or starts along the ground and then grows upright. The stem is not purple streaked like similar taxa. The leaves are linear or oblanceolate, the lower ones being lobed along half of the leaf. The disk and ray flowers are yellow, but the ray flowers are white tipped. The plant blooms from March to April.

Munz's tidy-tips occurs in chenopod scrub and valley and grassland habitat at elevation ranging from 160 to 2,620 feet (50 to 800 meters) amsl in the California Coast Ranges, Central Valley, and Tehachapi mountains from San Joaquin County south to Santa Barbara and Kern Counties.

**Presence in the Project Area:** Munz's tidy-tips was not observed within the GKR alignment during the surveys.

A 1935 CNDDDB record (Occurrence #30) was reported approximately 1.5 miles (2.4 kilometers) west of the GKR alignment around Arvin; the exact location of the record is unknown and may represent an extirpated population. Munz's layia currently only occurs in the western foothills of the San Joaquin Valley, especially in the Carrizo Plain and adjacent valleys.

Suitable habitat for Munz's tidy-tips includes alkaline white clay soils in chenopod scrub and valley and grassland habitat below 2,620 feet (800 meters) amsl, which are absent from the GKR alignment. The only observation of this species within the Project area is over 80 years old.

Munz's tidy-tips does not occur within the GKR alignment due to lack of suitable habitat and recent records within the GKR alignment.



#### 1.3.2.15 Madera Leptosiphon (*Leptosiphon serrulatus*) - CRPR 1B.2

Madera leptosiphon is a spring-blooming annual herb in the Phlox Family (Polemoniaceae). It has a CRPR of 1B.2; it is threatened by road maintenance, exotic plant control, and erosion (CNPS 2019). Madera leptosiphon is an annual plant covered in minute hairs. The flower has a white funnel shape with dark purple at the transition to the throat of the funnel and yellow anthers. It produces flowers between April and May.

Madera leptosiphon occurs in open cismontane woodland and lower montane coniferous forest vegetation, often in decomposed granite at elevations ranging from 980 to 4,260 feet (300 and 1,300 meters) amsl. It is found in the western Sierra Nevada and eastern Central Valley from Mariposa County south to Kern County.

**Presence in the Project Area:** Madera leptosiphon was not observed within the GKR alignment during the surveys.

A 1935 CNDDDB record (Occurrence #22) was reported approximately 3.5 miles (5.6 kilometers) south of the GKR alignment in the Tehachapi Mountains. CDFW denotes more information is needed since the record was reported farther south than the known range of the species, and confirmed records are restricted to the Sierra Nevada and nearby valley locations. There are no other records near the alignment.

Madera leptosiphon does not occur within the GKR alignment. There are no records within 3 miles (4.8 kilometers) of the GKR alignment GKR .

#### 1.3.2.16 San Joaquin Woollythreads (*Monolopia congdonii*) - CRPR 1B.2

San Joaquin woollythreads is a spring-blooming annual in the Sunflower Family (Asteraceae). It has a CRPR of 1B.2; it is seriously threatened by agricultural conversion, energy development, urbanization, grazing, trampling, and vehicles (CNPS 2019). San Joaquin woollythreads is a diminutive annual plant that grows along the ground, branching at the base, before stems curve upright. The stem and leaves are pale green and hairy throughout. It has small flower heads with yellow ray and disk flowers. San Joaquin woollythreads bloom from February to May, followed by two-angled fringed disk fruit.

San Joaquin woollythreads is found in sandy locations in grasslands and chenopod scrub from 295 to 2,300 feet (90 to 700 meters) amsl in the San Joaquin Valley and is recorded as far north as San Joaquin County and Santa Barbara and Kern Counties.

**Presence in the Project Area:** San Joaquin woollythreads was not observed within the GKR alignment during the surveys.

There are 100 CNDDDB records for San Joaquin woollythreads primarily occurring north and west of Bakersfield. All recent records are reported from the western side of the San Joaquin Valley, and this species may be extirpated from the eastern portions of the valley. There are four records within 5 miles (8 kilometers) of the GKR alignment. A 1988 record (Occurrence #103) overlaps the GKR alignment where it is generally mapped at the mouth of Kern Canyon; this occurrence may be extirpated. A 1987 record (Occurrence #19) was reported approximately 0.3 miles (0.4 kilometers) east of the GKR alignment in stabilized dunes at the mouth of Caliente Creek south of California Highway 58. A 1988 record (Occurrence #18) was reported 1.2 miles (1.9 kilometers) east of the GKR alignment in Caliente Creek



north of California Highway 58. A 1935 record (Occurrence #102) was reported approximately 0.5 miles (0.8 kilometers) west of the GKR alignment in Arvin.

Potential suitable habitat for San Joaquin could be present at the mouth of Kern Canyon and in Caliente Creek; however, sandy locations in grasslands and chenopod scrub are absent where the alignment intercepts Kern River canyon. Unsuitable habitat includes woodlands, riparian areas, wetlands and vegetation above 2,300 feet (700 meters) amsl, and all croplands and developed areas.

San Joaquin woollythreads is unlikely to occur within the GKR and only could occur where the alignment crosses Caliente Creek. It does not occur in woodlands, riparian areas, wetlands and in vegetation above 2,300 feet (700 meters) within the alignment, and all croplands and developed areas.

#### 1.3.2.17 Baja Navarretia (*Navarretia peninsularis*) - CRPR 1B.2

Baja navarretia is a summer-blooming annual herb in the Phlox Family (Polemoniaceae). It has a CRPR of 1B.2; it is possibly threatened by gold-panning and vehicles (CNPS 2019). Baja navarretia is a short, stout, spiny annual herb with an erect branching stem and pinnately lobed leaves. The plant blooms from June to August and has small lavender-white flowers.

Baja navarretia is found in moist soils in meadows and seeps in open areas in chaparral, lower montane coniferous forest and pinyon and juniper woodlands at elevations ranging from 4,600 to 7,600 feet (1,400 to 2,300 meters) amsl. Records exist in Kern, San Bernardino, and Ventura counties (CCH 2019). Baja navarretia also occurs in Baja California, Mexico (NRCS 2019)

**Presence in the Project Area:** Baja navarretia was not observed within the GKR alignment during the surveys.

There are CNDDDB occurrences reported in the San Emigdio Mountains, however they are more than 10 miles (16 kilometers) from the GKR alignment.

Suitable habitat for Baja navarretia within the GKR alignment includes wet areas within open coniferous forest and pinyon and juniper woodland and wet meadows and seeps above 4,600 feet (1,400 meters) amsl; these conditions are absent within the GKR alignment.

Baja navarretia does not occur within the GKR alignment due to lack of suitable habitat within the alignment.

#### 1.3.2.18 Robbins' Nemacladus (*Nemacladus secundiflorus* var. *robbinsii*) - CRPR 1B.2

Robbin's nemacladus is a spring-blooming annual herb in the Bellflower Family (Campanulaceae). It has a CRPR of 1B.2; it is threatened by road maintenance, including widening (CNPS 2019). Robbin's nemacladus is a diminutive, delicate-looking plant with slender branching reddish stems with a few small, hairy leaves. The tiny pale lavender or white flowers appear April through May (Baldwin et al. 2012).

Robbin's nemacladus occurs on dry gravelly slopes in chaparral and valley and foothill grasslands at elevations ranging from 1,150 to 5,580 feet (350 to 1,700 meters) amsl. Robbin's nemacladus has been recorded in San Benito, San Luis Obispo, Santa Barbara, Ventura, Kern, and Los Angeles Counties (CCH 2019).

**Presence in the Project Area:** Robbin's nemacladus was not observed within the GKR alignment during



the surveys.

There are only 9 CNDDDB records of the Robbin's nemacladus. Only one occurs within 3 miles (4.8 kilometers) of the GKR alignment, a 1978 CNDDDB record (Occurrence #2) that was reported 2.8 miles (5 kilometers) southwest of the Gorman Substation in Hungry Valley.

Potentially suitable dry gravelly grassland and shrubland habitat within the GKR alignment occurs near the Gorman Substation, but the only observation in the area was reported 40 years ago 2.8 miles (5 kilometers) southwest of the alignment. Unsuitable habitat includes all other locations within the alignment.

Robbin's nemacladus does not occur within the GKR alignment, based on the lack of recent observations within the Project area and lack of any observations within 2 miles (3.2 kilometers) of the alignment.

#### 1.3.2.19 San Bernardino Aster (*Symphyotrichum defoliatum*) - CRPR 1B.2

San Bernardino aster is a summer to fall-blooming perennial herb in the Sunflower Family (Asteraceae). It has a CRPR of 1B.2; it is possibly threatened by competition with non-native plants (CNPS 2019). San Bernardino aster is a rhizomatous, hairy plant bearing multiple flower heads narrowly clustered at the top of the stems. White to pale violet flowers appear from July through November.

San Bernardino aster is a California endemic that occurs on moist or seasonally flooded soil in meadows, seeps, marshes, swamps, grasslands and disturbed places in valley and foothill grassland, coastal scrub, cismontane woodland, and lower montane coniferous forest habitats at elevations below 6,725 feet (2,050 meters) amsl. It occurs in the Casmalia Hills and Vandenberg Air Force Base, Santa Barbara County; in the San Jacinto Mountains, Riverside County; in the Santa Ysabel Preserve, San Diego County; and in the Santa Ana Mountains, Orange County (CCH 2019).

**Presence in the Project Area:** San Bernardino aster was not observed within the GKR alignment during the surveys.

A 1939 CNDDDB record (Occurrence #41) overlaps the GKR alignment near Lebec. There is some question concerning the veracity of this record since the exact location is unknown, the location is approximately 70 miles (113 kilometers) northwest of well-documented populations in the San Gabriel Mountains, and the location was described as "Antelope Valley" which encompasses a large area. There is also a record 8 miles (12.9 kilometers) west of the GKR alignment from 1978 in Cuddy Valley.

Potentially suitable habitat consisting of marshy meadows and grasslands exists in several locations in the Lebec area, although many wetlands have been disturbed and infested with non-native perennial pepperweed (*Lepidium latifolium*). Unsuitable habitat includes dry grasslands, woodland, forests and shrublands, as well as croplands and developed areas.

The San Bernardino aster does not occur within the GKR alignment, based on the absence of recent records and the primary range for this species outside of the Project area.

#### 1.3.2.20 Mt. Pinos Onion (*Allium howellii* var. *clokeyi*) - CRPR 1B.3

Mt. Pinos onion is a spring to summer-blooming perennial herb (bulb) in the Onion Family (Alliaceae). It has a CRPR of 1B.3; it is threatened by mining, road maintenance, and vehicles, and possibly threatened by grazing and trampling (CNPS 2019). Mt. Pinos onion grows from a bulb with long slender pale green



leaves. The flowering head is made of 10-30 individual pink to lavender flowers appear from May to June, followed by inflated papery fruits that become reddish in age (Baldwin et al. 2012).

Mt. Pinos onion occurs in clay soils in Great Basin scrub, meadows and seeps, and pinyon and juniper woodland at elevations ranging from 4,260 to 6,070 feet (1,300 to 1,850 meters) amsl. The Mt. Pinos onion occurs mainly in the western transverse mountains in Ventura, Santa Barbara, and Kern Counties (CCH 2019). It is endemic to California.

