

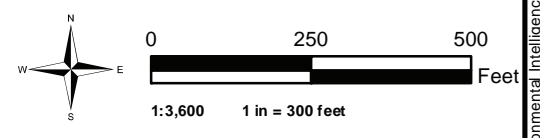


Legend

- Existing Transmission Structures
- Access Road
- ▭ Survey Area

Vegetation/Land Cover

- Joshua tree woodland
- Mojave yucca scrub



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, ©NES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd



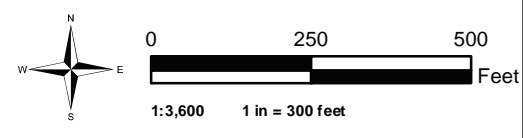


Legend

- Existing Transmission Structures
- Access Road
- ▭ Survey Area

Vegetation/Land Cover

- Mojave yucca scrub



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/Aeromac, IGN, GIP, and the GIS User Community

Environmental Intelligence, Date: 7/12/2017, Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





Legend

- Existing Transmission Structures
- Access Road
- ▭ Survey Area

Vegetation/Land Cover

- Joshua tree woodland

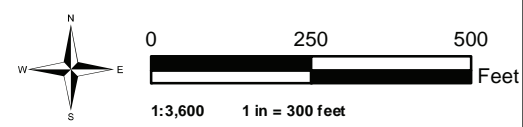
Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroGRID, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





- Legend**
- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Joshua tree woodland



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





Legend

- Existing Transmission Structures
- Access Road
- ▭ Survey Area

Vegetation/Land Cover

- Bladder sage scrub
- Joshua tree woodland

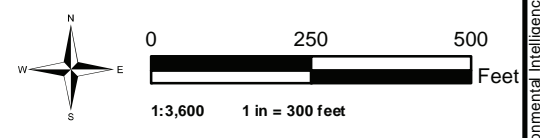
Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





- Legend**
- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Joshua tree woodland



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/Aermap, IGN, IGP, and the GIS User Community

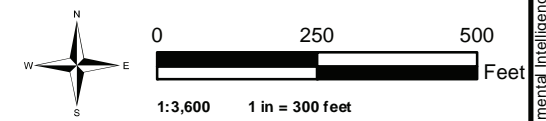
Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





Legend

- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Joshua tree woodland



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





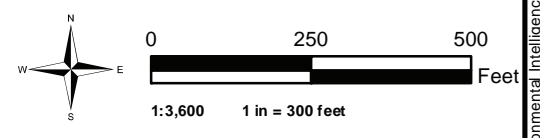
Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, ©NES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroGRID, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





- Legend**
- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Developed
 - Joshua tree woodland



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community

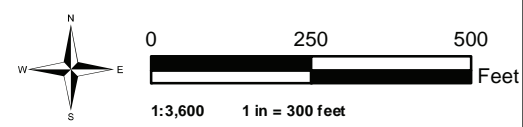


Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





- Legend**
- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Joshua tree woodland



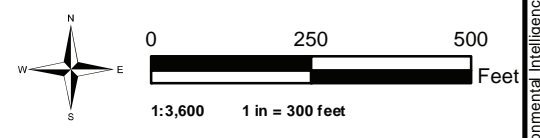
Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community

Environmental Intelligence, Date: 7/12/2017, Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





- Legend**
- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Joshua tree woodland



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, ©NES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community



Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





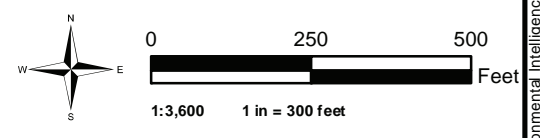
Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroGRID, IGN, IGP, and the GIS User Community

Environmental Intelligence, Date: 7/12/2017, Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





- Legend**
- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Catclaw acacia thorn scrub
 - Creosote bush scrub
 - Joshua tree woodland



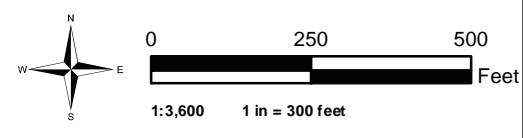
Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community

Environmental Intelligence, Date: 7/12/2017, Q:\SCE\Or-Call\Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017\Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





- Legend**
- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Creosote bush scrub

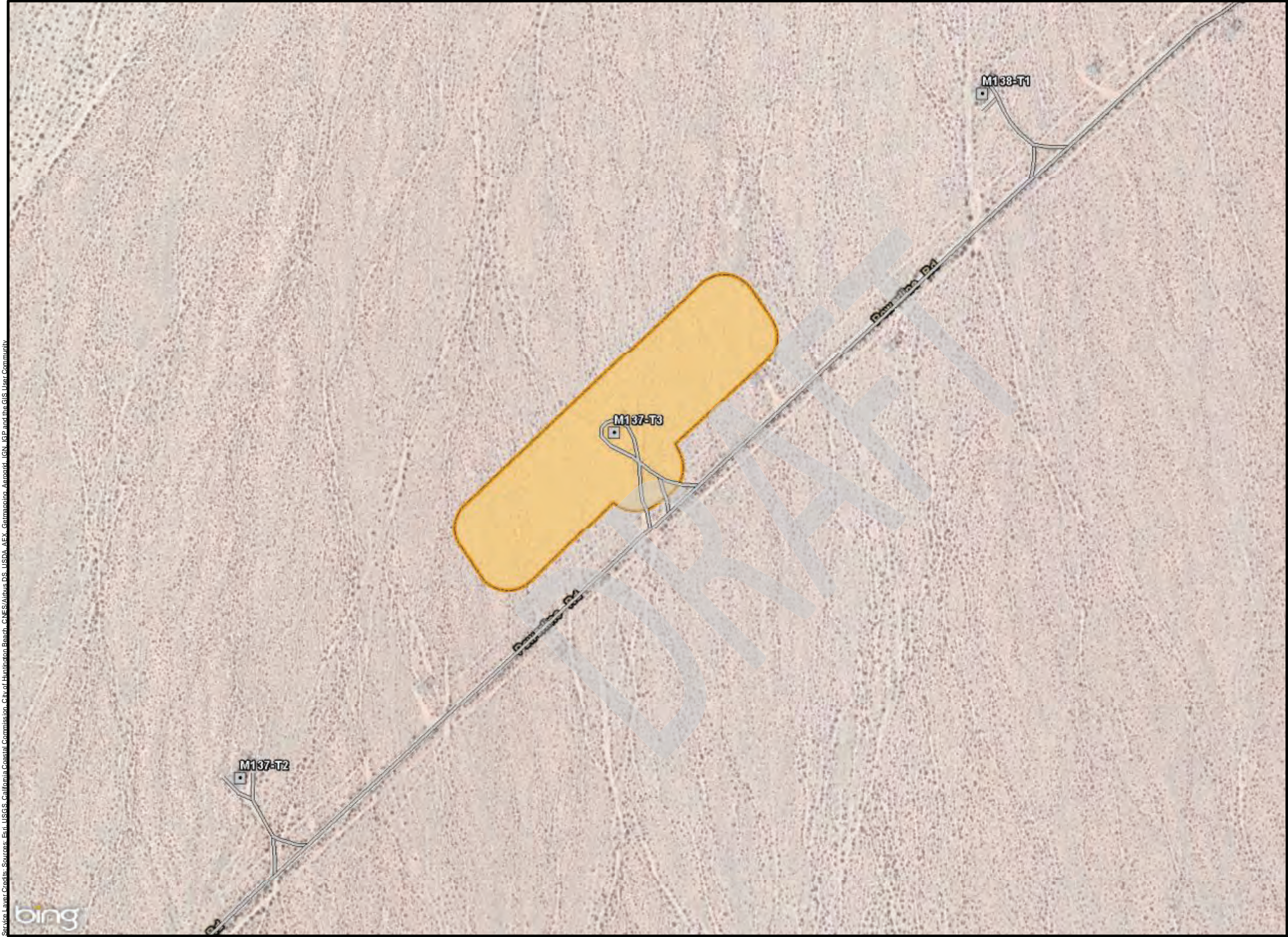


Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community



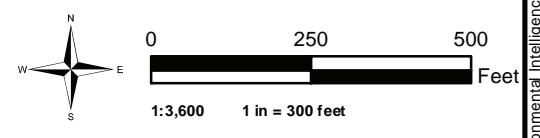
Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





Legend

- Existing Transmission Structures
- Access Road
- ▭ Survey Area
- Vegetation/Land Cover**
- Creosote bush scrub



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, ©NES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community

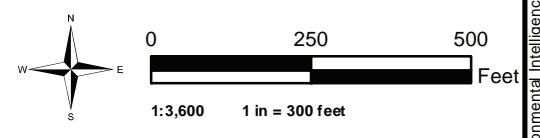


Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_E02_20170621.mxd





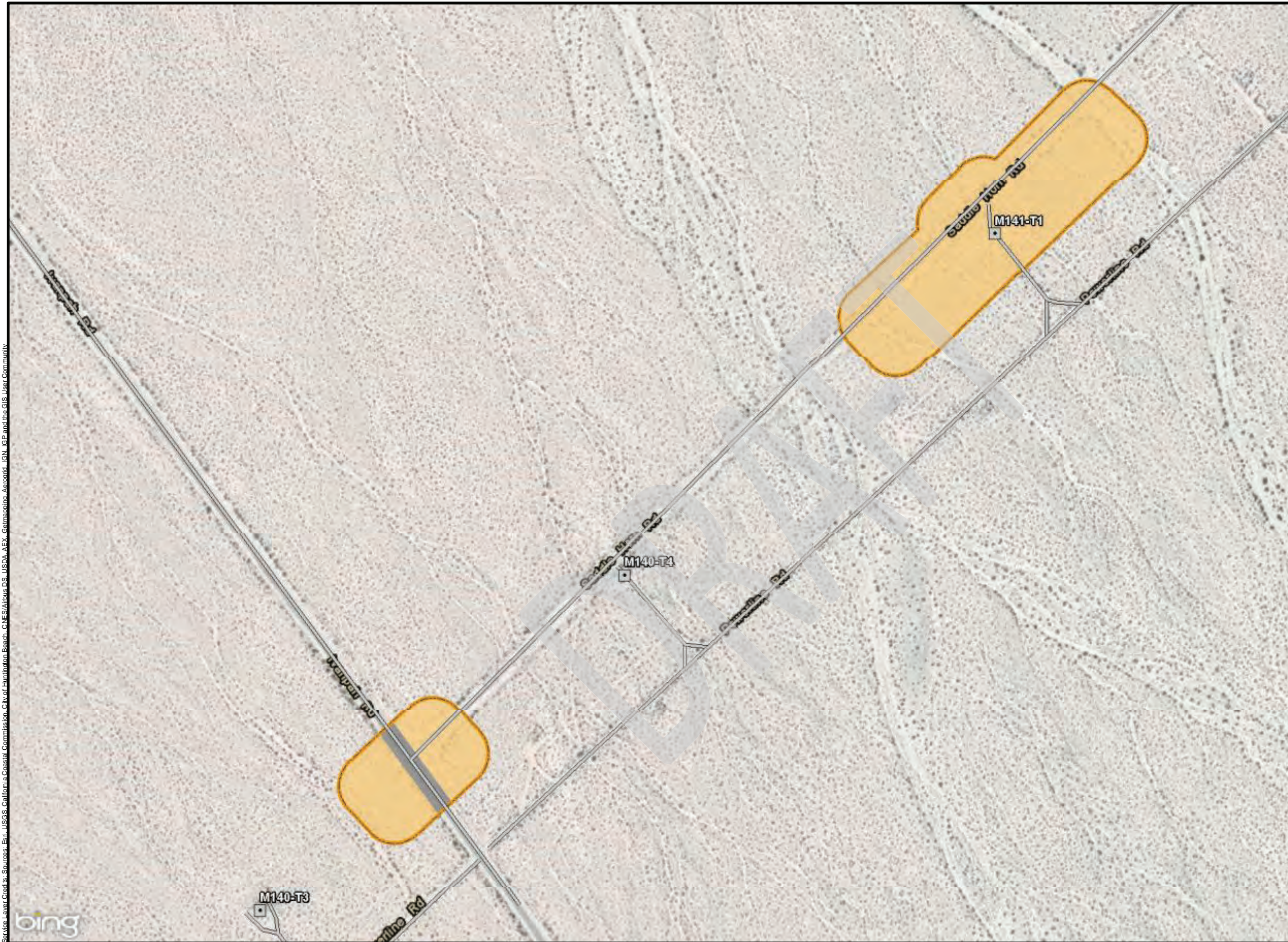
- Legend**
- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Creosote bush scrub



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, ©NES/Airbus DS, USDA, AEX, Garmin, AeroMap, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





Legend

- Existing Transmission Structures
- Access Road
- ▭ Survey Area

Vegetation/Land Cover

- Creosote bush scrub
- Developed

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call\Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017\Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd



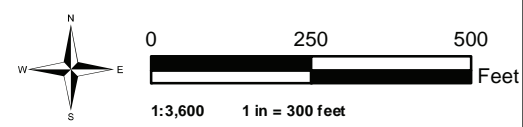


Legend

- Existing Transmission Structures
- Access Road
- ▭ Survey Area

Vegetation/Land Cover

- Creosote bush scrub
- Developed



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community



Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





Legend

- Existing Transmission Structures
- Access Road
- ▭ Survey Area

Vegetation/Land Cover

- Creosote bush scrub

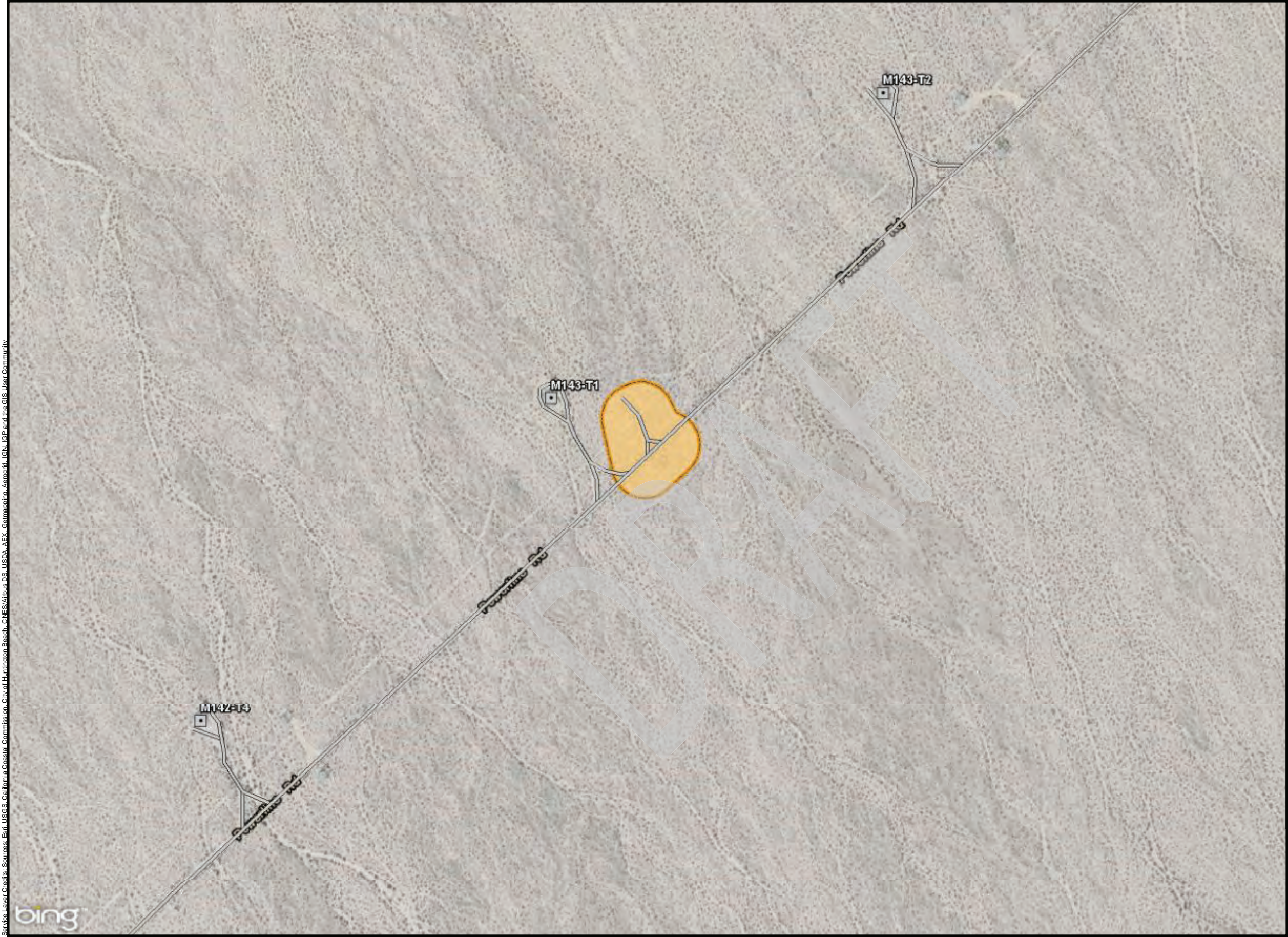
The inset map shows a larger geographic context. It features Interstate 15 (I-15) and Interstate 40 (I-40) running horizontally. A red line indicates the project's path, which runs parallel to I-15 and I-40. The area is labeled 'MOJAVE NATIONAL PRESERVE' and 'DESERT'. Elevation markers for 7522 ft and 7141 ft are also shown.

A north arrow is located in the bottom-left corner of the inset map area. To its right is a scale bar with markings at 0, 250, and 500 feet. Below the scale bar, the text '1:3,600' and '1 in = 300 feet' is displayed.

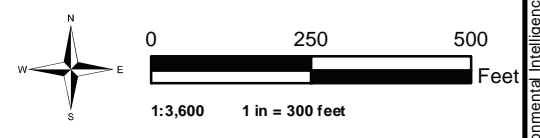
Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroGRID, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





- Legend**
- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Creosote bush scrub

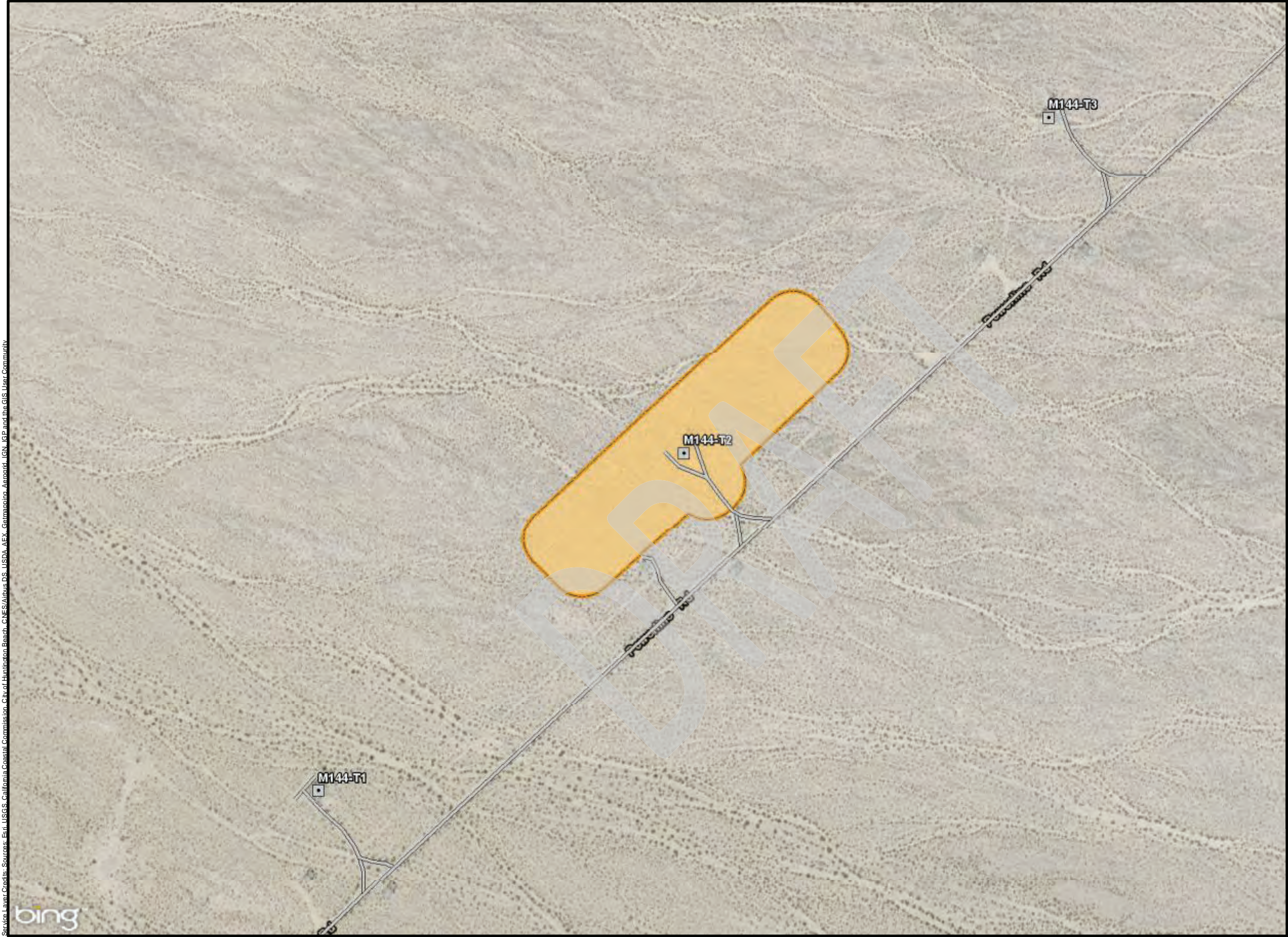


Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community

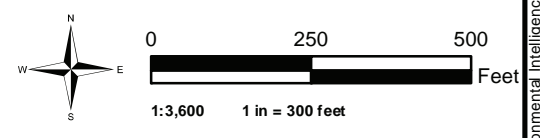


Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





- Legend**
- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Creosote bush scrub