**Presence in the Project Area:** Mt. Pinos onion was not observed within the GKR alignment during the surveys.

There are two CNDDB records within 8 miles (12.8 kilometers) of the GKR alignment. A 1941 record (Occurrence #21) was reported 5 miles (8 kilometers) west of the alignment in Frazier Mountain Park and a 1934 record (Occurrence #1) was reported 7.8 miles (12.5 kilometers) southeast of the alignment in Angeles National Forest.

Potentially suitable habitat for the Mt. Pinos onion includes areas with clay soils above 4,260 feet (1,300 meters) amsl in the Tehachapi Valley; however, no suitable habitat for Mt. Pinos onion remains within the GKR alignment. Unsuitable habitat includes sandy to rocky soils in grasslands, woodlands, forests, and riparian communities below 4,260 feet (1,300 meters) amsl and all croplands and developed areas.

The Mt. Pinos onion does not occur within the GKR alignment, based on the absence of recent records within the alignment as well as the absence of suitable habitat.

#### 1.3.2.21 Rose-flowered Larkspur (*Delphinium purpusii*) - CRPR 1B.3

Rose-flowered larkspur is a spring-blooming perennial herb in the Buttercup Family (Ranunculaceae). It has a CRPR of 1B.3 (CNPS 2019). Rose-flowered larkspur is an upright, branched plant with a narrow inflorescence having slender, pink to deep rose-pink flowers appearing March through May (Baldwin et al. 2012).

Rose-flowered larkspur occurs in rocky granitic and carbonate soils in chaparral and woodland vegetation between 984 and 4,396 feet (300 and 1,340 meters) amsl in Tulare and Kern Counties.

**Presence in the Project Area:** Rose-flowered larkspur was not observed within the GKR alignment during the sensitive plant surveys.

The closest CNDDB records for this species to the GKR alignment all occur in the Kern River drainage, with a 1996 record (Occurrence #4) on granitic sand on a north-facing slope immediately north of the Kern Canyon Hydro Generating Facility. Additional records occur further up the Kern River drainage from this location.

Potentially suitable habitat for the rose-flowered larkspur occurs in one location: at the northern end of the GKR alignment on the slopes surrounding the Kern Canyon Hydro Generating Facility and on nearby slopes to the south for 0.25 mile (0.4 kilometer) before the alignment exits the Kern Canyon drainage. Suitable habitat for this species is lacking elsewhere within the alignment.

Rose-flowered larkspur is unlikely to occur within the GKR alignment and only immediately adjacent to the Kern Canyon Hydro Generating Facility and on nearby slopes within 0.25 mile (0.4 kilometer) of this facility. This species does not occur elsewhere within the alignment, based on lack of suitable habitat and absence



of recent CNDDDB or other documented observations.

#### 1.3.2.22 Shevock's Golden-aster (*Heterotheca shevockii*) - CRPR 1B.3

Shevock's golden-aster is a late summer to early fall-blooming perennial herb in the Sunflower Family (Asteraceae). It has a CRPR of 1B.3; it is threatened by road maintenance, including widening (CNPS 2019). Shevock's golden-aster is a tall, glandular herbaceous perennial with multiple stems and branches bearing yellow ray and disk flowers in August and September (Baldwin et al. 2012).

Shevock's golden-aster occurs in sandy substrates in grassland habitats and adjacent open shrublands and woodlands at elevations ranging from 755 to 2,953 feet (230 to 900 meters) amsl. It is endemic to the lower Kern River Canyon in Kern County (CCH 2019).

**Presence in the Project Area:** Shevock's golden-aster was not observed within the GKR alignment during the surveys.

There are two CNDDDB records within or near the GKR alignment. A 1996 record (Occurrence #7) was reported immediately north of the Kern Canyon Hydro Generating Facility. An additional 1996 record (Occurrence #8) was reported slightly up-river within the Kern River canyon.

Potentially suitable habitat for the Shevock's golden-aster within the GKR alignment occurs in one location: immediately north of the Kern Canyon Hydro Generating Facility in sandy substrates at the base of the rocky cliffs nearby. Suitable habitat for this species is lacking elsewhere within the alignment.

Shevock's golden-aster is unlikely to occur within the GKR alignment and only immediately adjacent to the Kern Canyon Hydro Generating Facility. This species is recognizable year-round but may not have been documented in steep terrain within the Kern River canyon that overlaps the alignment. This species does not occur elsewhere within the alignment, based on lack of suitable habitat and absence of survey and CNDDDB or other documented observations.

#### 1.3.2.23 Tehachapi Monardella (*Monardella linoides* subsp. *oblonga*) - CRPR 2B.2

Tehachapi monardella is a summer-blooming perennial herb in the Mint Family (Lamiaceae). It has a CRPR of 1B.3; it is possibly threatened by recreational activities and wind energy development (CNPS 2019). Tehachapi monardella is a silvery or ash-gray-colored perennial rhizomatous plant. The leaves are opposite and wider than 0.16 inches (4 millimeters), which distinguishes the species from other taxa. It has one flower cluster per stem with rose to purple colored flowers that appear between June to August (Baldwin et al. 2012).

Tehachapi monardella occurs in granitic soils on dry slopes in lower montane coniferous forest, upper montane coniferous forest, and pinyon and juniper woodlands from 2,952 to 8,500 feet (900 to 2,600 meters amsl). It is known to occur in the Tehachapi Mountains and the San Emigdio Mountains (CNPS 2019).

**Presence in the Project Area:** Tehachapi monardella was not observed within the GKR alignment during the surveys.

There are two CNDDDB records within 2 miles (3.2 kilometers) of the GKR alignment. An 1889 record (Occurrence #35) was reported as generally overlapping the alignment in Tehachapi, but was reported amongst ponderosa pines, which occur at higher elevations in this area. A 1927 record (Occurrence #67)



was reported approximately 1.5 miles (3.4 kilometers) west of the GKR alignment; the location was listed as “Chandler’s.”

Suitable habitat for Tehachapi monardella, including open dry slopes of coniferous forest, is absent from the GKR alignment. Tehachapi monardella is observable year-round and does not occur within the GKR alignment.

#### 1.3.2.24 Tracy’s Eriastrum (*Eriastrum tracyi*) - CRPR 3.2

Tracy’s eriastrum is a spring to summer-blooming annual herb in the Phlox Family (Polemoniaceae). It is a California Rare species and has a CRPR 3.2; it is threatened by vehicles, competition, development, grazing, and road maintenance (CNPS 2019). Tracy’s eriastrum is a tufted woolly-hairy diminutive annual plant with small blue flowers that have widely elliptic corolla lobes that are twice as long as wide. Flowering can be observed from May to August producing fruit with one seed per chamber.

Tracy’s eriastrum is a California endemic that occurs on rocky shale or clay soils in chaparral and woodlands at elevations between 1,310 and 5,840 feet (400 and 1,780 meters) amsl. It occurs at high elevation locations from Klamath Ranges and Medoc Plateau in the north to the southern Sierra Nevada foothills and southern central valley in the south, including Kern County (Baldwin et al. 2012; CCH 2019).

**Presence in the Project Area:** Tracy’s eriastrum was not observed within the GKR alignment during the surveys.

There are three CNDDDB records within 1 mile (1.6 kilometers) of the GKR alignment. A 1910 record (Occurrence #10) slightly overlaps the GKR alignment in the Tehachapi Valley. There are five 2007 records within 1.5 miles (2.4 kilometers) the GKR alignment in the Tehachapi Mountains to the northeast and southeast of Castac Lake: Occurrence #97 is 0.3 miles (0.5 kilometers) from the GKR alignment southeast of Castac Lake; Occurrence #96 is approximately 0.7 miles (1.1 kilometers) from the GKR alignment above the northeastern edge of Castac Lake; Occurrence #98 is approximately 1 mile (1.6 kilometers) east of the GKR alignment; Occurrence #99 was reported approximately 1.6 miles (2.6 kilometers) from the GKR alignment and 0.75 miles (1.2 kilometers) east of Castac Lake; and Occurrence #100 is 1.4 miles (2.3 kilometers) east of the GKR alignment.

Potentially suitable habitat for Tracy’s eriastrum includes open wooded areas in rocky, gravelly clay soils near Castac Lake below 5,840 feet (1,780 meters) amsl. Unsuitable habitat includes sandy well-drained soils in grasslands, wetlands and marshes, riparian vegetation, and all croplands and developed areas outside of the Castac Lake area; it is unlikely to occur in the Tehachapi Valley, where it hasn’t been seen in over 100 years.

Tracy’s eriastrum is unlikely to occur within the GKR alignment near Castac Lake in open wooded areas in gravelly clay soils. It does not occur in other areas within the alignment.



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## 1 INTRODUCTION

The following sections describe wildlife species that were observed within the Gorman -Kern River (GKR) alignment that are designated as USFWS Birds of Conservation Concern (BCC) and/or are on the CDFW Watch List (WL).

Also included are non-listed wildlife species that were not observed during the special-status wildlife surveys but have the potential to occur, including wildlife species that are designated as CDFW Species of Special Concern (CSC) or United States Forest Service Sensitive species (USFS S). These species have been reported as historical or extant occurrences in the Project region and are discussed here due to potentially suitable habitat conditions that exist within the Project alignment.

Suitable habitat is defined as an area or areas that support known individuals of a given species (based on survey observations, CNDDDB records, and other records), suitable environmental conditions, and presence of a natural community or communities in which it normally occurs. A sensitive species is likely to occur in suitable habitat.

Potentially suitable habitat is defined as an area or areas that support similar natural communities, substrates, and elevations, and is within the known range of an observed wildlife species, but where no individuals were observed in surveys or reported by others. A sensitive species is unlikely to occur in potentially suitable habitat, depending on environmental variables and known species range.

Unsuitable habitat is defined as an area or areas where the species is absent and is unlikely to occur due to lack of suitable environmental conditions and because the area is outside the known range of the species. A sensitive species does not occur in unsuitable habitat.

### 1.1 Wildlife without Special Status Listing Observed within the GKR Alignment

#### 1.1.1 USFWS Birds of Conservation Concern

##### 1.1.1.1 Costa's Hummingbird (*Calypte costae*) – BCC

The Costa's hummingbird is a USFW Bird of Conservation Concern.

The Costa's hummingbird is a year-round resident of Southern California. The Costa's hummingbird averages 3.5 inches in length (9 centimeters), with a wingspan of 4.3 inches (11 centimeters). The male Costa's hummingbird is greenish above and has an iridescent violet crown and extended gorget. Females and immatures are greenish above with a white stripe behind the eye and whitish underparts (Cornell 2019).

Costa's hummingbirds occur in dry open areas in chaparral as well as juniper and riparian woodlands, but primarily nest in desert washes, desert riparian vegetation, and desert scrub habitats (Cornell 2019, Shuford and Gardali 2008). Female Costa's hummingbirds construct nests 3 to 7 feet (1 to 2 meters) above the ground in shrubs with minimal vegetation cover. The female lays two eggs, which hatch in 15 to 18 days. Nestlings fledged in 20 to 30 days (Cornell 2019).



**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. A single Costa's hummingbird was observed in an open area in mixed oak woodland within the GKR alignment north of Fort Tejon State Historic Park.

No CNDDDB occurrences are present within the Project alignment.