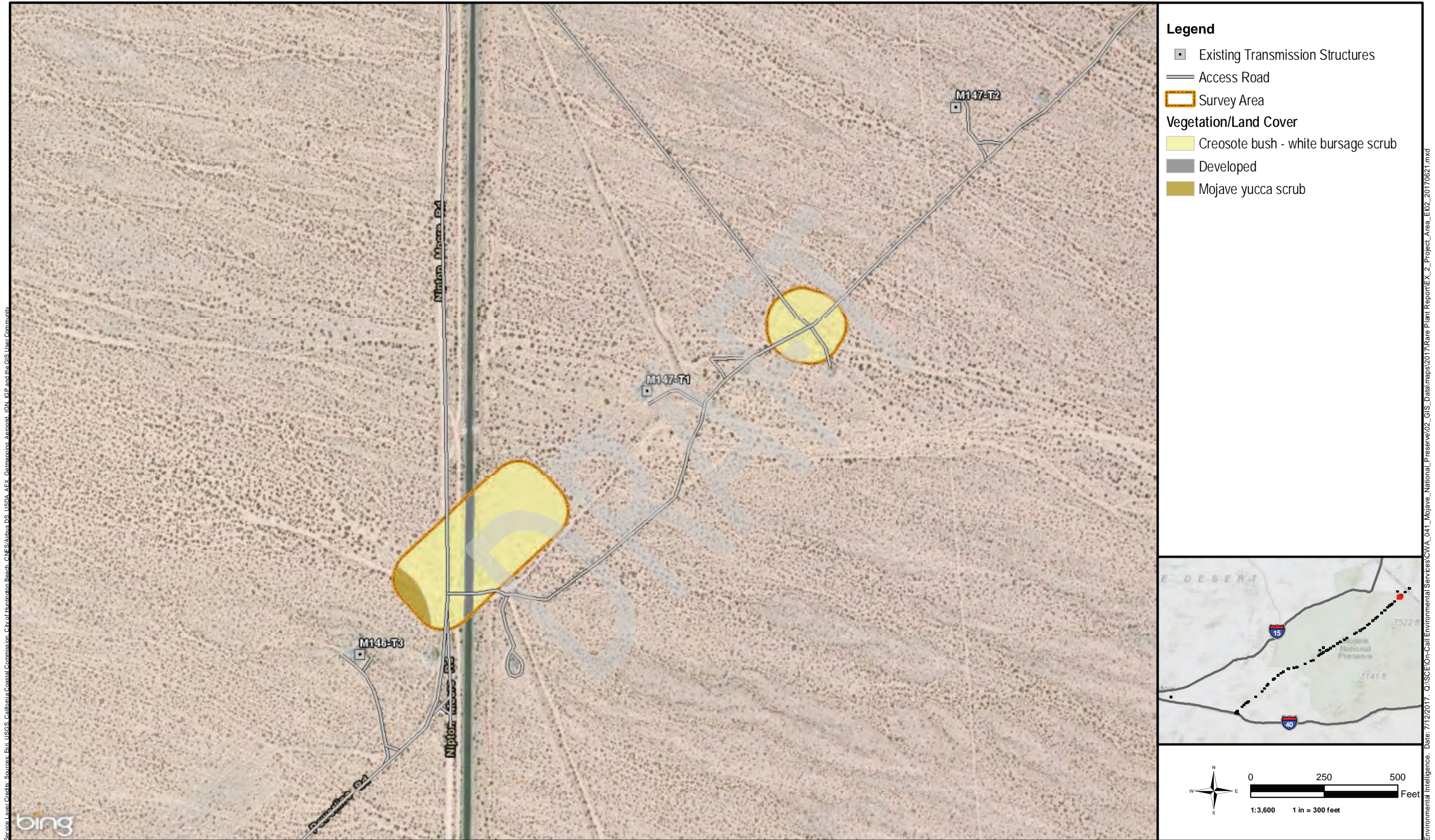


Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, ©NES/Airbus DS, USDA, AEX, Garmin, AeroMap, IGN, IGP, and the GIS User Community



Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





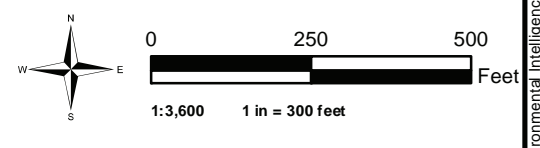
Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroGRID, IGN, IGP, and the GIS User Community

Environmental Intelligence, Date: 7/12/2017, Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





- Legend**
- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Creosote bush - white bursage scrub



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, ©NES/Airbus DS, USDA, AEX, Garmin, Aerotri, IGN, IGP, and the GIS User Community

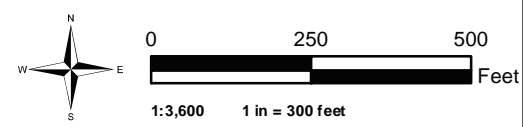


Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





- Legend**
- Existing Transmission Structures
 - Access Road
 - ▭ Survey Area
- Vegetation/Land Cover**
- Creosote bush scrub

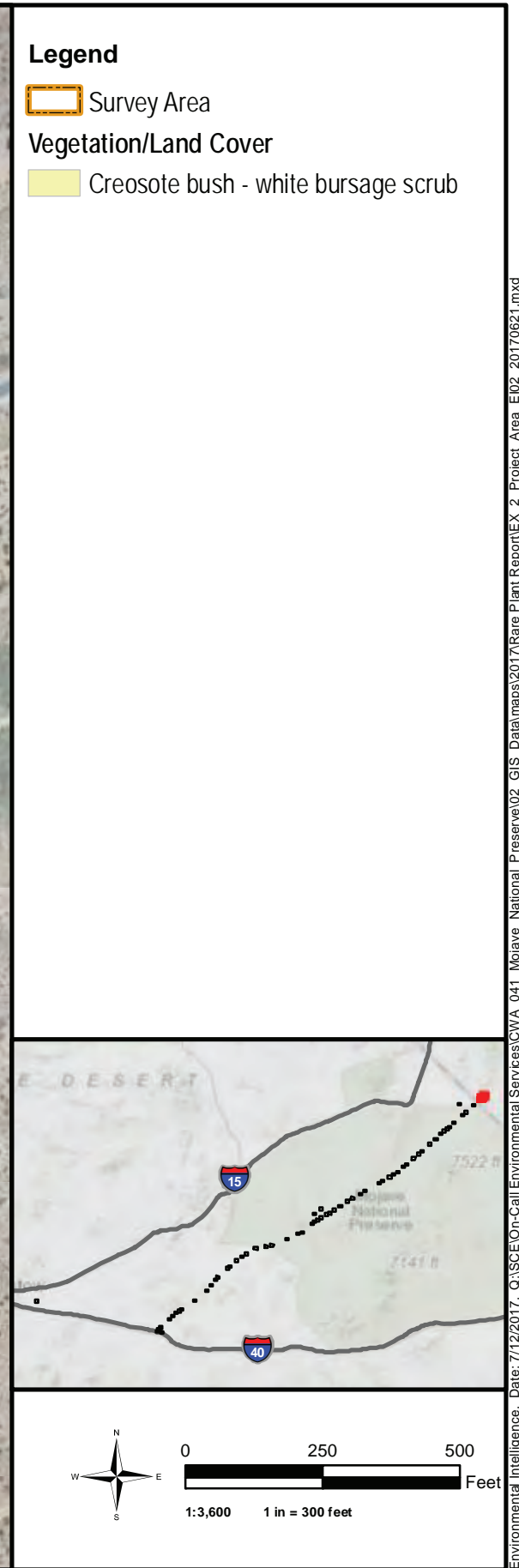


Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroGRID, IGN, IGP, and the GIS User Community



Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd

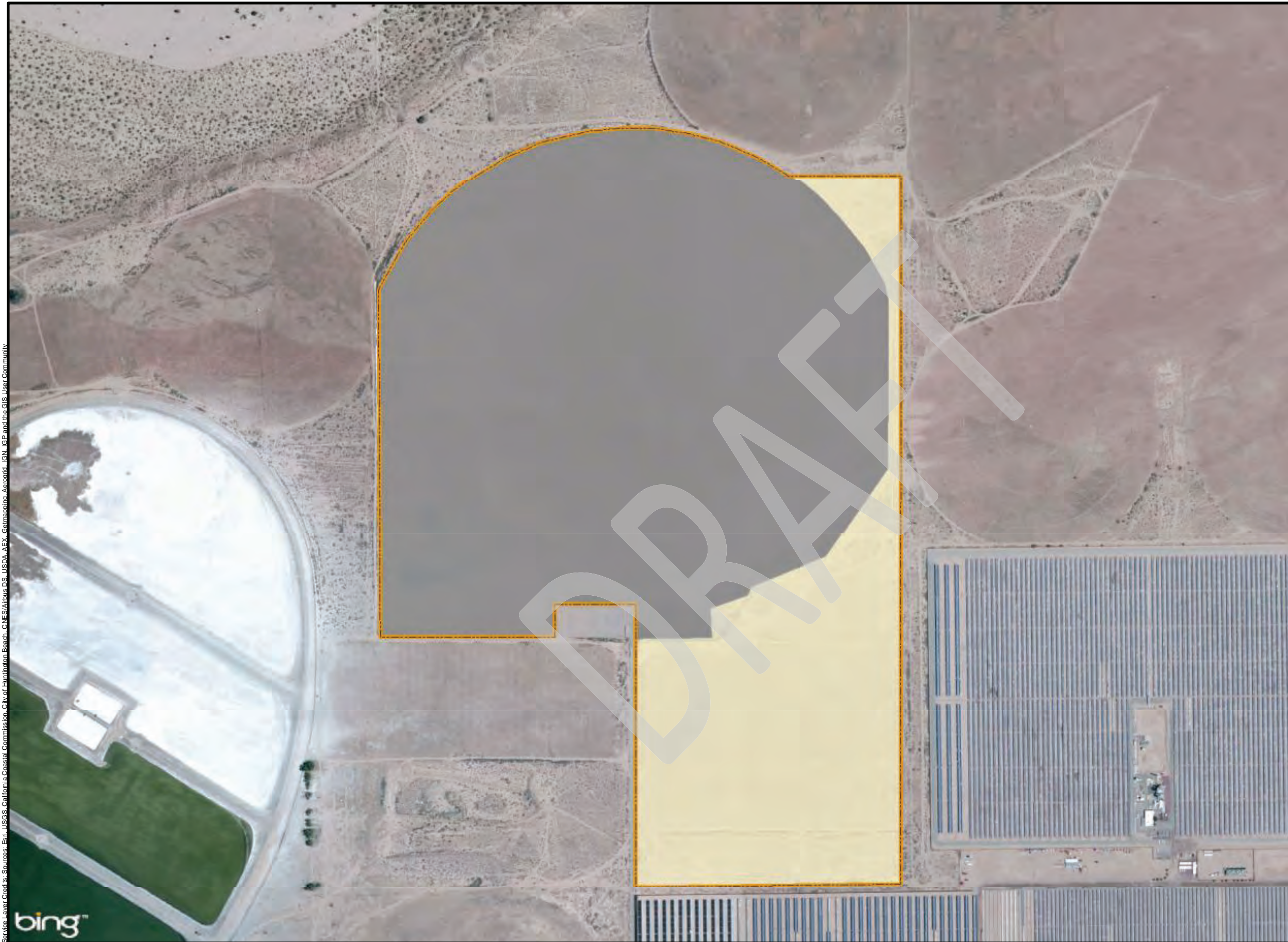







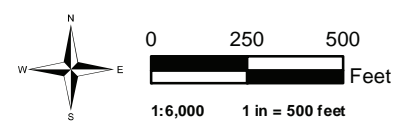
Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/Aeromaps, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