Costa's hummingbirds may forage within the GKR alignment, but potentially suitable nesting habitat is restricted to desert washes, desert riparian vegetation, and desert scrub habitats in this area, which is not present on the GKR alignment. Unsuitable nesting habitat includes all areas north of Gorman, as well as dense woody vegetation, rocky substrates, mountainous areas, areas under active agricultural production, and developed areas.

The Costa's hummingbird is likely to occur on an occasional basis within the GKR alignment. It is unlikely to nest within the GKR alignment.

### 1.1.2 CDFW Watch-List Species

The following sensitive wildlife species were observed along the GKR alignment and are on the CDFW Watch List. These are included for informational purposes because they were observed.

#### 1.1.2.1 Cooper's Hawk (*Accipiter cooperii*) – WL

The Cooper's hawk is a CDFW Watch List species.

The Cooper's hawk is medium sized hawk with rounded wings and a long tail. They are 14.6 to 17.7 inches (37 to 45 centimeters) long with a wingspan of 24.4 to 35.4 inches (62 to 90 centimeters). Adult Cooper's hawks are dark grey above with reddish orange bars on the underparts, dark bands on the tail, and red eyes. Juvenile Cooper's hawks are brown above and streaked underparts (Cornell 2019).

Cooper's hawks are generally found in riparian woodland habitats. Nests are typically built between March and April in the upper canopy of a dense stand of trees such as live oak or cottonwood. The Cooper's hawk can be found year-round in many parts of southern California (Cornell 2019).

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. One Cooper's hawk was observed flying over red brome grassland within the GKR alignment near Grapevine. Another Cooper's hawk was observed in annual brome grassland outside of the project alignment northwest of Castac Lake.

There are no CNDDDB occurrences located along the Project alignment (CNDDDB 2019). Although there are eBird records along the alignment, none of these observations represent nesting occurrences (eBird 2019).

Potentially suitable nesting habitat for the Cooper's hawk within the GKR alignment includes stands of mature deciduous trees along canyon bottoms and river floodplains; there is limited riparian habitat in the Kern River canyon and Grapevine Canyon for this species, but there are no known nesting records in these areas. Unsuitable habitat includes all upland habitat, all non-riparian vegetation, croplands, and



developed areas.

The Cooper's hawk is likely to occur as a transient during migration within the GKR alignment, but it is unlikely to nest within the alignment, based on limited suitable nesting habitat and the lack of nesting records.

#### 1.1.2.2 California Horned Lark (*Eremophila alpestris actia*) – WL

The California horned lark is a CDFW Watch List species.

The California horned lark is on average 6 inches (16 centimeters) in length with distinct black horns, a yellowish face, a black bib and stripe under its eyes, and pale breast and belly. When in flight, the California horned lark has a mostly black tail with white outer feathers and brown central feathers. Juvenile California horned larks are darker above with white spotting or streaks below (Shuford and Gardali 2008).

The California horned lark can be found in open grassland or herbaceous dominated vegetation areas or within scattered low shrubs. Nests for the California horned lark are generally found on the ground in depressional areas. The California horned lark is a subspecies of the horned lark and is a year-round resident in the San Joaquin Valley (CNDDDB 2019).

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. There was one observation within the alignment in an agricultural field north of the California aqueduct at the southern end of the San Joaquin Valley.

A 2004 CNDDDB record (Occurrence #78) was reported approximately 0.2 miles (0.3 kilometres) north of the south end of the GKR alignment east of Gorman.

Suitable habitat for the California horned lark can be found in agricultural fields in the Tehachapi Valley and in the San Joaquin Valley within the GKR alignment. Potentially suitable habitat includes open habitats that are generally devoid of trees or large shrubs. Unsuitable habitat includes coniferous and chaparral habitats, mountainous regions, and developed areas.

The California horned lark is likely to occur in agricultural fields in the Tehachapi Valley and in the San Joaquin Valley within the GKR alignment. The California horned lark is unlikely to occur in other agricultural areas within the GKR alignment and does not occur in mountainous or developed areas.

#### 1.1.2.3 Prairie Falcon (*Falco mexicanus*) - WL

The prairie falcon is a CDFW Watch List species.

The prairie falcon is 14.6 to 18.5 inches (37 to 47 centimeters) long with a wingspan of 35.4 to 44.5 inches (90 to 113 centimeters) with pointed wings and a medium-long tail. Prairie falcons have brown upperparts and are pale with brown blotches on underparts with a pale stripe above the eye and a brown stripe below the eye.

Prairie falcons occur in a wide variety of habitats including perennial grasslands, savannahs, rangeland, some agricultural fields, and desert areas. Prairie falcons require sheltered cliff ledges for cover and will usually nest in scrapes on sheltered cliff ledges that overlook large, open areas (Shuford and Gardali



2008). The prairie falcon lays two to six eggs that hatch after approximately 29 to 39 days of incubation. Nestlings fledge in approximately 29 to 47 days (Cornell 2019).

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. Four prairie falcons were observed flying over the GKR alignment during the survey. Two prairie falcons were observed south of the Kern River and northeast of Edison. One was observed southeast of Arvin and west of Bear Valley Springs. Another was observed near Grapevine.

There are four suppressed CNDDDB records of nesting prairie falcons in USGS quadrangles near but not overlapping the alignment. A 1978 record (Occurrence #247) was reported approximately 1.0 miles (1.7 kilometers) north of the east end of the GKR alignment in the southern Sierra Nevada. Another 1978 record (Occurrence #400) was reported approximately 2.0 miles (3.3 kilometers) south of the southern end of the GKR alignment southeast of Gorman.

There are scattered eBird records of the species along the Project alignment, but none of these observations represent nesting occurrences (eBird 2019).

The prairie falcon is likely to occur within the GKR alignment on an occasional basis but is unlikely to nest within the GKR alignment except where tall cliff faces occur within or immediately adjacent to the alignment, such in the Kern River canyon area. It is unlikely to nest elsewhere, but foraging individuals may be observed on occasion.

#### 1.1.2.4 Double-crested Cormorant (*Phalacrocorax auritus*) – WL

The double-crested cormorant is a CDFW Watch List species.

The double-crested cormorant is a water bird averaging 27 inches to 35.5 inches (70 centimeters to 90 centimeters) in length with a large brown to black body, a long thin neck, orange bare skin at the base of their hooked bill. The double-crested cormorant's hooked bill is relatively the same size as its head. During the breeding season, double crests of white or black feathers can be found on the sides of their head. Immature double-crested cormorants are generally browner in body color, with paler chests and neck (Cornell 2019).

The double-crested cormorant can be found in aquatic habitats (i.e., coasts, bay, lakes, ponds, rivers, and lagoons) throughout the United States. In California, this species can be found within inland lakes, in fresh, salt or estuarine waters and is a year-long resident (Shuford and Gardali 2008). Double-crested cormorant nests consist of rocks or reefs with no vegetation, on top of a tree or on the ground; the GKR alignment generally lies outside of the breeding range for this species (Cornell 2019).

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. A single double-crested cormorant was observed foraging along the Kern River northeast of Bakersfield, California in the San Joaquin Valley.

There are no CNDDDB records for this species in the Project area.

The double-crested cormorant is likely to occur as a transient within the GKR alignment but is unlikely to nest in the alignment.



#### 1.1.2.5 White-faced Ibis (*Plegadis chihi*) – WL

The white-faced ibis is a CDFW Watch List species.

The white-faced ibis is a dark wading bird with a long, down-curved bill and long, dark legs (Cornell 2019).

White-faced ibis occur in shallow freshwater marshes and wetland environments where they use dense tule or cattail thickets for nesting, and areas of shallow water where they forage for insects and crustaceans (Shuford and Gardali 2008, CDFW 2019). White-faced ibis construct a bulky platform nest of bulrushes or other plant stems with a depression at the center and typically lay 3 to 5 eggs that hatch after approximately 17 to 261 days of incubation. Nestlings fledge in approximately four weeks (Cornell 2019).

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. One white-faced ibis was observed flying over the GKR alignment near Lebec.

There are no CNDDDB records for this species in the Project area.

Suitable nesting habitat for the white-faced ibis includes marsh habitats and wet agricultural fields. The white-faced ibis is likely to occur on an occasional basis within the GKR alignment and could nest in discrete and dense marsh vegetation in the San Joaquin Valley and between Lebec and the Gorman Substation.

## 1.2 Sensitive Wildlife Species Likely to Occur, but not Observed

Sensitive species are presented by listing status. Species within the same status are listed in alphabetical order by scientific name.

### 1.2.1 CDFW Species of Special Concern

#### 1.2.1.1 California Legless Lizard (*Anniella* sp.) – CSC

The California legless lizard is a CDFW Species of Special Concern.

California legless lizard is a slender lizard 4.4 to 7 inches long (11.1 to 17.8 centimeters) from snout to vent with no legs, has eyelids, a shovel-shaped snout, smooth glossy scales, and a stubby tail. Coloration varies from silver, beige, brown, to black on the dorsal side and white to yellow on the ventral side. Often there are dark lines along the back and sides where the dorsal and ventral colors meet. California legless lizards bear live young and are believed to breed between early spring and mid-summer (CalHerps 2019).

California legless lizards can be found along the western edge of the Sierra Nevada Mountains and parts of the San Joaquin Valley and Mojave Desert (Hunt 1983; Jennings and Hayes 1994). California legless lizards occur primarily in areas with sandy or loose loamy soils such as under sparse vegetation of beaches, chaparral, or pine-oak woodland; or near sycamores, cottonwoods, or oaks that grow on stream terraces (Banta and Morafka 1968, Jennings and Hayes 1994).

Portions of the GKR alignment occur within the breeding range of this species.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were



conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. The California legless lizard was not observed during the special-status wildlife surveys; this rare species is difficult to detect.

A 1956 CNDDDB record (Occurrence #108) was reported approximately 0.7 miles (1.1 kilometers) west of the north end of the GKR alignment on the north side of the Kern River. A 1955 record (Occurrence #16) was reported approximately 2.2 miles (3.5 kilometers) northwest of the alignment northeast of Wheeler Ridge in what is now active agriculture land; and an 1864 record (Occurrence #105) was reported approximately 0.4 miles (0.6 kilometers) south of the GKR alignment at Fort Tejon State Historic Park. A 2012 CNDDDB record (Occurrence #92) was reported 1.8 miles (2.9 kilometers) east of the Gorman Substation; this individual was tentatively identified as *Anniella pulchra* but field notes states that more research is required to determine identity.

Potentially suitable habitat containing sparsely vegetated stream terraces with sycamores, cottonwoods, or oaks is present along the GKR alignment in the Tejon foothills and between Grapevine and Lebec. GKR The California legless lizard is likely to occur within the GKR alignment near the Gorman Substation, based on a 2012 CNDDDB record (Occurrence #92) but is unlikely to occur elsewhere within the alignment.

#### 1.2.1.2 Pallid Bat (*Antrozous pallidus*) – CSC

The pallid bat is a CDFW Species of Special Concern.

The pallid bat is a large yellowish-brown bat that are on average 4.5 inches (11.3 centimeters) in length, with a 1.8 inch (4.6 centimeter) tail, and large eyes. The ears are large, about 1 inch (2.5 centimeters long), and are broad and naked. A large light spot is present between the shoulders while the underparts are pale. The membrane of their wings are nearly naked and brown, and they have a blunt snout surrounded by a glandular ridge. Females typically produce two young per year. Pups will begin to fly at about six weeks (Zeiner et al. 1990).

Pallid bats inhabit rocky outcrop areas in open, desert, grassland, shrubland, woodland, and forest communities where they commonly roost in rock crevices, caves, and mine tunnels and man-made structures. Maternity colonies form between May and June with pups being born between May and July. The pallid bat is a year-round resident found throughout California.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No pallid bats or their roosts were observed during the special-status wildlife surveys.

A 1998 CNDDDB record (Occurrence #32) was reported approximately 2.9 miles (4.7 kilometers) east of the GKR alignment of a group of 20 bats roosting on a railroad trellis over Caliente Creek. A 1903 CNDDDB record (Occurrence #173) generally overlaps the alignment at Fort Tejon State Historic Park. A 1945 record (Occurrence #177) was reported in an area broadly overlapping the GKR alignment near Lebec on the west side of Interstate 5, near the intersection of Lebec Road and Ridge Route Drive; annotations indicate a single specimen was collected from an old icehouse at the back corner of the Lebec Hotel; the Lebec Hotel was closed in 1968 and demolished in 1971.

Potentially suitable roosting habitat for the pallid bat in the vicinity of the alignment includes rocky



outcrops, caves, mines, and man-made structures, including railroad trellises. There is one mine shaft located 0.5 miles (0.8 kilometers) south of the GKR alignment on a slope above Comanche Creek on Tejon Ranch, but there are no pallid bat observations in the area. The Kelso mine in the Tehachapi Mountains is located 4.9 miles (7.9 kilometers) northeast of the Gorman Substation in the Tehachapi Mountains; there are no CNDDDB records for bats from this location. Unsuitable roosting habitat within the GKR alignment includes lowland grassland and agricultural areas, sandy areas, and relatively flat open terrain lacking rock outcrops, mines, man-made structures, and other potential roost sites that lack a water source, as well as all developed areas.

The pallid bat is likely to occur within the alignment while foraging or during dispersal but is unlikely to roost in the Caliente Creek and Kern Canyon areas in the foothills of the southern Sierra Nevada, based on a 1998 observation in Caliente Creek. It is also unlikely to roost within the GKR alignment between Fort Tejon State Historic Park and Lebec or elsewhere in the Tehachapi Mountains or San Joaquin Valley, based upon the absence of observations in the past 74 years.

#### 1.2.1.3 Long-eared Owl (*Asio otus*) – CSC

The long-eared owl is a CDFW Species of Special Concern.

Long-eared owls are medium-sized, approximately 15 inches (38.1 centimeters) in length with a 35.4 - 39.4-inch (90 - 100 centimeter) wingspan, have an overall slender body, rufous facial discs, and are streaked and barred below. Long-eared owls usually claim stick nests built by corvids or hawks. Females lay 2 - 10 eggs with an incubation period of 25 - 30 days.

Long-eared owls can be found from sea level to above 6,500 feet (1,981 meters) amsl and generally occur in dense tree stands for roosting and nesting such as riparian forests and open grassland and shrubland or open coniferous and deciduous woodlands for hunting (Cornell 2019).

Portions of the GKR alignment are within the known breeding range of the long-eared owl.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. The long-eared owl was not observed during the special-status wildlife surveys.

A 1974 nesting CNDDDB record (Occurrence #62) was reported approximately 1.4 miles west of the GKR alignment in the town of Arvin. A 1992 nesting record (Occurrence #48) was reported 1.6 miles (2.6 kilometers) east of the alignment on the south side of Tejon Creek on the west edge of the Tehachapi Mountains. A 2015 eBird observation was reported from Tejon Creek more than 5 miles (8 kilometers) from the GKR alignment; the observation of three individuals suggests it may have been a nesting observation. All observations near the GKR alignment are confined to the western Tehachapi Mountains north and south of Comanche Point.

The GKR alignment does not support dense deciduous riparian woodland in the to the western Tehachapi Mountains north and south of Comanche Point where long-eared owl observations have been reported, but it does support suitable foraging habitat in this area.

The long-eared owl is unlikely to occur while foraging within the GKR alignment in the western Tehachapi Mountains north and south of Comanche Point. However, it does not nest within the alignment, due to lack of suitable riparian habitat near observations of this species.



#### 1.2.1.4 Whiptail (*Aspidoscelis tigris stejnegeri*) – CSC

The coastal whiptail is a CDFW Species of Special Concern.

Coastal whiptails are slim-bodied lizards, approximately 13 inches (33 centimeters) in length, with a tapered head, and a tail up to twice the length of its body. The upperparts are gray, tan, and brown with many dark spots or blotches while the underparts are paler with small dark blotches. Females lay one clutch of eggs per year which hatch from May to August (CalHerps 2019).

The subspecies *stejnegeri* of western whiptail occurs from coastal southern California to Baja California in desert to semi-arid areas with sparse vegetation – including chaparral, woodland, and riparian habitats. The GKR alignment is located on the northern edge of the coastal whiptail range.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No coastal whiptails were observed within the survey area at the time of the special-status wildlife surveys.

Western whiptails (*Aspidoscelis tigris*) were observed on the GKR alignment on Tejon Ranch; however, the individuals could not be identified to subspecies.

The northernmost CNDDDB record for this species was an adult reported within the GKR alignment in a mix of grassland and Rubber Rabbitbrush Scrub; this 2004 record (Occurrence #79) was reported approximately 1.8 miles (2.9 kilometers) east of the GKR alignment in the Tehachapi Mountains east of the Gorman Substation. It has not been reported north of this area.

Suitable grassland and scrub habitat is present along the south end of the GKR alignment near the Gorman Substation.

The coastal whiptail is likely to occur within the GKR alignment in one location: in the southern Tehachapi Mountains near the Gorman Substations and is unlikely to occur elsewhere within the alignment.

#### 1.2.1.5 Coast Horned Lizard (*Phrynosoma blainvillii*) – CSC

The coast horned lizard is a CDFW Species of Special Concern.

It is 2.2 to 4.5 inches (6.3 to 11.4 centimeters) long and has two horns at the back of the head, longer than the rest; the bases of these horns are separated, not touching. There are two rows of pointed fringe scales on each side of the body and two or three rows of enlarged pointed scales on each side of the throat. The general coloration is yellowish, brown, reddish, or gray. There are wavy dark blotches on the back and a pair of large dark blotches on the neck. There are no dark stripes on the face (Stebbins 2003).

This species relies on camouflage for protection and often hesitates to move at the approach of a predator. Coast horned lizards often bask in the early morning on the ground or on elevated objects such as low boulders or rocks. Predators and extreme heat are avoided by horned lizards by burrowing into loose soil. Periods of inactivity and winter hibernation are spent burrowed into the soil under surface objects such as logs or rocks, in mammal burrows, or in crevices. Most activity occurs during the middle of the day in the spring and fall but is restricted to morning and late afternoon during mid-summer. Nocturnal activity may occur during particularly warm periods. Fall and winter are inactive periods in most areas. They forage on the ground in open areas, usually between shrubs and often near ant nests, and



reportedly eat other insects including wasps, grasshoppers, flies, and caterpillars (Zeiner et al. 1988).

The coast horned lizard occurs in sandy washes and friable soils in areas with scattered low shrubs in a variety of vegetation types, including grasslands, shrublands, and woodlands in the Sierra Nevada foothills from Butte County to Kern County, in the Tehachapi Mountains, and within portions of the central and southern California coast.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. No coast horned lizards were observed during the special-status wildlife surveys.

. A 2010 record (Occurrence #855) was reported 0.1 miles (0.2 kilometers) east of the alignment at the top of the ridge of the Tehachapi Mountains between Castac Lake and the Gorman Substation. A 2006 record (Occurrence #148) was reported east of the Gorman Substation.

Suitable grassland and open woody vegetation habitat for the coast horned lizard within the GKR alignment occurs in the Tehachapi Mountains above the Gorman Substation. Potentially suitable habitat may be present elsewhere within the alignment where there is sandy or other friable soils, especially in open scrub habitats. Unsuitable habitat includes areas with only rocky bedrock substrates, dense forests and woodlands, inundated areas, and developed areas.

The coast horned lizard is likely to occur within the GKR alignment on the slopes of the Tehachapi Mountains between Castac Lake and the Gorman Substation. It is unlikely to occur elsewhere within the alignment and does not occur in areas with only rocky bedrock substrates, or in dense forests and woodlands, inundated areas, and developed areas.

## **1.2.2 United State Forest Service Sensitive Species**

### **1.2.2.1 Yellow-blotched Salamander (*Ensatina eschscholtzii croceater*) – WL, USFS S**

The yellow-blotched salamander is a CDFW Watch List species and a USFS Sensitive species.

It is a medium-sized salamander (1.5 - 3.2 inches long [3.8 - 8.1 centimeters] from snout to vent, and 3 - 6 inches [7.5 - 15.5 centimeters] in total length). It has a short body and long legs, with a tail that is rounded and constricted at the base. Breeding takes place in fall and spring but may also occur throughout the winter. Females lay 3 - 25 eggs and young develop completely in the egg and hatch fully formed.

Yellow-blotched *Ensatina* are endemic to California. They occur in the lower Kern River Canyon, the Paiute Mountains, Breckenridge Mountain, the Tehachapi mountains, on Mt. Abel, Mt. Pinos, near Fort Tejon State Historic Park, and near Frazier-Alamo Mountain. It occurs in evergreen and deciduous forests, under rocks, logs, and other surface debris, especially on shaded north-facing areas near creeks or streams (CalHerps 2019). Portions of the GKR alignment are within the breeding range of the yellow-blotched salamander.

**Presence in the Project Area:** Surveys for special-status wildlife species within the GKR alignment were conducted between May 15 and May 19, 2017, between April 29 and May 2, 2018, and between April 15 and April 19, 2019. The yellow-blotched salamander was not observed during the special-status wildlife surveys; this rare species is difficult to detect.



A 2001 CNDDDB record (Occurrence #18) was reported on the alignment approximately 0.3 miles (0.5 kilometers) north of Fort Tejon State Historic Park; a 1989 record (Occurrence #1) was reported approximately 0.2 miles (0.3 kilometers) southwest of the alignment at Fort Tejon State Historic Park; and a 2004 record (Occurrence #8) was reported approximately 0.8 miles (1.3 kilometers) west of the alignment approximately 2.0 miles (3.2 kilometers) northeast of Gorman.

Potentially suitable habitat, including deciduous forest with decaying logs rocks and other surface debris, occurs along the GKR alignment between Fort Tejon State Historic Park and Gorman. The yellow-blotched salamander is likely to occur within the GKR alignment between Fort Tejon State Historic Park and Gorman but does not occur elsewhere within the alignment.

### **1.3 Sensitive Wildlife Species Unlikely to Occur, Do Not Occur or Are Absent from the GKR Alignment**

Sensitive species are presented by listing status. Species within the same status are listed in alphabetical order by scientific name.

#### **1.3.1 CDFW Species of Special Concern**

##### **1.3.1.1 Bakersfield Legless Lizard (*Anniella grinnelli*) – CSC**

The Bakersfield legless lizard is a CDFW Species of Special Concern.