- Legend**
-  Survey Area
 - Vegetation/Land Cover**
 -  Allscale scrub
 -  Developed



Source: Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, ©NES/Airbus DS, USDA, AEX, Garmin, AeroMap, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call\Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd





Legend

- Access Road
- Survey Area

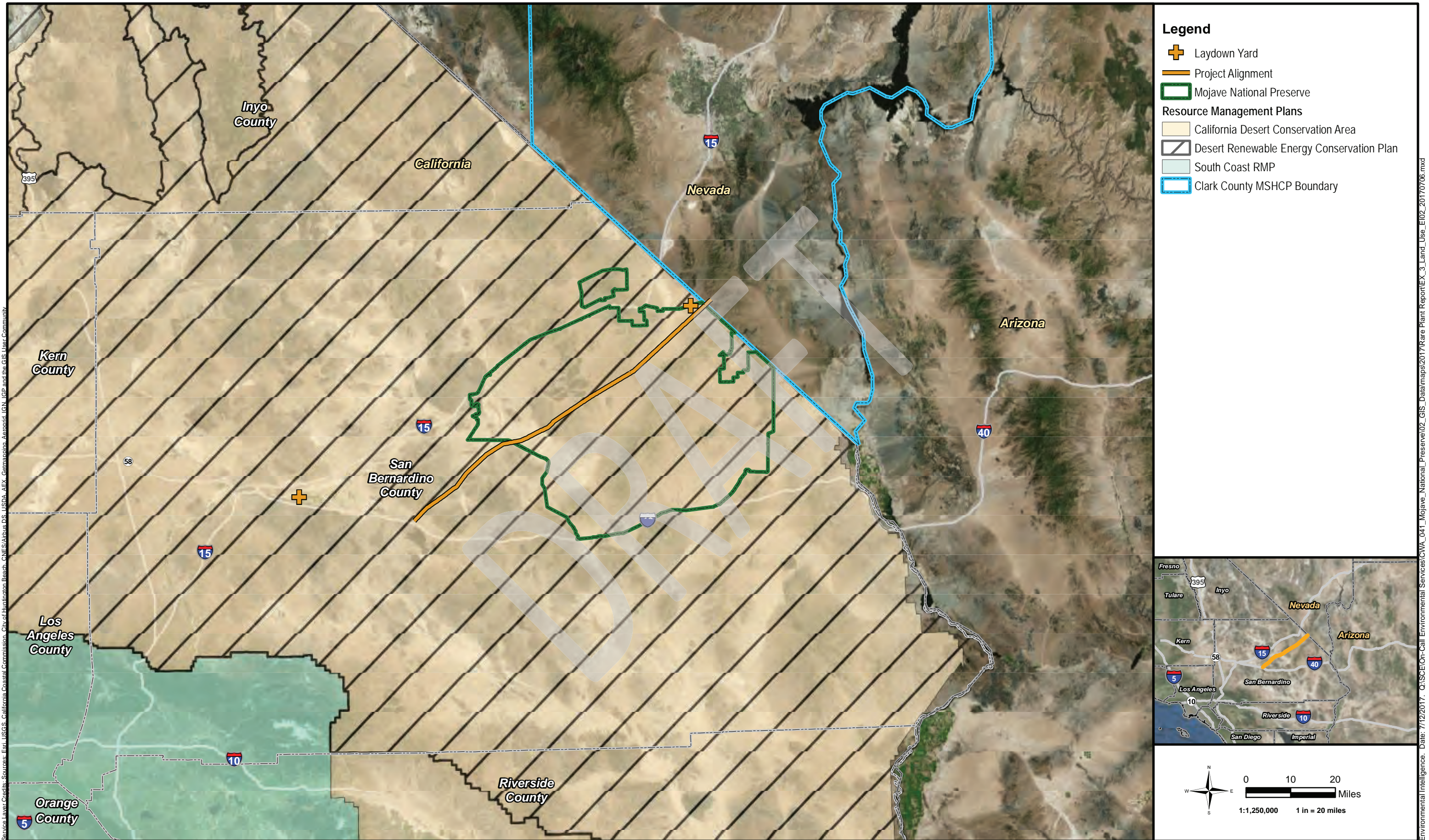
Vegetation/Land Cover

- Developed

Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community

Environmental Intelligence, Date: 7/12/2017, Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_2_Project Area_EI02_20170621.mxd



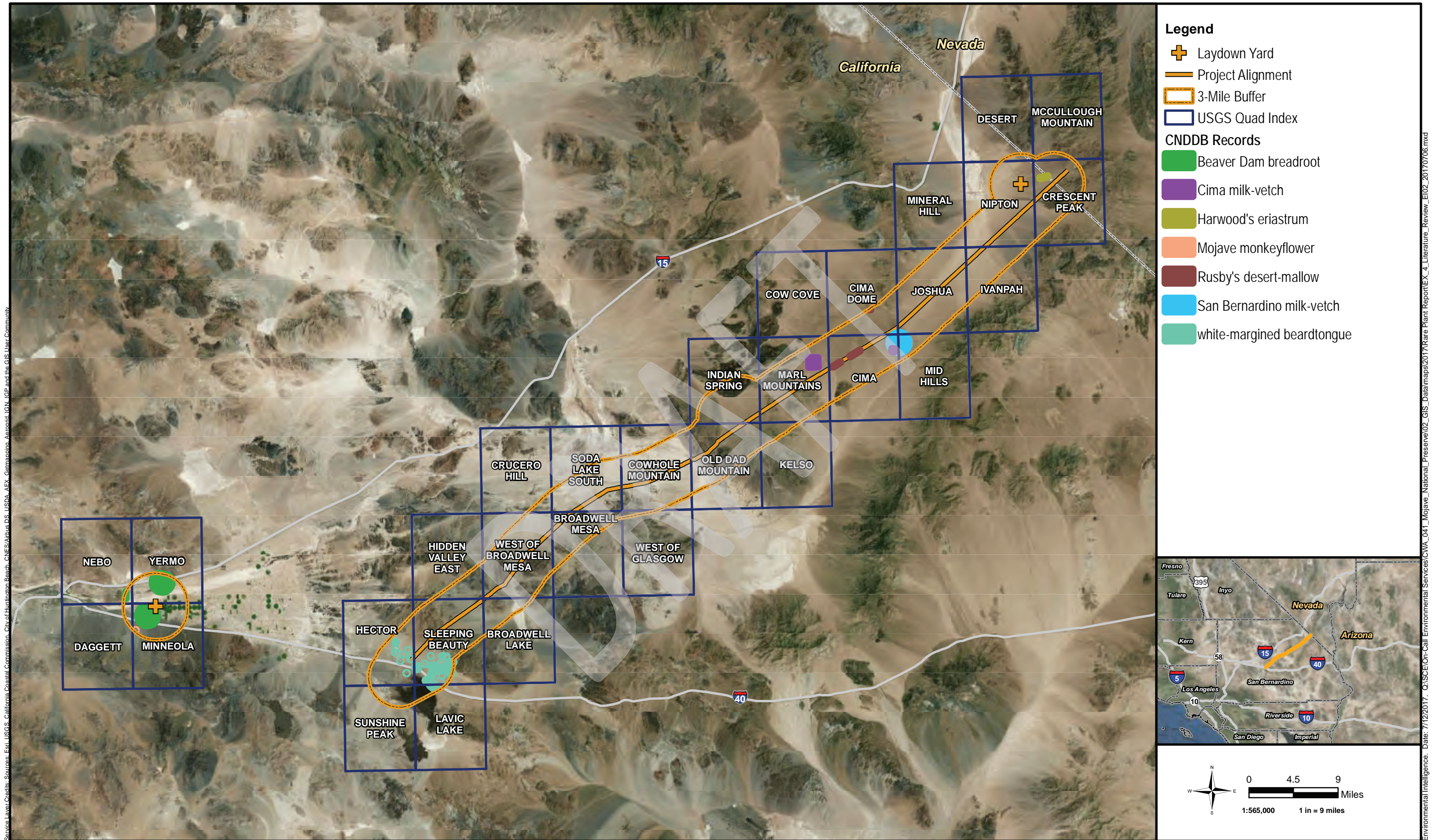


Service Layer Credits: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Geomorpho, Aerialoid, IGN, IGP and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017_Rare Plant Report\EX_3_Land_Use_E102_20170706.mxd



EXHIBIT 3. LAND USE
LVRAS PROJECT | SAN BERNARDINO COUNTY, CA AND CLARK COUNTY, NV



Service Layer Credits: Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, Aerialoid, IGN, iGP and the GIS User Community
 Environmental Intelligence. Date: 7/12/2017. Q:\SCE\On-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017_Rare Plant Report\EX_4_Literature_Review_EI02_20170706.mxd



EXHIBIT 4. LITERATURE REVIEW
LVRAS PROJECT | SAN BERNARDINO COUNTY, CA AND CLARK COUNTY, NV



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community

Environmental Intelligence, Date: 7/12/2017, Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_5_Results_EI01_20170712.mxd

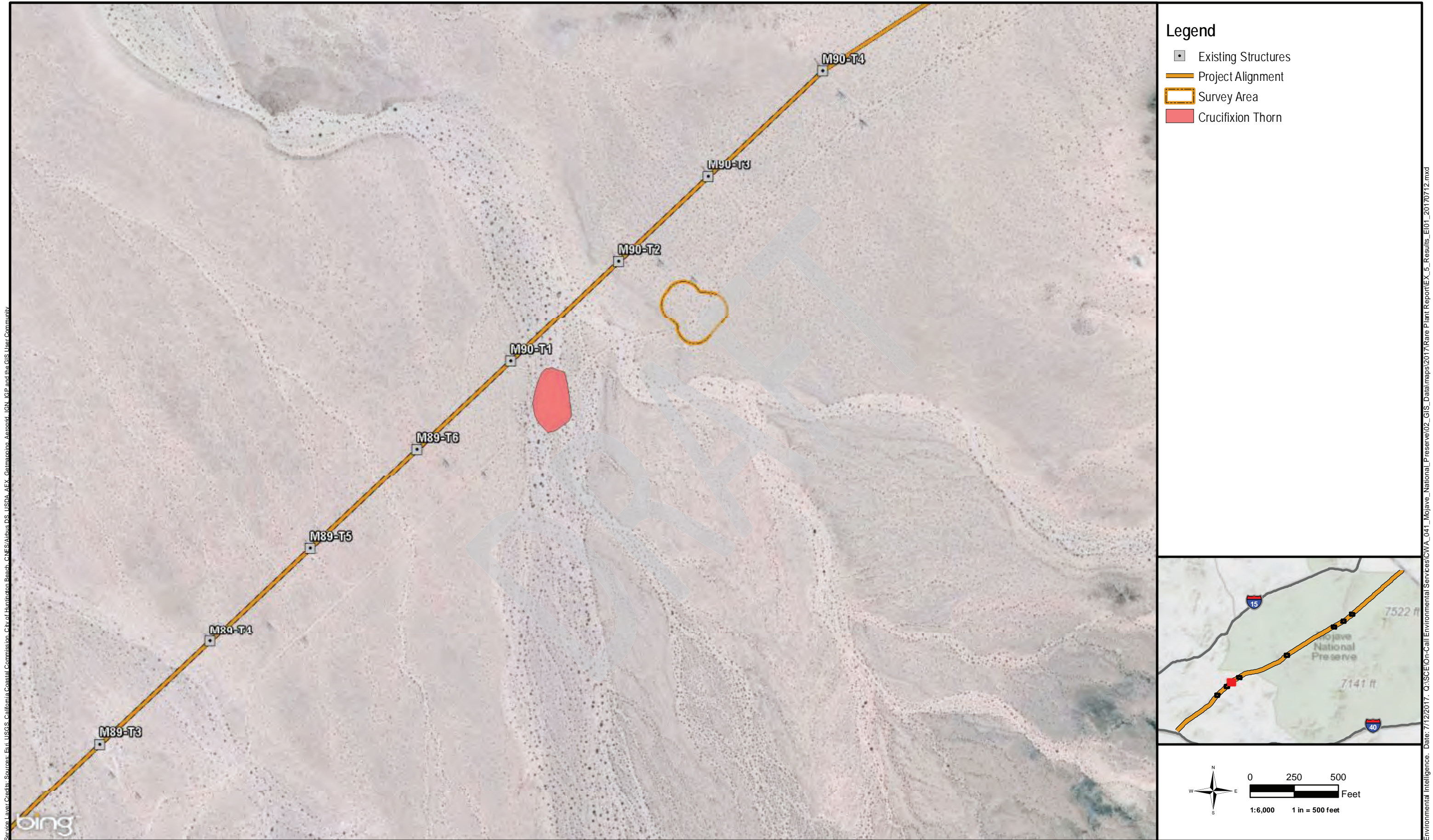




Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, ©NES/Airbus DS, USDA, AEX, Garmin/Aeromaps, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call\Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017\Rare Plant Report\EX_5_Results_EI01_20170712.mxd





Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, ©NES/Airbus DS, USDA, AEX, Garmin, AeroMap, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017\Rare Plant Report\EX_5_Results_EI01_20170712.mxd

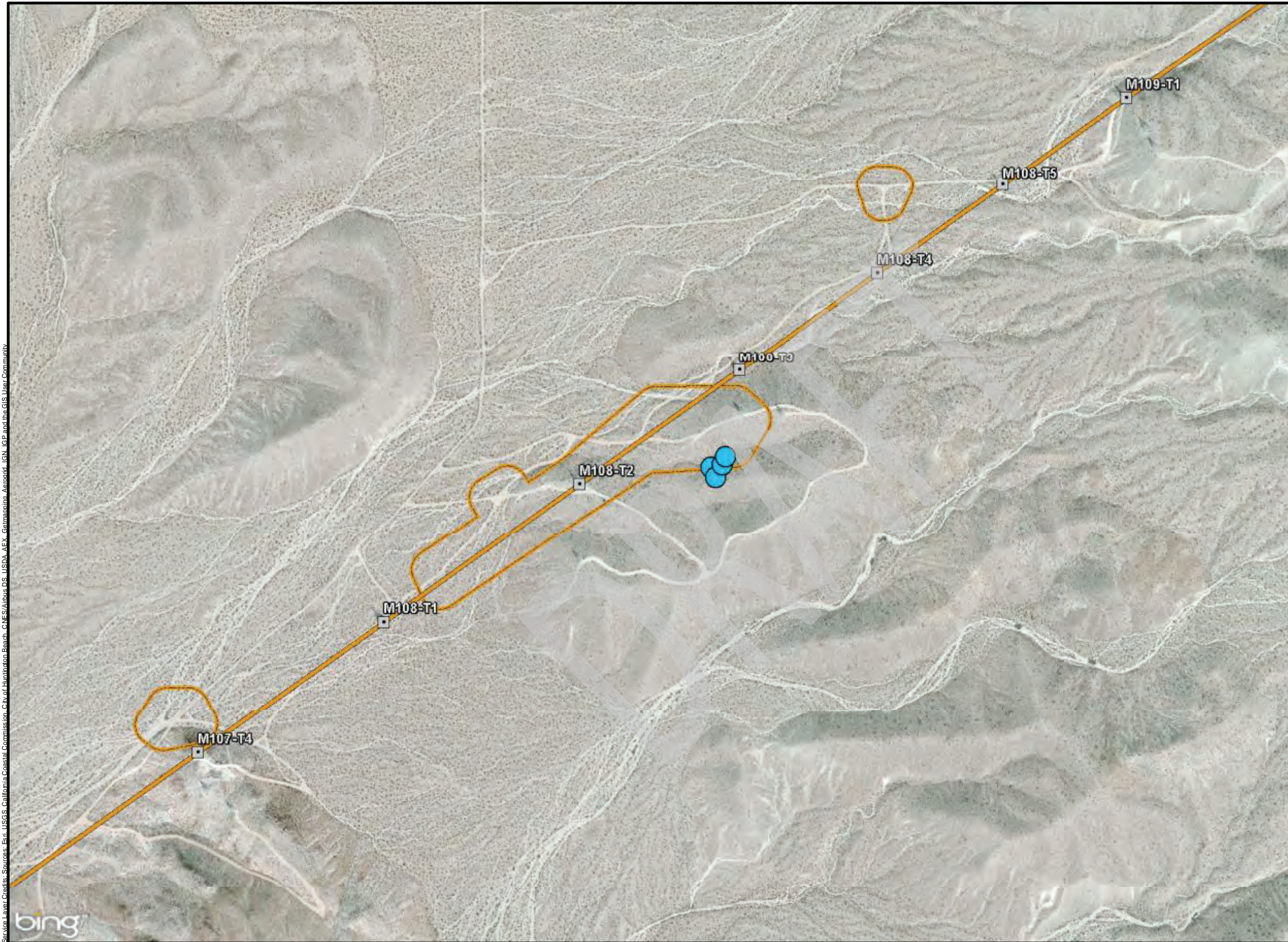




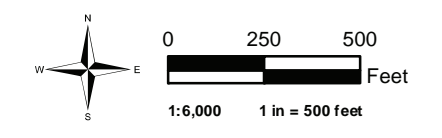
Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/Aermap, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\S6E\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017\Rare Plant Report\EX_5_Results_EI01_20170712.mxd





- Legend**
- Existing Structures
 - Project Alignment
 - ▭ Survey Area
 - Mojave Yucca Clone



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, ©NES/Airbus DS, USDA, AEX, Garmin/Aeromaps, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_5_Results_EI01_20170712.mxd





Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/Aeromaps, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_5_Results_EI01_20170712.mxd





Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, City of Huntington Beach, CNES/Airbus DS, USDA, AEX, Garmin/DeLorme, AeroMap, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\SCE\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_5_Results_EI01_20170712.mxd



EXHIBIT 5. BOTANICAL SURVEY RESULTS (PAGE 7 OF 8)
 LVRAS PROJECT | SAN BERNARDINO COUNTY, CA AND CLARK COUNTY, NV



Service Layer Credits - Sources: Esri, USGS, California Coastal Commission, Civ. of Huntington Beach, ©NES/Airbus DS, USDA, AEX, Garmin/DeLorme, Aerial, IGN, IGP, and the GIS User Community

Environmental Intelligence. Date: 7/12/2017. Q:\S&E\Or-Call Environmental Services\CWA_041_Mojave_National_Preserve\02_GIS_Data\maps\2017Rare Plant Report\EX_5_Results_EI01_20170712.mxd



APPENDIX A:

SPECIAL-STATUS BIOLOGICAL RESOURCES OCCURRING OR POTENTIALLY OCCURRING ON OR
IN THE VICINITY (WITHIN 9 SURROUNDING USGS TOPO QUADS) OF THE LVRAS PROJECT

DRAFT



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
SENSITIVE VEGETATION COMMUNITIES					
<i>Chilopsis linearis</i> (Desert willow woodland) Alliance	-	S3	-	<p>Desert willow is dominant or co-dominant in the tree or tall shrub canopy, with desert ironwood (<i>Olneya tesota</i>), honey mesquite (<i>Prosopis glandulosa</i>), smoke tree (<i>Psoralea argemone</i>) and Joshua tree (<i>Yucca brevifolia</i>). Shrubs may include cheese bush (<i>Ambrosia salsola</i>), cattle saltbush (<i>Atriplex polycarpa</i>), sweetbush (<i>Bebbia juncea</i>), buck horn cholla (<i>Cylindropuntia acanthocarpa</i>), encelia (<i>Encelia virginensis</i>), California jointfir (<i>Ephedra californica</i>), and California buckwheat (<i>Eriogonum fasciculatum</i>). Habitats include washes, intermittent channels, canyon bottoms, arroyos, along floodplains, and wash terraces, where flooding is infrequent. Soils are typically well-drained sands and gravels that are moderately acidic to slightly alkaline. Elevation ranges from 100-1,200m.</p> <p>Occurs. Present in a canyon wash at the base of Old Dad Mountain.</p>	May-Jun



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Pleuraphis rigida</i> (Big galleta shrub-steppe) Alliance	-	S2	-	<p>Big galleta is dominant or co-dominant in the herbaceous and sub-shrub layers with Indian rice grass, black grama (<i>Bouteloua eriopoda</i>), foxtail brome (<i>Bromus madritensis</i> spp. <i>rubens</i>), downy dalea (<i>Dalea mollissima</i>), and matchweed (<i>Gutierrezia sarothrae</i>). Emergent trees and shrubs may be present at low cover, including catclaw, white bursage (<i>Ambrosia dumosa</i>), cheese bush, shadescale (<i>Atriplex canescens</i>), and creosote bush (<i>Larrea tridentata</i>). Habitats include flat ridges, lower bajadas, slopes, dune aprons, and stabilized dunes. Soils are typically clayey, sandy, or rocky. Elevation ranges from 500-1,400m.</p> <p>Occurs. Present on dune aprons near Towers M91-T3, M91-T4, and M101-T5.</p>	Year-round
<i>Psorothamnus spinosus</i> (Smoke tree woodland) Alliance	-	S3	-	<p>Smoke tree is dominant or co-dominant in the tree or tall shrub canopy with desert willow, desert ironwood, and blue palo verde (<i>Parkinsonia florida</i>). Shrubs may include catclaw, cheesebush, Emory's baccharis (<i>Baccharis emoryi</i>), sweetbush, brittlebush, California jointfir, desert lavender (<i>Hyptis emoryi</i>), creosote bush, and Parish's wire lettuce (<i>Stephanomeria pauciflora</i>). Habitats include arroyos, intermittently flooded channels and washes. Soils are typically sandy and well drained, moderately acidic or slightly saline. Elevation ranges from sea level-1,000m.</p> <p>Occurs. Present within wash near Tower M88-T2. Associated with Crucifixion thorn (<i>Castela emoryi</i>).</p>	Jun-Jul



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Yucca brevifolia</i> (Joshua tree woodland) Alliance	-	S3	-	<p>Dominant plant species in this alluvial vegetation community include white bursage, cheese bush, big sagebush (<i>Artemisia tridentata</i>), yellow rabbitbush (<i>Chrysothamnus viscidiflorus</i>), blackbrush (<i>Coleogyne ramosissima</i>), buck-horn cholla (<i>Cylindropuntia acanthocarpa</i>), Nevada ephedra, and California Buckwheat. The canopy may be open to intermittent, and the herbaceous layer is open to intermittent with perennial grasses and seasonal annuals. Stands occur on alluvial fans and ridges with gentle to moderate slopes. Soils are often coarse sands, very fine silts, gravel, or sandy loams. Elevation ranges from 750-1,800m.</p> <p>Occurs. Present on alluvial fans and moderate slopes at 27 discrete locations between Towers M110 through M134.</p>	May-Jun
PLANTS					
<i>Aloysia wrightii</i> Wright's beebrush	-	-	4.3	<p>A perennial evergreen shrub that occurs in rocky, often carbonate, areas of Joshua tree woodland and pinyon and juniper woodland. 900-1,600m.</p> <p>Unlikely. On-site suitable habitat includes Joshua tree woodlands from Tower M109-T4 to M134-T4. Collected on the alignment in 2010 (André 14918) just south of Nipton Rd and approximately 1,400 feet from the nearest Project survey area. Likely to occur along the alignment near the California/Nevada border, but unlikely to occur within the Project survey area due to closest record being 1,400 feet away.</p>	Apr-Oct