The Bakersfield legless lizard is a slender lizard 4.4 to 7 inches long (11.1 to 17.8 centimeters) from snout to vent with no legs, has eyelids, a shovel-shaped snout, smooth glossy scales, and a stubby tail. Bakersfield legless lizards have an olive-gray dorsal side, a grayish-red ventral side, and are orange on their sides. They also have a black stripe on their back and sides. Bakersfield legless lizards bear live young and are believed to breed from spring to mid-summer, producing one to four offspring in the fall (Jennings and Hayes 1994, CalHerps 2019).

Bakersfield legless lizards are restricted to the southern San Joaquin Valley, including the east side of the Carrizo Plains and within the city of Bakersfield. Bakersfield legless lizards occur primarily in areas with moist, sandy or loose loamy soils such as under sparse vegetation in shrublands, oak woodland, and riparian habitats (Banta and Morafka 1968, Jennings and Hayes 1994).

**Presence in the Project Area:** The Bakersfield legless lizard was not observed during the special-status wildlife surveys this rare species is difficult to detect.

A 2007 CNDDDB record (Occurrence #1) was reported approximately 0.2 miles (0.3 kilometers) east of the GKR alignment in Caliente Creek in the Sand Ridge Preserve. A 2016 CNDDDB record (Occurrence #10) was reported approximately 4.2 miles (6.7 kilometers) east of the GKR alignment along Bena Road where it crosses Caliente Creek. A 2017 record (Occurrence #12) was reported approximately 4.7 miles (7.5 kilometers) southwest of the GKR alignment along Tejon Creek in the foothills of the western Tehachapi Mountains.

Potentially suitable habitat occurs in moist, loose soils with leaf litter and debris in chaparral, oak woodland, and riparian habitats near streams in the foothills of the Sierra Nevada east of Bakersfield, such as



Cottonwood Creek and Caliente Creek, as well as near Tejon Creek in the foothills of the Tehachapi Mountains. Caliente Creek is disturbed in the vicinity of the GKR alignment and may not support high quality habitat for this species.

The Bakersfield legless lizard is likely to occur within the GKR alignment in moist, loose soils with leaf litter and debris near streams in the foothills of the Sierra Nevada in one location, near or in Caliente Creek. It is unlikely to occur in Tejon Creek where it crosses the alignment, where it has been reported within 5 miles (8 kilometers) of the alignment. It does not occur elsewhere within the alignment.

#### 1.3.1.2 California Glossy Snake (*Arizona elegans occidentalis*) – CSC

The California glossy snake is a CDFW Species of Special Concern.

California glossy snakes are a muscular snake that range from 26 to 70 inches (66 to 178 centimeters), have scales that are smooth and typically tan or light brown with dark brown blotches, and have a pale, unmarked underbody (CalHerps 2019). Females can lay 3 - 23 eggs in June and July which hatch in late summer and early fall (Stebbins, McGinnis, and Hussey 2012).

California glossy snakes are distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California in scrub and grassland habitats, often with loose or sandy soils (Zeiner et al. 1988, CDFW 2019).

**Presence in the Project Area:** No California glossy snakes were observed within the survey area at the time of the special-status wildlife surveys.

A 2013 CNDDDB record (Occurrence #51) was reported approximately 2.9 miles (4.7 kilometers) east of the GKR alignment along Bena Road in the Sierra Nevada foothills. All other records within 5 miles (8 kilometers) of the GKR alignment are more than 70 years old. A 1946 record (Occurrence #250) was reported approximately 0.3 miles (0.5 kilometers) west of the GKR alignment in the vicinity of Grapevine, and a 1939 record of a roadkill (Occurrence #249) was reported approximately 0.6 miles (1 kilometer) south of the GKR alignment, 3 miles (4.8 kilometers) southeast of Gorman.

Potentially suitable habitat for the California glossy snake occurs in grassland and scrub habitats in the Sierra Nevada foothills, near Grapevine, and near Gorman.

The California glossy snake is unlikely to occur within the GKR alignment in the Sierra Nevada foothills, but is unlikely to occur elsewhere within the alignment, based on the absence of recent records that overlap the alignment.

#### 1.3.1.3 Relictual Slender Salamander (*Batrachoseps relictus*) – CSC

The relictual slender salamander is a CDFW Species of Special Concern.

Relictual slender salamanders are 1.4 to 1.9 inches long (3.5 to 4.7 centimeters) from snout to vent, have a slim body with short limbs and a long tail, and are overall blackish brown. Relictual slender salamanders are terrestrial and even lay eggs in moist places on land. The young then develop in the egg and hatch with an adult body form (Zeiner et al. 1988).

They tend to occur near surface water and are associated with rocky areas with springs and minimal cover by oaks, pines, buckeyes, and sycamores (Jockusch et al. 2012, CalHerps 2019). Historically,



salamanders now known as *B. relictus* occurred only in a small range from the south side of the Kern River in the Lower Kern River Canyon, to a few locations on Breckenridge Mountain. But the lower Kern River Canyon populations have been extirpated; the species is now restricted to Breckenridge Mountain, with two known locations separated by 3.1 miles (5 kilometers). The northern terminus of the GKR alignment in the Kern River Canyon is within the historical range of the relictual slender salamander (Jockusch et al. 2012).

**Presence in the Project Area:** The relictual slender salamander was not observed during the special-status wildlife surveys.

A 2017 CNDDDB record (Occurrence #6) was reported at a seep on Breckenridge Mountain more than 5 miles (8 kilometers) east of the GKR alignment, and a second 2017 record (Occurrence #7) was reported near headwater seepage at Lucas Creek on Breckenridge Mountain at 5,462 to 5,577 feet (1665 to 1700 meters) amsl.

Potentially suitable habitat for the relictual slender salamander containing streams with running surface water, seepages, and springs occurs at the extreme northern end of the GKR alignment in the lower Kern Canyon, but the species is extirpated from this area. Unsuitable habitat includes all other portions of the GKR alignment.

The relictual slender salamander does not occur within the GKR alignment; it is extirpated from all portions of its historic range except at Breckenridge Mountain in the southern Sierra Nevada east of the GKR alignment.

#### 1.3.1.4 Mount Pinos Sooty Grouse (*Dendragapus fuliginosus howardi*) – CSC

The Mount Pinos sooty grouse is a CDFW Species of Special Concern.

The Mount Pinos sooty grouse is a chicken-like bird that is 15.8 to 19.7 inches (40 to 50 centimeters) in length. The males have sooty-gray plumage that sets off the yellow-orange comb above the eye; on each side of the neck, white-based feathers surround an inflatable yellow or reddish-purple neck sac. Females are mottled brown above, with a plain gray belly. Both sexes have a dark tail with a gray band (Cornell 2019). The Pacific race of the blue grouse, including the Mount Pinos sooty grouse, is darker overall than interior races. The Mount Pinos sooty grouse is a ground nester, typically laying between seven and ten eggs; incubation lasts 25-26 days (Ehrlich et al 1988).

The Mount Pinos sooty grouse occurs in montane coniferous forests that support white fir and other conifers at or above 7,500 feet (2,286 meters) amsl (Shuford and Gardali 2008).

**Presence in the Project Area:** The Mount Pinos sooty grouse was not observed during the special-status wildlife surveys.

A 1931 CNDDDB record (Occurrence #4) was reported approximately 7.4 miles (12 kilometers) west of the GKR alignment in the vicinity of Frazier Mountain. There is a 1993 eBird record from Mount Pinos of two sooty grouse that may represent the first observation of the species in the area since 1964.

The two CNDDDB records occur more than 7 miles (12 kilometers) west of the GKR alignment in the vicinity of Frazier Mountain and Mount Pinos. Suitable habitat and elevations for the Mount Pinos sooty grouse are absent from the GKR alignment, and this species does not occur within the alignment.



#### 1.3.1.5 Western Pond Turtle (*Emys marmorata*) – CSC

The western pond turtle is a CDFW Species of Special Concern.

Western pond turtles are a small to medium-sized turtle, typically 3.5 to 8.5 inches (1.4 to 3.3 centimeters) in shell length and are blackish to olive brown with a low unkeeled carapace (Stebbins 2012). Females enter upland habitat to dig a nest between April and August and typically lay a clutch of 2 to 11 eggs (Jones 2013).

The western pond turtle is an aquatic species that occurs in ponds, marshes, rivers, or streams below 6,000 feet (1,828 meters) amsl that often contain aquatic vegetation. Western pond turtles also utilize basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 kilometers from water for egg-laying (CDFW 2019).

**Presence in the Project Area:** No western pond turtles were observed within the survey area at the time of the special-status wildlife surveys.

Two undated CNDDDB records include Occurrence #862 located 0.7 miles (1.1 kilometers) west of the alignment at Cottonwood Creek northeast of Bakersfield, and Occurrence #926 located approximately 0.1 miles (0.2 kilometers) north of the GKR alignment at the mouth of the Kern River Canyon. There is an undated CNDDDB record (Occurrence #864) located approximately 0.3 miles (0.5 kilometers) south of the alignment at Fort Tejon State Historic Park.

Potentially suitable habitat occurs along the alignment where it crosses or is in close proximity to the Kern River, Cottonwood Creek northeast of Bakersfield, and where perennial water bodies such as ponds and streams occur between Grapevine and the Gorman Substation.

The western pond turtle is unlikely to occur within the GKR alignment as this species is highly aquatic, the locations where the alignment crosses potentially suitable aquatic habitat for the western pond turtle are limited, and there are no recent observations of this species within the alignment.

#### 1.3.1.6 San Joaquin Coachwhip (*Masticophis [Coluber] flagellum ruddocki*) – CSC

The San Joaquin coachwhip is a CDFW Species of Special Concern.

It is a slender fast-moving snake with smooth scales, a large head and eyes, a thin neck, and a long thin tail. There is no well-defined stripe lengthwise on the body in this species. It has large scales above the eyes and 17 rows of scales at midbody. The braided appearance of scales on the tail (like a whip) gives this species its common name. The San Joaquin coachwhip is tan, olive brown, or yellowish brown in color. It lacks the very dark head and neckbands of the other subspecies of *Coluber* found in California (CalHerps 2019). The San Joaquin coachwhip generally mates in May and lays a clutch of 4 - 20 eggs in early summer (June - July).

This subspecies, *Masticophis [Coluber] flagellum ruddocki* - San Joaquin coachwhip, is endemic to California, ranging from Arbuckle in the Sacramento Valley in Colusa County southward to the Grapevine in the Kern County portion of the San Joaquin Valley and westward into the inner South Coast Ranges. It occurs in open, dry, treeless areas with little or no cover, including valley grassland and saltbush scrub and avoids dense vegetation where it cannot move quickly, including mixed oak - chaparral woodland. Portions of the GKR alignment are within the breeding range of this species (Thompson et al. 2016).



**Presence in the Project Area:** The San Joaquin coachwhip was not observed during the special-status wildlife surveys.

A 2012 CNDDDB record (Occurrence #90) was reported approximately 1.4 miles (2.2 kilometers) east of the GKR alignment on the south side of Tejon Creek in the western Tehachapi Mountains. Another 2012 record (Occurrence #89) was reported approximately 4.0 miles (6.4 kilometers) southwest of the GKR alignment near Chanac Creek in the Tehachapi Mountains. A 2010 CNDDDB record (Occurrence #91) was reported approximately 3.3 miles (5.3 kilometers) west of the GKR alignment, 2.2 miles (3.5 kilometers) southwest of Wheeler Ridge in the Wind Wolves Preserve.

Potentially suitable grassland habitat for the San Joaquin coachwhip occurs along the GKR alignment in the uncultivated land in the Tehachapi Mountains southeast of Arvin and north of Grapevine, but there are no records of this species within the GKR alignment. The San Joaquin coachwhip is likely to occur within the GKR alignment on the south side of Tejon Creek in the western Tehachapi Mountains, based on the 2012 CNDDDB record (Occurrence #90), but is unlikely to occur elsewhere within the alignment, based on the lack of other records within 3 miles (4.8 kilometers) of the alignment.

#### 1.3.1.7 Tulare Grasshopper Mouse (*Onychomys torridus tularensis*) – CSC

The Tulare grasshopper mouse is a CDFW Species of Special Concern.

The Tulare grasshopper mouse has a stout body with a short, club-like tail. They are sharply bicolored with the head and upperparts pale brown to gray or pinkish- cinnamon and the underparts white. The tail is usually bicolored with a white tip.

Tulare grasshopper mice occur in hot, arid valleys and scrub in the southern San Joaquin Valley. Their diet consists almost exclusively of arthropods, and this species requires an abundant supply of insects (CDFW 2019).

**Presence in the Project Area:** No Tulare grasshopper mice were observed within the survey area at the time of the special-status wildlife surveys.

Two 1918 CNDDDB records (Occurrence #3 and #40) were reported from Caliente Wash north of Arvin. Occurrence #3 broadly overlaps the alignment where it crosses Caliente Creek. Occurrence #40 was reported further north in the same wash about 1.2 miles (1.9 kilometers) east of the GKR alignment. A 1973 record (Occurrence #39) was reported 3.6 miles (5.8 kilometers) east of the Highwind Substation at Cameron, a small community in the Tehachapi Mountains west of Tehachapi Pass.

Potentially suitable grassland and scrub habitat is present within the GKR alignment near Caliente Creek and the nearby low foothills of the southern Sierra Nevada; this species has not been reported in the San Joaquin Valley near the GKR alignment in other locations. Unsuitable habitat includes all other portions of the GKR alignment in cooler upland areas and in dense shrublands and woodlands, wetlands, croplands, and developed areas.

Based upon the absence of recent CNDDDB records, the Tulare grasshopper mouse is unlikely to occur within the GKR alignment in Caliente Creek and does not occur elsewhere within the alignment.

#### 1.3.1.8 Tehachapi Pocket Mouse (*Perognathus alticola inexpectatus*) – CSC, USFS S

The Tehachapi pocket mouse is a CDFW Species of Special Concern and a USFS Sensitive species.



Approximately 6 3/8 to 7 1/8 inches long (160 to 181 millimeters); It is olivaceous buff to brownish above with white to whitish underparts. The tail is pale and colored like the upperparts at the base, but dusky or black at the tip and white below. The ears have white or yellowish hairs outside and inside. It is the only *Perognathus* species with a hindfoot measurement of over 3/4 inches (20 millimeters) long (Whitaker 1996).

This species inhabits grasslands and open shrublands and woodlands in loose sandy soils between 3,500 and 6,000 feet (1,067 and 1,829 meters) amsl in the Tehachapi Mountains from Tehachapi Pass southwest towards Gorman, west to Cuddy Valley near Mount Pinos, and east along the lower slopes of the San Gabriel Mountains to Elizabeth Lake. Tehachapi pocket mice use burrows for cover and nesting and aestivate during extreme weather. They forage on open ground and under shrubs (Zeiner et al. 1988-1990, CDFW 2019).

**Presence in Survey area:** No Tehachapi pocket mice were observed during the special-status wildlife surveys.

There are two CNDDDB records that overlap the alignment near the Gorman Substation. These records are all more than 40 years old. A 1974 record (Occurrence #9) was reported 1.5 miles (2.2 kilometers) west of the GKR alignment and west of the Gorman Substation. A 1941 record (Occurrence #8) overlaps the alignment near the Gorman Substation. A 1952 record (Occurrence #7) overlaps the alignment just east of the Gorman Substation. Two more recent records (2003, 2006) for the species occur at higher elevations in the Tehachapi Mountains to the east of Lebec and northeast of Gorman in more remote locations.

Potentially suitable habitat within the GKR alignment is present within the annual grasslands and open shrublands near the Gorman Substation, and possibly in the Tehachapi Valley. Other locations within the alignment do not provide documented suitable habitat for this species, with confirmed observations within the past 20 years.

The Tehachapi pocket mouse is unlikely to occur within the GKR alignment near the Gorman Substation and within the Tehachapi Valley; it does not occur elsewhere within the alignment.

#### 1.3.1.9 Two-striped Garter Snake (*Thamnophis hammondi*) – CSC, USFS S

The two-striped garter snake is a CDFW Species of Special Concern and a USFS Sensitive species.

It is a medium-sized snake with a head barely wider than the neck and keeled dorsal scales, generally 18 to 30 inches (45.7 to 76.2 centimeters) long. The color pattern of the two-striped garter snake is variable with two basic pattern morphs; both have a drab olive, brown, or dark gray ground color, with no dorsal stripe, except for a spot on the neck (Calherps 2019). Breeding has been observed in late March and early April, with live young born in late July and August.

This species is aquatic, found in or near permanent fresh water, and often along streams in freshwater marsh, wetlands, and riparian scrub and forest (Zeiner et al. 1988, CDFW 2019).

**Presence in the Project Area:** No two-striped garter snakes were observed within the survey area at the time of the special-status wildlife surveys.

There are two CNDDDB records, both from 1983, that occur near the GKR alignment near Gorman on the south side of the Tehachapi Mountains. CNDDDB Occurrence #149 was reported approximately 0.1 miles (0.2



kilometers) southwest of the GKR alignment near Gorman Creek near the Gorman Substation. CNDDDB Occurrence #150 was reported approximately 1.6 miles (2.6 kilometers) west of the alignment and west of the Gorman Substation.

Potentially suitable habitat for the two-striped garter snake is present within the GKR alignment where aquatic features such as ponds and stream channels occur on the south side of the Tehachapi Mountains near the Gorman Substation; however, CNDDDB observations are over 35 years old. All other areas within the alignment are unlikely to support this species.

The two-striped garter snake is unlikely to occur in aquatic habitat on the south side of the Tehachapi Mountains near the Gorman Substation. It does not occur elsewhere within the alignment.

#### 1.3.1.10 Sierra Night Lizard (*Xantusia vigilis sierrae*) – CSC, USFS S

The Sierra night lizard is a CDFW Species of Special Concern and a USFS Sensitive species.

The Sierra night lizard is a small lizard with soft skin and fine granular scales on most of the body. Its coloration is olive, grayish, or brown, with light brown or black spots that form a net-like pattern. The underside is whitish. Its head is covered with large plates and the head and body are flattened. A broad and conspicuous stripe extends from the eye to the shoulder. Information on its reproduction is limited but related California *Xantusiids* breed in late spring and the young are born live, 1-3 per brood, from August to October.

The Sierra night lizard inhabits rocky outcrops in a small portion of the Greenhorn Mountains within the southern Sierra Nevada in open grassland with scattered oak woodland, gray pine (*Pinus sabiniana*), and low shrubs (CalHerps 2019).

**Presence in the Project Area:** The Sierra night lizard was not observed during the special-status wildlife surveys.

A 2008 CNDDDB record (Occurrence #8) was reported approximately 2.3 miles (3.7 kilometers) north of the Kern River Hydro Generation Facility in the Sierra Nevada. A 1979 record (Occurrence #10) was reported approximately 2.5 miles (4.0 kilometers) west of the Kern River Hydro Generation Facility in the Sierra Nevada; and a 1987 record (Occurrence #9) was reported approximately 2.7 miles (4.3 kilometers) northwest of the Kern River Hydro Generation Facility in the Sierra Nevada. All CNDDDB records are at higher elevations on the north side of the Kern River near the Kern River Hydro Generation Facility, and the closest observation is 2.3 miles (3.7 kilometers) north of the alignment and north of the Kern River.

The Sierra night lizard does not occur within the GKR alignment, and its range is north of the Kern River canyon outside of the alignment.

### 1.3.2 United State Forest Service Sensitive Species

#### 1.3.2.1 San Bernardino Ringneck Snake (*Diadophis punctatus modestus*) - USFS S

The San Bernardino ringneck snake is a USFS Sensitive species.

The San Bernardino ringneck snake is a slender non-poisonous snake that averages in length from 11 inches to 16 inches (28 centimeters to 48 centimeters). The San Bernardino ringneck snake has a blue-gray or olive to brownish-black back color, a bright orange to reddish underside with speckled black spots



and a narrow orange band around the neck (CalHerps 2019).

The San Bernardino ringneck snake can be found in annual grasslands, rocky areas within valley-foothill, mix coniferous forests, chaparral and moist habitats (i.e., wet meadows). The San Bernardino ringneck snake is a subspecies of the ringneck snake (*Diadophis punctatus*) and is endemic to California. The San Bernardino ringneck snake can be found from Santa Barbara south to San Diego and inland as far as the San Bernardino Mountains (Zeiner et al. 1988, CalHerps 2019).

**Presence in the Project Area:** The San Bernardino ringneck snake was not observed during the special-status wildlife surveys.

A 2000 CNDDDB record (Occurrence #3) was reported 2.5 miles (4.0 kilometers) northeast of the alignment in Live Oak Canyon under blue oak and black oak trees, herbaceous species, and debris in the Tehachapi Mountains east of Fort Tejon State Historic Park.

The San Bernardino ringneck snake is unlikely to occur within the GKR alignment east of Fort Tejon State Historic Park and does not occur elsewhere within or near the alignment.

#### 1.3.2.2 Fringed Myotis (*Myotis thysanodes*) – USFS S

The fringed myotis is a USFS Sensitive species.

The fringed myotis is a large bat species having a total body length of 3.4 inches (85 millimeters) and tail length of 1.4 inches (37 millimeters). This species has light brown fur on its back and off-white fur underneath (Vingiello 2002). The fringed myotis is widespread in California, occurring in all but the Central Valley and Colorado and Mojave deserts. A single pup is born in late June or early July and can fly in about 16 days (Zeiner et al. 1988-1990).

Fringed myotis occur in a variety of habitats including desert-scrub to fir-pine vegetation communities. Optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer, generally at 4,000 to 7,000 feet (1,300 to 2,200 meters) amsl. They are most commonly found in oak and pinyon woodlands. During summer months, roosting sites consist of abandoned mines, tree snags, rock outcrops, and natural caves, with the most common roosts including abandoned mines, caves, and buildings (Pierson and Rainey 1998). Winter roosting behavior for this species is relatively unknown.

**Presence in the Project Area:** No fringed myotis or their roosts were observed during the special-status wildlife surveys.

A 1945 record (Occurrence #177) was reported in an area broadly overlapping the GKR alignment near Lebec on the west side of Interstate 5, near the intersection of Lebec Road and Ridge Route Drive; annotations indicate a single specimen was collected from an old icehouse at the back corner of the Lebec Hotel; the Lebec Hotel was closed in 1968 and demolished in 1971.

Potentially suitable habitat for the fringed myotis includes natural caves, rock outcroppings with crevices, and abandoned mine shafts and buildings in mountainous areas within the GKR alignment, such as the San Emigdio Mountains above Fort Tejon State Historic Park near the single CNDDDB observations. Mine shafts do not occur along the alignment in this area.