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Androstephium breviflorum</i> Small-Flowered Androstephium	-	-	2B.2	<p>Occurs in the vicinity of Pisgah Crater, Cronese Valley, Rice Valley, and at scattered sites along the California/Nevada border. A perennial herb found in desert dunes and creosote bush scrub, with sandy to rocky soil. 100-1,600m.</p> <p>Absent. Several recent collections were made from within 100 feet of the southern Project survey area, near Pisgah Substation, and northeastward along Powerline Rd. towards the Cady Mountains. Collected in 2008 at Dunn, 2 miles southwest of the proposed material yard along Highway 15 on Afton Rd. (Honer 2813). Plant observed at reference site but absent within Project survey area during 2017 botanical surveys.</p>	Mar-Apr
<i>Astragalus bernardinus</i> San Bernardino Milk-Vetch	-	-	1B.2	<p>Occurs on the desert slope of the San Bernardino Mountains, the Little San Bernardino Mountains, and in the eastern Mojave National Preserve, especially in the vicinity of Cima. A perennial herb found in stony areas among desert shrubs in Joshua tree and pinyon-juniper woodlands. 900-2,300.</p> <p>Does not occur. Suitable habitat occurs outside project alignment in the hills south of Cima. No recent collections in the area and exact location of historical records are unknown.</p>	Apr-Jun



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Astragalus cimae</i> var. <i>cimae</i> Cima Milk-Vetch	-	-	1B.2	<p>Occurs in Mid Hills and the New York Mountains in the eastern Mojave National Preserve. Perennial herb in Great Basin scrub, Joshua tree woodland, and pinyon-juniper woodlands. 1,250-1,850m.</p> <p>Does not occur. Species restricted to higher elevations and habitat not found along project alignment. The type locality, given as “Cima,” is likely an imprecise attribution. The species is probably absent from Joshua tree woodland within the project boundaries near Cima, as numerous records suggest the species is locally restricted to the desert mountain ranges south of the Project boundary.</p>	Apr-May
<i>Astragalus lentiginosus</i> var. <i>borreganus</i> Borrego milk-vetch	-	-	4.3	<p>An annual herb that occurs in sandy areas of Mojavean and Sonoran desert scrub. 30-895m.</p> <p>Unlikely. Suitable habitat in Devil's Playground in vicinity of Old Dad Mountain; Cima Dome. Recorded by CCH over 25 years ago and 1.9 miles from Project survey area and east of Pisgah Rd. (Wolf 8542).</p>	Feb-May
<i>Berberis fremontii</i> Fremont Barberry	-	-	2B.3	<p>Occurs in the New York Mountains, Mid Hills, and Granite Mountains, and the desert slope of the San Bernardino Mountains. A perennial evergreen shrub found in rocky and sometimes granitic habitats in chaparral, pinyon-juniper woodlands, and Joshua tree woodlands. 900-1,850m.</p> <p>Does not occur. Suitable habitat not present.</p>	Apr-Jun



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Bouteloua trifida</i> Three-Awned Grama	-	-	2B.3	Occurs in mountain ranges of the eastern Mojave Desert. A perennial grass found in dry, rocky areas, on calcareous soils. 200-1,600m. Does not occur. Suitable habitat not present.	May-Sep
<i>Castela emoryi</i> Emory's Crucifixion-Thorn	-	-	2B.2	Occurs throughout much of the Mojave Desert, although apparently not documented within the Mojave National Preserve. A perennial deciduous shrub found in dry, gravelly washes, low-grade alluvial slopes, and on playas in Mojavean and Sonoran creosote bush scrub. 30-1350m. Occurs. Species observed during 2017 botanical surveys on low-grade alluvial slopes within Project survey area at 5 discrete locations along the southwestern portion of the Project alignment. Associated with creosote bush scrub.	Jun-Jul
<i>Chamaesyce parryi</i> Parry's Spurge	-	-	2B.3	An annual herb that occurs in sandy areas of desert dunes and Mojavean desert scrub. 395-730m. Unlikely. Suitable habitat was found on-site at locations with desert scrub. Collected in Devil's Playground (La Cass 186) in 1980, 2 miles SE of alignment. Unlikely to occur based on age and distance of record.	May-Nov



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Cryptantha costata</i> Ribbed Cryptantha	-	-	4.3	An annual herb found in sandy habitats in desert dunes, Mojavean desert scrub, and Sonoran desert scrub. 60-500m. Unlikely. Collected on sandy alkali east of Crucero, about 2 miles northwest of the project boundary, in 2011 (André and Fulton 16304). Similar habitat associated with Kelso Wash occurs along the alignment just north of the railroad tracks. Unlikely to occur based on distance of records.	Feb-May
<i>Cryptantha holoptera</i> Winged Cryptantha	-	-	4.3	Occurs widely in within the Desert Floristic Province of California. An annual herb found in Mojavean desert scrub and Sonoran desert scrub. 100-1,690m. Unlikely. Collected in the vicinity of Old Dad Mountain 2.2 miles from the Project boundary in 1993 and 1980. Several recent collections near Baker. Habitat in the region is virtually unchanged. The species is doubtless under-collected, widely distributed, and has some potential to occur throughout the Project. Unlikely to occur based on distance of records.	Mar-Apr



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Cymopterus multinervatus</i> Purple-Nerve Cymopterus	-	-	2B.2	<p>Occurs in mountain ranges of Eastern Mojave Desert, and on the desert slope of the San Bernardino Mountains. A perennial herb found on rocky, gravelly and sandy slopes in Joshua tree woodland and pinyon-juniper woodland. 630-1,800m.</p> <p>Occurs. Species observed during 2017 botanical surveys on sandy-decomposed limestone soil within Project survey area near Tower M124-T3. Associated with Joshua tree and creosote bush habitat.</p>	Mar-Apr
<i>Cynanchum utahense</i> Utah Vine Milkweed	-	-	4.2	<p>A perennial herb found in sandy or gravelly habitats of Mojavean desert scrub and Sonoran desert scrub. 100-1,435m.</p> <p>Absent. Recent collections have been made within Project alignment and within 300-600 feet of the Project boundaries in the vicinity of Pisgah, the Cady Mountains, and in Ivanpah Valley. Plant observed at reference site but absent within Project survey area during 2017 botanical surveys.</p>	Mar-Oct



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Eremothera boothii</i> ssp. <i>boothii</i> Booth's Evening-Primrose	-	-	2B.3	<p>Occurrences scattered throughout the Mojave Desert. An annual herb found on sandy flats, steep loose slopes, and low volcanic slopes in Joshua tree and pinyon-juniper woodlands. 900-2,400m.</p> <p>Does not occur. Collected recently several times in the Cima Cinder Cone Lava Beds less than 4 miles northwest of the project boundary. Volcanic soils are located south of and outside the project areas within the Marl Mountains.</p>	Jun-Aug
<i>Eriastrum harwoodii</i> Harwood's Eriastrum	-	-	1B.2	<p>Occurs widely in the Eastern Mojave Desert. An annual found on sandy desert dunes and in creosote bush scrub. <1,000m.</p> <p>Unlikely. Collected at Crucero Hill about 4 miles northwest of the Project boundary in 2008 (Gowen 813). Annual Eriastrum indeterminable to species were encountered throughout the Project during recent surveys.</p>	Mar-Jun
<i>Erioneuron pilosum</i> Hairy Erioneuron	-	-	2B.3	<p>Occurs in the desert mountain ranges of the Eastern Mojave. A perennial grass found on rocky and sometimes carbonate slopes and ridges in pinyon-juniper woodlands. 1,280-2,000m.</p> <p>Does not occur. Suitable habitat not present. Recorded only from desert mountain ranges of the Eastern Mojave.</p>	May-Jun



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Grusonia parishii</i> Matted Cholla	-	-	2B.2	Occurs in the Hackberry, Clark, Castle, Little San Bernardino and Ivanpah Mountains, Landfair Valley and Joshua Tree National Park. A perennial stem succulent found on sandy, gravelly flats, generally in creosote bush/bur scrub and Joshua tree woodlands. 300-1,200m. Occurs. Observed along the alignment during surveys, about 3.6 miles southwest of Cima Rd.	May-Jun
<i>Menodora scabra</i> var. <i>scabra</i> Rough Menodora	-	-	2B.3	Occurs in the Castle, Mid Hills, and New York Mountain Ranges, and on Cerro Pinon. Found in rocky or sandy soils in Joshua tree woodland, Mojavean desert scrub and pinyon-juniper woodlands. 1,000-1,800m. Does not occur. Based on known distributions, material of <i>Menodora scabra</i> within the Project boundaries would be expected to be attributable to var. <i>glabrescens</i> .	May-Jun
<i>Mentzelia puberula</i> Darlington's Blazing Star	-	-	2B.2	Widely distributed in the Eastern Mojave Desert. A perennial herb found in sandy crevices of cliffs or on rocky slopes in Mojavean and Sonoran desert scrub. 90-1,280m. Unlikely. One historic (1980) collection from Old Dad Mountain. Suitable habitat observed in Jackass Canyon near Old Dad Mountain during surveys. Fruiting specimens of <i>Mentzelia</i> attributable to the same species group (otherwise indeterminable) were observed along the alignment just south of Jackass Canyon.	Mar-May

Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Mirabilis coccinea</i> Red Four O'clock	-	-	2B.3	<p>Distributed throughout Fourth of July Canyon, Keystone Canyon and Bathtub Spring in New York Mountains. Occurs also in Castle Peak, Mid Hills, and Ivanpah Mountain Ranges. A perennial herb found on dry, rocky slopes and in washes in Joshua tree woodland and pinyon-juniper woodland. 1,300-1,800m.</p> <p>Does not occur. Typically observed in mountainous Joshua tree woodland The project is located too distant from the Ivanpah/New York Mountains where habitat is present.</p>	May-Jul
<i>Muilla coronata</i> Crowned Muilla	-	-	4.2	<p>Widespread in the Mojave Desert. A perennial bulbiferous herb found in chenopod scrub, Joshua tree woodland, Mojavean desert scrub, and pinyon-juniper woodland. 670-1,960m.</p> <p>Unlikely. Appropriate habitat is intermittent throughout within the Project. Collected along highway 15 at Dunn, two miles southeast of the proposed material yard on Afton Rd.</p>	Mar-May