The fringed myotis is unlikely to roost within the GKR alignment based upon the absence of suitable roosting habitat occurring within the alignment; on occasion, it may forage within the alignment.



### 1.3.3 CDFW Sensitive Invertebrates

Twelve species of invertebrates with CDFW State Rankings of S1, S1S2, and S2 have CNDDDB records in quadrangles that overlap the GKR alignment. State Rankings refer to imperilment status within California state boundaries, as follows: S1—Critically imperiled in California because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state. S2—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 state (CNDDDB 2019).

None of these species were observed during field surveys but occurrence records are summarized below.

#### 1.3.3.1 An Andrenid Bee (*Andrena macswaini*) – S1S3

The andrenid bee, also known as a mining bee, has a CDFW State Ranking of S1S3.

This andrenid bee has sexes that are generally similar in size, with the female slightly larger. Both sexes consist of a slender gray-green integument with bluish pleura. This andrenid bee harvests pollen from flowers of *Camissonia*.

This species occurs in a few locations on the west- and south-facing slopes of the Sierra Nevada foothills from Madera County south to Kern County. It nests in deep sandy soils (CNDDDB 2019).

**Presence in the Project Area:** Andrenid bees were not observed during the special-status wildlife surveys; this rare species is difficult to detect.

A single 1960 CNDDDB record (Occurrence #1) was reported 2.6 miles (4.2 kilometers) east of the GKR alignment in the foothills of the southern Sierra Nevada; this record represents observations of this bee feeding on *Camissonia* in 1958, 1959, and 1960. There are no other records for this bee in Kern County.

Potentially suitable habitat for this bee includes deep sandy soils for nesting and the presence of *Camissonia* in the foothills of the western and southern Sierra Nevada. Unsuitable habitat includes all locations south of the Sierra Nevada foothills and all locations within the southern Sierra Nevada foothills lacking deep sandy soils and *Camissonia*.

There are no observations of this andrenid bee overlapping the GKR alignment and the single observation is almost 60 years old. This andrenid bee is unlikely to occur within the GKR alignment where there are deep sandy soils and *Camissonia* in the foothills of the southern Sierra Nevada. This bee does not occur in other locations within the alignment.

#### 1.3.3.2 Obscure Bumble Bee (*Bombus caliginosus*) – S1S2

The obscure bumble bee has a CDFW State Ranking of S1S2.

The obscure bumble bee has yellow hair on the face and top of the head and is predominantly black on the side of the thorax and the lower anterior surface (Koch, et.al. 2012).



The obscure bumble bee occurs in grasslands and shrublands from northern Washington to southern California (CNDDDB 2019).

**Presence in the Project Area:** The obscure bumble bee was not observed during the special-status wildlife surveys.

A 1988 CNDDDB record (Occurrence #172) was reported 5 miles (8 kilometers) to the west of the GKR alignment near Lebec in Frazier Park at 4,800 feet (1,463 meters) amsl. There are no other records for the species within 10 miles (16 kilometers) of the alignment.

There is no suitable habitat for the obscure bumble bee within the GKR alignment. There are no records closer than 5 miles (8 kilometers) to the alignment, and the one CNDDDB observation is over 30 years old and at a higher elevation than the highest elevation within the alignment, 4,531 feet (1,380 meters) amsl. The obscure bumble does not occur within the GKR alignment.

#### 1.3.3.3 Crotch's Bumble Bee (*Bombus crotchii*) – S1S2

The Crotch's bumble bee has a CDFW State Ranking of S1S2.

Crotch's bumble bees are short-cheeked bees with a rounded angle on their mid leg. Females are banded yellow and black, with the distal portion of the abdomen ranging from red to black. Crotch's bumble bees prefer relatively warm and dry sites and are found in open grasslands and scrub habitats where they nest underground (Hatfield et al. 2015a).

The distribution of the Crotch's bumble bee ranges from the coast of California to the western flanks of the Cascade Range and Sierra Nevada, with uncommon occurrences in the margins of the Mojave and Sonoran deserts. Habitat requirements include pollen from up to 33 plant genera, including buckwheat (*Eriogonum*), milkweed (*Asclepias*), lupine (*Lupinus*), *Eschscholzia*, and pincushion (*Chaenactis*, USDA 2012).

**Presence in the Project Area:** The Crotch's bumble bee was not observed during the special-status wildlife surveys; this rare species is difficult to detect.

There are several CNDDDB records for Crotch's bumble bee within or near the GKR alignment; all are over 40 years old. A 1954 record (Occurrence #91) overlaps the GKR alignment in the Cummings Valley, and a 1956 record (Occurrence #90) overlaps the alignment further east in Tehachapi. A 1952 record (Occurrence #96) was reported in Arvin 0.5 mile (0.8 kilometers) west of the alignment. A 1954 record (Occurrence # 105) was reported 1.5 miles (2.2 kilometers) west of the alignment at Wheeler Ridge. A 1975 record (Occurrence #109) overlaps the alignment at Fort Tejon State Historic Park. A 1976 record (Occurrence #126) was reported 0.8 miles (1.3 kilometers) west of the Gorman Substation.

Suitable habitat for the Crotch's bumble bee includes grasslands and shrublands supporting their preferred pollinator plants. Historic locations (over 40 years in age) include the Cummings and Tehachapi Valleys, the area near Grapevine, Fort Tejon State Historic Park, and the area near the Gorman Substation.

The Crotch's bumble bee is unlikely to occur within the GKR alignment in historic locations, including the Cummings and Tehachapi Valleys, the area near Grapevine, Fort Tejon State Historic Park, and the area



near the Gorman Substation, but does not occur elsewhere within the alignment.

#### 1.3.3.4 Comstock's blue butterfly (*Euphilotes battoides comstocki*) – S2

The Comstock's blue butterfly has a CDFW State Ranking of S2.

The Comstock's blue butterfly is a subspecies of the more-widespread square-dotted blue butterfly (*Euphilotes battoides*). The Comstock's blue butterfly occurs in grassland vegetation and uses buckwheat (*Eriogonum*) as a pollen source.

**Presence in the Project Area:** The Comstock's blue butterfly was not observed during the special-status wildlife surveys; this rare species is difficult to detect.

There are only two CNDDDB records for the Comstock's blue butterfly, both in Kern County. A 1988 record (Occurrence #1) generally overlaps the alignment in Tehachapi. A 1977 record (Occurrence #2) was reported from the Piute Mountains more than 20 miles (32 kilometers) east of the Kern River Hydro Generating Facility.

Potentially suitable habitat for the Comstock's blue butterfly include grassland vegetation with buckwheat (*Eriogonum*) present, and such habitat was present 30 years ago in Tehachapi. The Comstock's blue butterfly is unlikely to occur near Tehachapi in grassland vegetation that supports with buckwheat (*Eriogonum*) but does not occur elsewhere within the alignment.

#### 1.3.3.5 Whitefir Shoulderband Snail (*Helminthoglypta concolor*) – S1S2

The whitefir shoulderband snail has a CDFW State Ranking of S1S2.

The whitefir shoulderband snail is a terrestrial snail found known only from the Tehachapi Mountains in white fir (*Abies concolor*) forest beneath decaying bark and logs above 5,289 feet (1,612 meters) amsl.

**Presence in the Project Area:** The whitefir shoulderband snail was not observed during the special-status wildlife surveys.

There are four CNDDDB records for the whitefir shoulderband snail in the Tehachapi Mountains above 5,289 feet (1,612 meters) amsl.

The highest elevation within the GKR alignment is 4,531 feet (1,380 meters) amsl, below the minimum elevation for this species. There are no white fir trees within the alignment.

There is no suitable habitat for the whitefir shoulderband snail within the GKR alignment, and it does not occur within the alignment.

#### 1.3.3.6 Moestan Blister Beetle (*Lytta moesta*) – S2

The moestan blister beetle has a CDFW State Ranking of S2.

The moestan blister beetle is an elongated black beetle with a soft elytra, averaging in length from 0.6 inches to 0.8 inches (16 to 20 millimeters). The moestan blister beetle can be found in grassland and shrubland habitats within the Central Valley and adjacent foothills of the Sierra Nevada (CNDDDB 2019).

**Presence in the Project Area:** The moestan blister beetle was not observed during the special-status wildlife surveys.



Two historical CNDDDB records occur near and west of the GKR alignment in the San Joaquin Valley. An undated record (Occurrence #12) was reported from Edison, and a 1931 record (Occurrence #2) was reported from Arvin.

The area surrounding Edison and Arvin is in active agricultural production, and there is little remaining grassland or shrubland habitat for this species near to where it was found over 85 years ago.

The moestan blister beetle is unlikely to occur in grassland and shrubland vegetation within the GKR alignment between Edison and Arvin, where native vegetation is mostly absent, and this species does not occur elsewhere within the alignment.

#### 1.3.3.7 Morrison's Blister Beetle (*Lytta morrisoni*) – S1S2

The Morrison's blister beetle has a CDFW State Ranking of S1S2.

The Morrison's blister beetle is an elongated beetle with moderately pubescent elytra with dull brown wings and can average in length from 0.5 to 0.7 inches (12 to 17 millimeters). The pronotum for the Morrison's blister beetle can be partly to entirely black but is usually orange (CDFW 2019).

The Morrison's blister beetle occurs in grasslands and shrublands in the Central Valley between San Benito and Kern Counties (CDFW 2019).

**Presence in the Project Area:** The Morrison's blister beetle was not observed during the special-status wildlife surveys.

One undated CNDDDB record (Occurrence #2) for the Morrison's blister beetle was reported from Edison, 2.8 miles (4.5 kilometers) west of the GKR alignment.

The area surrounding Edison is in active agricultural production, and there is little remaining grassland or shrubland habitat for this species near to where it was found decades ago.

The Morrison's blister beetle is unlikely to occur in grassland and shrubland vegetation within the GKR alignment near Edison, where native vegetation is mostly absent, and this species does not occur elsewhere within the alignment.

#### 1.3.3.8 San Emigdio Blue Butterfly (*Plebulina emigdionis*) – S1S2

The San Emigdio blue butterfly has a CDFW State Ranking of S1S2.

The San Emigdio blue butterfly has a wingspan of 0.8 to 1.2 (2.2 to 2.9 centimeters). The upper wings of males are pale blue with an orangish-brown border, and the hindwings have a faint orange band at the outer margin. Females are brown fading to blue near the thorax, with orange bands near outer wing margins. The underside of both sexes is white with small black spots.

The San Emigdio blue butterfly occurs in the montane desert regions of southern California from the southern Owens Valley into the Mojave Desert, and from the southern Sierra Nevada to Los Angeles County. The host plant for the caterpillar is four-winged saltbush (*Atriplex canescens*).

**Presence in the Project Area:** The San Emigdio blue butterfly was not observed during the special-status wildlife surveys.

One CNDDDB record (Occurrence #10) for the San Emigdio blue butterfly was reported 1.4 miles (2.2



kilometers) southwest of the GKR alignment in a location described as “near Frazier Park” at 3,875 feet (1,181 meters) amsl in 1927. In 2007, this butterfly was photographed again in this location, and is said to potentially occur between Interstate 15 and Lake of the Woods in the Cuddy Valley west of the alignment.

Potentially suitable habitat for the San Emigdio blue butterfly within the GKR alignment includes locations supporting four-wing saltbush between Lebec and the Gorman Substation, where it is unlikely to occur, and it is unlikely to occur elsewhere within the alignment.