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Munroa squarrosa</i> False Buffalo-Grass	-	-	2B.2	<p>Occurs on toe slopes of desert ranges in the Eastern Mojave Desert. An annual grass found on open, silty or gravelly flats, and sandy, gravelly or rocky areas in Joshua tree woodland, and sometimes in pinyon-juniper woodland. 1,300-1,700m.</p> <p>Does not occur. Suitable habitat may occur near Cima and near the California/Nevada border. However, the nearest collection is from seven miles north of the Project boundary in the Ivanpah Mountains.</p>	Oct
<i>Nemacaulis denudata</i> var. <i>gracilis</i> Slender Cottonheads	-	-	2B.2	<p>Occurs in coastal Southern California, Colorado Desert, and at scattered sites in the Eastern Mojave Desert. An annual herb in sandy habitats, including dunes and coastal strand. 10-500m.</p> <p>Does not occur. Suitable habitat occurs in the Devil's Playground, but the nearest known occurrence is at Kelso, about 15 miles southeast of the project.</p>	Apr-May



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Opuntia curvispina</i> Curved-Spine Beavertail	-	-	2B.2	<p>Occurs near the California/Nevada state line between Nipton, CA and Searchlight, NV. Reported for the vicinity of Cima in Mojave National Preserve. A perennial stem succulent found in chaparral, Mojavean desert scrub and pinyon-juniper woodlands. 1,000-1,400m. Species is a taxonomically recognized tetraploid hybrid resulting from <i>Opuntia chlorotica</i> and <i>Opuntia phaeacantha</i>.</p> <p>Does not occur. Presumably known in California from only historic collections.</p>	Apr-Jun
<i>Pediomelum castoreum</i> Beaver dam breadroot	-	-	1B.2	<p>A perennial herb that occurs in creosote bush scrub and Joshua tree woodland communities. 600 – 950 meters.</p> <p>Unlikely. Species preferred habitat is found on-site in creosote bush communities. CNDDDB record (1943) 1000 feet from Pisgah laydown yard. Unlikely to occur due to distance and age of historic records.</p>	Apr-May
<i>Pellaea truncata</i> Spiny Cliff-Brake	-	-	2B.3	<p>Occurs in the New York Mountains, Mid Hills Range and the Providence Mountains. A rhizomatous perennial occurring in crevices of granite or igneous rock in pinyon-juniper woodlands. 1,200-1,900m.</p> <p>Does not occur. Suitable habitat not present.</p>	Apr-Jun

Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Penstemon albomarginatus</i> White-Margined Beardtongue	-	-	1B.1	<p>Distributed mainly throughout the Lavic Lake volcanic field, Cady, Sleeping Beauty and Bullion Mountain Ranges. A perennial herb found in loose desert sand, generally on stabilized dunes with creosote bush scrub. 700-900m.</p> <p>Likely. Collected by CNDDDB (2005 and 2010) within 500 feet of the Project survey area, on the south end of the alignment, near I-40 and Pisgah. However, the species was not detected during reference site visit to this record. While surveys were conducted during the appropriate blooming season, the lack of observations at the reference population suggests that there is a possibility that the species may be present on-site but not be detectable.</p>	Mar-May
<i>Penstemon pseudospectabilis</i> var. <i>pseudospectabilis</i> Desert Beardtongue	-	-	2B.2	<p>Occurs at scattered localities in the Eastern Mojave Desert. A perennial herb often found in sandy washes, and sometimes rocky areas in Mojavean and Sonoran desert scrub. 80-1,935m.</p> <p>Unlikely. Collected in the 1998 and in 1980 in the vicinity of Old Dad Mountain, where suitable habitat still exists in the vicinity of Jackass Canyon.</p>	Jan-May



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Phacelia coerulea</i> Sky-Blue Phacelia	-	-	2B.3	Occurs in mountain ranges of the Eastern Mojave Desert, and some adjacent valley. An annual herb found in open, sandy or rocky areas, generally in creosote bush scrub, sometimes also pinyon-juniper woodlands. 1,400-2,000m. Unlikely. Collected in creosote bush scrub one mile northwest of the project boundary along Nipton Rd. (André 10231).	Apr-May
<i>Portulaca halimoides</i> Desert portulaca	-	-	4.2	Occurs in the Eastern Mojave Desert. An annual herb found in sandy habitats within Joshua tree woodland. 1,000-1,200m. Unlikely. Collected in 2011 along the alignment and 1,000 feet from Project survey area in creosote bush scrub, one mile west of Ivanpah Rd. (André 22338). Suitable habitat is extensive in the eastern portion of the project. Likely to occur along alignment, but unlikely to occur within Project survey area based on distance of record.	Sep
<i>Sibara deserti</i> Desert Winged-Rockcress	-	-	4.3	An annual herb found in Mojavean desert scrub. 345-1,300m. Unlikely. Collected within the wash adjacent to the proposed staging area on the north side of Rocky Ridge in 1993 (Hrusa 10662). Collected on a rocky canyon wall at Sheep Spring in the Marl Mountains in 1966, 0.4 miles south of the alignment (Hitchcock 24346).	Mar-Apr



Species Name Potential Sites (based on range)	Status ¹			Distribution, Habitat, and Occurrence Potential ²	Activity / Bloom Period
	Federal	State	CNPS		
<i>Sphaeralcea rusbyi</i> var. <i>eremicola</i> Rusby's Desert-Mallow	-	-	1B.2	<p>Occurs in Panamint, Clark, Ivanpah and Providence Mountain Ranges, Cima Dome in Mojave National Preserve, Lost Horse Valley in Joshua Tree National Park, and Mineral Hills near I-15. A perennial herb found in creosote bush scrub and Joshua tree woodlands. 1,000-1,500m.</p> <p>Absent. Collected along the alignment at two locations south of Wildcat Butte and Cima Dome in 1998 (Sanders 21967 and 21963). CNDDDB records (1998) occurs within Project survey area along Powerline Road access route. This taxon is sometimes associated with roadside disturbances. Plant observed at reference site but absent within Project survey area during 2017 botanical surveys.</p>	Mar-Jun
<i>Wislizenia refracta</i> ssp. <i>refracta</i> Jackass-Clover	-	-	2B.2	<p>Occurs between Barstow and Baker, Cima Cinder Cones, Joshua Tree National Park, and throughout the Twentynine Palms region. An annual herb found in sandy washes, along roadsides on alkaline flats, on dunes, and in creosote bush scrub. Occasionally found in wetlands. 90-1,160m.</p> <p>Unlikely. Nearest recent collection is from just southwest of Midway on the north side of Hwy 15, about six miles southeast of the proposed staging yard on Afton Rd. Suitable habitat is present throughout the Project area.</p>	Apr-Nov



LEGEND:

Federal (USFWS)

FE Endangered

FT Threatened

FC Candidate

State (CDFW)

SE Endangered

ST Threatened

SR Rare

SC Candidate

California Native Plant Society (CNPS) List Categories

List 1A Plants Presumed Extinct in California

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

List 4 Plants of Limited Distribution – A Watch List

California Native Plant Society (CNPS) Threat Rank Extensions

.1 Seriously threatened in California (high degree/immediacy of threat)

.2 Fairly threatened in California (moderate degree/immediacy of threat)

.3 Not very threatened in California (low degree/immediacy of threat or no current threats known)

DRAFT



Appendix B:
FLORAL COMPENDIA

DRAFT



PLANTS (*introduced/non-native)

SCIENTIFIC NAME (* introduced/nonnative species)	COMMON NAME
AGAVACEAE	AGAVE FAMILY
<i>Hesperocallis undulata</i>	Desert lily
<i>Yucca baccata</i>	Banana yucca
<i>Yucca brevifolia</i>	Joshua tree
<i>Yucca schidigera</i>	Mohave yucca
AMARANTHACEAE	AMARANTH FAMILY
<i>Tidestromia suffruticosa</i>	Honeysweet
ANACARDIACEAE	SUMAC FAMILY
<i>Rhus aromatic</i>	Fragrant sumac
APIACEAE	PARSLEY FAMILY
<i>Cymopterus multinervatus</i>	Purplenerve springparsley (CNPS 2B.2)
<i>Lomatium nevadense</i>	Nevada biscuitroot
APOCYNACEAE	DOGBANE FAMILY
<i>Asclepias erosa</i>	Desert milkweed
ASTERACEAE	SUNFLOWER FAMILY
<i>Acamptopappus sphaerocephalus</i>	Rayless goldenhead
<i>Adenophyllum cooperi</i>	Cooper's dogweed
<i>Ambrosia acanthicarpa</i>	Annual bur-sage
<i>Ambrosia dumosa</i>	White bursage
<i>Ambrosia eriocentra</i>	Woolly bursage
<i>Ambrosia salsola</i>	Burrobush
<i>Amphipappus fremontii</i> var. <i>fremontii</i>	Femont's chaff bush
<i>Amphipappus fremontii</i> var. <i>spinosus</i>	Spiny fremont's chaffbush
<i>Atrichoseris platyphylla</i>	Parachute flower
<i>Baccharis brachyphylla</i>	Short leaved baccharis
<i>Baileya multiradiata</i>	Desert marigold
<i>Baileya pauciradiata</i>	Lax flower
<i>Baileya pleniradiata</i>	Woolly desert marigold
<i>Bebbia juncea</i>	Sweetbush
<i>Brickellia californica</i>	California brickellbush
<i>Brickellia incana</i>	Woolly brickellbush
<i>Chaenactis carphoclinia</i>	Pebble pincushion
<i>Chaenactis fremontii</i>	Fremont pincushion
<i>Chaenactis stevioides</i>	Desert pincushion
<i>Chaetopappa ericoides</i>	Rose heath
<i>Dicoria canescens</i>	Desert twinbugs
<i>Dieteria canescens</i> var. <i>leucanthemifolia</i>	Hoary aster
<i>Encelia actoni</i>	Acton encelia
<i>Encelia farinosa</i>	Brittlebush
<i>Encelia frutescens</i>	Button brittlebush
<i>Encelia virginensis</i>	Virgin river brittlebush
<i>Ericameria cooperi</i>	Cooper's goldenbush