#### 1.3.3.9 Kern River Pyrg (*Pyrgulopsis greggi*) – S1

The Kern River pyrg has a CDFW State Ranking of S1.

The Kern River pyrg is a freshwater springsnail with a conical shell. The Kern River pyrg occurs in mud and watercress in Grapevine Creek in Fort Tejon State Historic Park (CNDDDB 2019).

**Presence in the Project Area:** The Kern River Pyrg was not observed during the special-status wildlife surveys; this rare species is difficult to detect.

There are two CNDDDB records for the Kern River pyrg within or near the GKR alignment, both from 1991. Occurrence #1 overlaps the GKR alignment at Fort Tejon State Historic Park, where the Kern River Pyrg was described as common in mud and watercress in this “medium-sized, moderately impacted stream.” Occurrence #2 was described as outside of the alignment at an unnamed spring.

Potentially suitable habitat for the Kern River Pyrg within the GKR alignment occurs in Grapevine Creek within and near Fort Tejon State Historic Park; this species does not occur outside of Grapevine Canyon.

The Kern River pyrg is unlikely to occur within the GKR alignment in Grapevine Creek as it passes through Fort Tejon State Historic Park; there are no springs within the alignment, and the Kern River pyrg does not occur elsewhere within the alignment.

#### 1.3.3.10 Tehachapi Mountain Silverspot Butterfly (*Speyeria egleis tehachapina*) – S2

The Tehachapi Mountain silverspot butterfly has a CDFW State Ranking of S2.

The Tehachapi Mountain silverspot butterfly is endemic to Kern County, where it is found between 7,000 and 8,400 feet (2,134 and 2,560 meters) in the Tehachapi Mountains and Piute Mountains of the southern Sierra Nevada. It utilizes *Viola purpurea* as a larval food source (CNDDDB 2019)

**Presence in the Project Area:** The Tehachapi Mountain silverspot butterfly was not observed during the special-status wildlife surveys.

There are four CNDDDB records for the Tehachapi Mountain silverspot butterfly. A 1962 record (Occurrence #1 and the type locality) was reported from Tehachapi Mountain at 7,000 feet (2,134 meters) amsl, 3.7 miles (6 kilometers) south of the GKR alignment in the Tehachapi Valley. The other records are further away in the Piute Mountains.

There is no suitable habitat for the Tehachapi Mountain silverspot butterfly within the GKR alignment. The species occurs at higher elevations than the alignment and requires a larval plant that is not present.



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**Appendix G.****List of Biologists for Survey Date by Type of Survey Conducted in 2017-2019****TLRR Sensitive Species and Habitat Report****Gorman - Kern River 66 kV Subtransmission Line Project****Southern California Edison**

Type of Survey	Year	Date(s)	Biologists
Vegetation Mapping	2017	May 15 - 19	Ricardo Montijo, Cynthia Nicely, Ceclie Shohet, Alyssa Taylor, Sarah Termond
Vegetation Mapping	2018	April 29 - May 2	Mary Carroll, Cynthia Nicely, Mitch Siemens, Nathan Vega
Vegetation Mapping	2019	April 15 -19	Mary Carroll, Cynthia Nicely, Mitch Siemens, Nathan Vega
Special-status Plant Surveys	2017	May 15 - 19	Ricardo Montijo, Cynthia Nicely, Ceclie Shohet, Alyssa Taylor, Sarah Termond
Special-status Plant Surveys	2018	April 29 - May 2	Mary Carroll, Cynthia Nicely, Mitch Siemens, Nathan Vega
Special-status Plant Surveys	2019	April 15 -19	Mary Carroll, Cynthia Nicely, Mitch Siemens, Nathan Vega
Wildlife Surveys	2017	May 15 - 19	Mike Cady, Trevor Darragh, Asher Deitch, Paulette Loubet, Ricardo Montijo, Cynthia Nicely, Matt Schaap, Sarah Termond
Wildlife Surveys	2018	April 29 - May 2	Khua Moua, Mitch Siemens
Wildlife Surveys	2019	April 15 -19	Khua Moua, Mitch Siemens
Burrowing Owl	2017	May 8 – 12	Colleen Delvecchio, Asher Deitch, Elizabeth Hingle, Paulette Loubet, Khua Moua, Bryant Reynolds, Matt Schapp, Mitch Siemens, Alyssa Taylor, Sarah Termond



Scientific Name	Common Name	Native or Non-native
<b>Amphibians</b>		
<i>Spea hammondi</i>	Western spadefoot	Native
<b>Birds</b>		
<i>Accipiter cooperii</i>	Cooper's hawk	Native
<i>Actitis macularia</i>	Spotted sandpiper	Native
<i>Agelaius phoeniceus</i>	Red-winged blackbird	Native
<i>Agelaius tricolor</i>	Tricolored blackbird	Native
<i>Anas platyrhynchos</i>	Mallard duck	Native
<i>Anas strepera</i>	Gadwall duck	Native
<i>Aquila chrysaetos</i>	Golden eagle	Native
<i>Ardea alba</i>	Great egret	Native
<i>Athene cunicularia</i>	Burrowing owl	Native
<i>Baeolophus inornatus</i>	Oak titmouse	Native
<i>Bubo virginianus</i>	Great horned owl	Native
<i>Buteo jamaicensis</i>	Red-tailed hawk	Native
<i>Butorides virescens</i>	Green heron	Native
<i>Callipepla californica</i>	California quail	Native
<i>Calypte anna</i>	Anna's hummingbird	Native
<i>Calypte costae</i>	Costa's hummingbird	Native
<i>Cardellina pusilla</i>	Wilson's warbler	Native
<i>Carduelis lawrencei</i>	Lawrence's goldfinch	Native
<i>Carduelis psaltria</i>	Lesser goldfinch	Native
<i>Carpodacus mexicanus</i>	House finch	Native
<i>Cathartes aura</i>	Turkey vulture	Native
<i>Chaetura vauxi</i>	Vaux's swift	Native
<i>Charadrius vociferus</i>	Killdeer	Native
<i>Chondestes grammacus</i>	Lark sparrow	Native
<i>Circus hudsonius</i>	Northern harrier	Native
<i>Columba livia</i>	Rock dove	Non-native
<i>Corvus brachyrhynchos</i>	American crow	Native
<i>Corvus corax</i>	Common raven	Native
<i>Dendroica coronata</i>	Yellow-rumped warbler	Native
<i>Dendroica nigrescens</i>	Black-throated gray warbler	Native
<i>Egretta thula</i>	Snowy egret	Native
<i>Eremophila alpestris actia</i>	California horned lark	Native
<i>Euphagus cyanocephalus</i>	Brewer's blackbird	Native
<i>Falco mexicanus</i>	Prairie falcon	Native
<i>Falco sparverius</i>	American Kestrel	Native
<i>Fulica americana</i>	American coot	Native
<i>Geothlypis trichas</i>	Common yellowthroat	Native
<i>Hirundo rustica</i>	Barn swallow	Native



Appendix H. Observed Wildlife Species along the GKR Alignment  
 TLRR Sensitive Species and Habitat Report  
 Gorman - Kern River 66 kV Project  
 Southern California Edison



Scientific Name	Common Name	Native or Non-native
<i>Icterus bullockii</i>	Bullock's oriole	Native
<i>Zenaida macroura</i>	Mourning dove	Native
<b><i>Lanius ludovicianus</i></b>	<b>Loggerhead shrike</b>	<b>Native</b>
<i>Melanerpes formicivorus</i>	Acorn woodpecker	Native
<i>Melospiza lincolni</i>	Lincoln's sparrow	Native
<i>Mimus polyglottos</i>	Northern mockingbird	Native
<i>Molothrus ater</i>	Brown-headed cowbird	Non-native
<i>Myiarchus cinerascens</i>	Ash-throated flycatcher	Native
<i>Passer domesticus</i>	House sparrow	Non-native
<i>Petrochelidon pyrrhonota</i>	Cliff swallow	Native
<b><i>Phalacrocorax auritus</i></b>	<b>Double-crested cormorant</b>	<b>Native</b>
<i>Pheucticus melanocephalus</i>	Black-headed grosbeak	Native
<b><i>Plegadis chihi</i></b>	<b>White-faced ibis</b>	<b>Native</b>
<i>Pipilo crissalis</i>	California towhee	Native
<i>Piranga ludoviciana</i>	Western tanager	Native
<b><i>Poocetes gramineus affinis</i></b>	<b>Oregon vesper sparrow</b>	<b>Native</b>
<b><i>Progne subis</i></b>	<b>Purple martin</b>	<b>Native</b>
<i>Salpinctus obsoletus</i>	Rock wren	Native
<i>Sayornis nigricans</i>	Black phoebe	Native
<b><i>Setophaga petechia</i></b>	<b>Yellow warbler</b>	<b>Native</b>
<i>Sialia mexicana</i>	Western bluebird	Native
<i>Spinus lawrencei</i>	Lawrence's goldfinch	Native
<b><i>Spizella breweri</i></b>	<b>Brewer's sparrow</b>	<b>Native</b>
<i>Streptopelia decaocto</i>	Eurasian collard dove	Non-native
<i>Sturnella neglecta</i>	Western meadowlark	Native
<i>Sturnus vulgaris</i>	European starling	Non-native
<i>Thryomanes bewickii</i>	Bewick's wren	Native
<i>Turdus migratorius</i>	American robin	Native
<i>Tyrannus verticalis</i>	Western kingbird	Native
<i>Tyrannus vociferans</i>	Cassin's kingbird	Native
<i>Vermivora celata</i>	Orange-crowned warbler	Native
<i>Vermivora ruficapilla</i>	Nashville warbler	Native
<i>Vireo gilvus</i>	Warbling vireo	Native
<i>Zenaida macroura</i>	Mourning dove	Native
<i>Zonotrichia atricapilla</i>	Golden-crowned sparrow	Native
<i>Zonotrichia leucophrys</i>	White-crowned sparrow	Native



Scientific Name	Common Name	Native or Non-native
<b>Mammals</b>		
<i>Canis latrans</i>	Coyote	Native
<i>Lepus californicus</i>	Black-tailed jackrabbit	Native
<i>Microtis californicus</i>	California vole	Native
<i>Neotoma macrotis</i>	Big-eared woodrat	Native
<i>Spermophilus beecheyi</i>	California ground squirrel	Native
<i>Sylvilagus audubonii</i>	Desert cottontail	Native
<b><i>Taxidea taxus</i></b>	<b>American badger</b>	<b>Native</b>
<i>Thomomys bottae</i>	Botta's pocket gopher	Native
<b><i>Vulpes macrotis mutica</i></b>	<b>San Joaquin kit fox</b>	<b>Native</b>
<b>Reptiles</b>		
<i>Aspidoscelis tigris</i>	Western whiptail	Native
<i>Crotalus oreganus helleri</i>	Southern Pacific rattlesnake	Native
<i>Plestiodon gilberti</i>	Gilbert's skink	Native
<i>Sceloporus occidentalis</i>	Western fence lizard	Native
<i>Uta stansburiana</i>	Side-blotched lizard	Native
<b>Invertebrates</b>		
<b><i>Danaus plexippus</i></b>	<b>Monarch butterfly</b>	<b>Native</b>

**Sensitive wildlife species shown in bold**



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