SCIENTIFIC NAME (* introduced/nonnative species)	COMMON NAME
<i>Ericameria laricifolia</i>	Turpentine bush
<i>Ericameria linariifolia</i>	Interior goldenbush
<i>Ericameria paniculata</i>	Mojave rabbitbrush
<i>Eriophyllum wallacei</i>	Wallace's woolly daisy
<i>Geraea canescens</i>	Hairy desert sunflower
<i>Gutierrezia microcephala</i>	Sticky snakeweed
* <i>Lactuca serriola</i>	*Prickly lettuce
<i>Layia glandulosa</i>	Whitedaisy tidytips
<i>Lepidospartum squamatum</i>	Scalebroom
<i>Leucosyris arida</i>	Silver lake daisy
<i>Logfia depressa</i>	Dwarf cottonrose
<i>Malacothrix coulteri</i>	Snake's head
<i>Malacothrix glabrata</i>	Desert dandelion
<i>Monoptilon bellidiforme</i>	Small desert star
<i>Monoptilon bellioides</i>	Mojave desert star
<i>Palafoxia arida</i>	Desert palafox
<i>Palafoxia arida</i> var. <i>arida</i>	Desert needle
<i>Perityle emoryi</i>	Emory's rockdaisy
<i>Pleurocoronis pluriseta</i>	Bush arrowleaf
<i>Porophyllum gracile</i>	Slender poreleaf
<i>Psilostrophe cooperi</i>	Cooper's paper daisy
<i>Rafinesquia neomexicana</i>	Desert chicory
<i>Senecio flaccidus</i> var. <i>monoensis</i>	Mono ragwort
<i>Stephanomeria pauciflora</i>	Desert straw
<i>Stephanomeria exigua</i>	Small wirelettuce
<i>Stylocline micropoides</i>	Desert nest straw
<i>Tetradymia stenolepis</i>	Mojave cottonthorn
<i>Trichoptilium incisum</i>	Yellowhead
<i>Uropappus lindleyi</i>	Silver puffs
<i>Xylorhiza tortifolia</i>	Mojave aster
<i>Xylorhiza tortifolia</i> var. <i>tortifolia</i>	Mojave woodyaster
BIGNONIACEAE	MINT FAMILY
<i>Chilopsis linearis</i> ssp. <i>arcuata</i>	Desert willow
BORAGINACEAE	BORAGE FAMILY
<i>Amsinckia intermedia</i>	Common fiddleneck
<i>Amsinckia tessellata</i>	Devil's lettuce
<i>Cryptantha angustifolia</i>	Narrow leaved forget-me-not
<i>Cryptantha circumscissa</i>	Western forget-me-not
<i>Cryptantha dumetorum</i>	Bushloving cryptantha
<i>Cryptantha maritima</i>	White haired forget-me-not
<i>Cryptantha micrantha</i>	Purple rooted forget-me-not
<i>Cryptantha nevadensis</i>	Nevada forget-me-not
<i>Cryptantha pterocarya</i>	Winged-nut forget-me-not
<i>Eucrypta micrantha</i>	Desert eucrypta
<i>Heliotropium convolvulaceum</i>	Phlox heliotrope
<i>Nama demissum</i>	Purplemat
<i>Pectocarya heterocarpa</i>	Chuckwalla combseed

SCIENTIFIC NAME (* introduced/nonnative species)	COMMON NAME
<i>Pectocarya linearis</i> ssp. <i>ferocula</i>	Sagebrush combseed
<i>Pectocarya penicillata</i>	Winged combseed
<i>Pectocarya platycarpa</i>	Broadfruit combseed
<i>Pectocarya recurvata</i>	Curvenut combseed
<i>Pectocarya setosa</i>	Moth combseed
<i>Phacelia crenulata</i>	Notch leaved phacelia
<i>Phacelia crenulate</i> var. <i>ambigua</i>	Heliotrope phacelia
<i>Phacelia distans</i>	Common phacelia
<i>Phacelia fremontii</i>	Fremont's phacelia
<i>Plagiobothrys arizonicus</i>	Arizona popcorn flower
<i>Plagiobothrys jonesii</i>	Jones' popcorn flower
<i>Tiquilia plicata</i>	Fanleaf crinklemat
BRASSICACEAE	MUSTARD FAMILY
<i>Boechera glaucovalvula</i>	Bluepod rockcress
* <i>Brassica tournefortii</i>	*Saharan mustard
<i>Descurainia pinnata</i>	Western tansymustard
* <i>Hirschfeldia incana</i>	*Mediterranean hoary mustard
<i>Lepidium fremontii</i>	Desert peppergrass
<i>Lepidium lasiocarpum</i>	Shaggyfruit pepperweed
<i>Lepidium nitidum</i>	Shining pepperweed
* <i>Sisymbrium altissimum</i>	*Tubling mustard
* <i>Sisymbrium irio</i>	*London rocket
CACTACEAE	CACTUS FAMILY
<i>Cylindropuntia acanthocarpa</i>	Buck horn cholla
<i>Cylindropuntia echinocarpa</i>	Wiggins' cholla
<i>Cylindropuntia ramosissima</i>	Branched pencil cholla
<i>Echinocactus polycephalus</i> var. <i>polycephalus</i>	Cottontop cactus
<i>Echinocereus engelmannii</i>	Calico cactus
<i>Echinocereus mojavenis</i>	Mojave kingcup cactus
<i>Ferocactus cylindraceus</i>	Barrel cactus
<i>Grusonia parishii</i>	Matted cholla (CNPS 2B.2)
<i>Mammillaria tetrancistra</i>	Common fishhook cactus
<i>Opuntia basilaris</i> var. <i>basilaris</i>	Beavertail cactus
<i>Opuntia chlorotica</i>	Dollarjoint pricklypear
<i>Opuntia phaeacantha</i>	Mojave pricklypear
<i>Opuntia polyacantha</i> var. <i>erinacea</i>	Grizzlybear pricklypear
CAMPANULACEAE	BELLFLOWER FAMILY
<i>Nemacladus orientalis</i>	Eastern glandular nemacladus
CARYOPHYLLACEAE	CARNATION FAMILY
<i>Achyronychia cooperi</i>	Frost mat
<i>Eremogone macradenia</i> var. <i>macradenia</i>	Desert sandwort
CHENOPODIACEAE	GOOSEFOOT FAMILY
<i>Atriplex hymenelytra</i>	Desert holly
<i>Atriplex polycarpa</i>	Allscale saltbush

SCIENTIFIC NAME (* introduced/nonnative species)	COMMON NAME
<i>Grayia spinosa</i>	Spiny hopsage
<i>Krascheninnikovia lanata</i>	Winterfat
* <i>Salsola tragus</i>	*Prickly Russian thistle
CLEOMACEAE	BEEPLANT FAMILY
<i>Cleomella obtusifolia</i>	Mojave cleomella
CONVOLVULACEAE	MORNING GLORY FAMILY
<i>Cuscuta denticulate</i>	Desert dodder
CUCURBITACEAE	CUCUMBER FAMILY
<i>Cucurbita palmata</i>	Coyote melon
CUPRESSACEAE	CYPRESS FAMILY
<i>Juniperus osteosperma</i>	Utah juniper
EPHEDRACEAE	JOINTFIR FAMILY
<i>Ephedra californica</i>	Desert tea
<i>Ephedra funereal</i>	Death valley ephedra
<i>Ephedra nevadensis</i>	Nevada mormon tea
EUPHORBIACEAE	SPURGE FAMILY
<i>Croton californicus</i>	Desert croton
<i>Euphorbia albomarginata</i>	Rattlesnake sandmat
<i>Euphorbia micromera</i>	Sonoran sandmat
<i>Euphorbia parishii</i>	Parish's sandmat
<i>Euphorbia serpyllifolia</i>	Thyme-leafed spurge
<i>Stillingia spinulosa</i>	Broad leaved stillingia
FABACEAE	PEA FAMILY
<i>Astragalus didymocarpus</i>	Dwarf white milkvetch
<i>Astragalus layneae</i>	Widow's milkvetch
<i>Astragalus lentiginosus</i>	Freckled milkvetch
<i>Astragalus lentiginosus</i> var. <i>fremontii</i>	Fremont's milkvetch
<i>Astragalus mohavensis</i>	Mohave locoweed
<i>Astragalus mohavensis</i> var. <i>mohavensis</i>	Mojave milkvetch
<i>Astragalus nuttallianus</i>	Nuttall locoweed
<i>Astragalus sabulonum</i>	Gravel milkvetch (CNPS 2B.2)
* <i>Caesalpinia gilliesii</i>	*Bird of paradise
<i>Dalea mollissima</i>	Silky dalea
<i>Lupinus arizonicus</i>	Arizona lupine
<i>Lupinus bicolor</i>	Bicolored lupine
<i>Lupinus concinnus</i>	Bajada lupine
<i>Lupinus flavoculatus</i>	Yellow-eyed lupine
<i>Lupinus odoratus</i>	Mojave lupine
<i>Lupinus shockleyi</i>	Purple desert lupine
<i>Prosopis glandulosa</i>	Honey mequite
<i>Psoralethamnus arborescens</i>	Mojave indigo bush
<i>Psoralethamnus fremontii</i>	Fremont's indigo bush

SCIENTIFIC NAME (* introduced/nonnative species)	COMMON NAME
<i>Senegalia greggii</i>	Devil's catclaw
<i>Senna armata</i>	Desert senna
GERANIACEAE	GERANIUM FAMILY
* <i>Erodium cicutarium</i>	Red-stemmed filaree
KRAMERIACEAE	RHATANY FAMILY
<i>Krameria bicolor</i>	White rhatany
<i>Krameria erecta</i>	Littleleaf ratany
LAMIACEAE	MINT FAMILY
<i>Salvia columbariae</i>	Chia sage
<i>Salvia dorrii</i>	Desert sage
<i>Scutellaria mexicana</i>	Mexican bladdersage
LOASACEAE	LOASA FAMILY
<i>Eucnide urens</i>	Desert bush nettle
<i>Mentzelia albicaulis</i>	White-stemmed blazingstar
<i>Mentzelia involucrata</i>	Sand blazingstar
<i>Mentzelia veatchiana</i>	Veatch's blazing star
<i>Petalonyx thurberi</i>	Sandpaper plant
MALVACEAE	MALLOW FAMILY
<i>Eremalche exilis</i>	White mallow
<i>Eremalche rotundifolia</i>	Desert fivespot
<i>Sphaeralcea ambigua</i>	Desert mallow
MYRTACEAE	MYRTLE FAMILY
* <i>Eucalyptus camaldulensis</i>	*Red river gum
NYCTAGINACEAE	FOUR O'CLOCK FAMILY
<i>Abronia villosa</i> var. <i>villosa</i>	Desert sand verbena
<i>Allionia incarnate</i>	Trailing four o'clock
<i>Allionia incarnata</i> var. <i>villosa</i>	Trailing windmills
<i>Mirabilis laevis</i>	Desert wishbone bush
<i>Mirabilis laevis</i> var. <i>retrorsa</i>	Wishbone bush
<i>Mirabilis laevis</i> var. <i>villosa</i>	Wishbone bush
<i>Mirabilis multiflora</i>	Colorado four o'clock
OLEACEAE	OLIVE FAMILY
<i>Menodora spinescens</i>	Spiny desert olive
ONAGRACEAE	EVENING PRIMROSE FAMILY
<i>Camissonia campestris</i>	Mojave suncup
<i>Camissonia pallida</i> ssp. <i>hallii</i>	Hall's suncup
<i>Chylisima claviformis</i>	Clavate fruited primrose
<i>Chylismia brevipes</i>	Yellow cups
<i>Chylismia claviformis</i>	Clavate fruited primrose
<i>Eremothera boothii</i>	Booth's sun cup

SCIENTIFIC NAME (* introduced/nonnative species)	COMMON NAME
<i>Eulobus californicus</i>	California primrose
<i>Oenothera californica</i>	California evening primrose
<i>Oenothera deltoides</i>	Desert lantern
<i>Oenothera deltoies</i> ssp. <i>cognata</i>	Birdcage evening primrose
OROBANCHACEAE	BROOMRAPE FAMILY
<i>Castilleja chromosa</i>	Desert paintbrush
PAPAVERACEAE	POPPY FAMILY
<i>Argemone corymbosa</i>	Mohave prickly poppy
<i>Eschscholzia glyptosperma</i>	Desert golden poppy
<i>Eschscholzia minutiflora</i>	Pygmy poppy
PHRYMACEAE	LOPSEED FAMILY
<i>Mimulus bigelovii</i> var. <i>bigelovii</i>	Bigelow's monkeyflower
PINACEAE	PINE FAMILY
* <i>Pinus pinea</i>	*Italian stone pine
PLANTAGINACEAE	PLANTAGO FAMILY
<i>Mohavea breviflora</i>	Golden desert snapdragon
<i>Mohavea confertiflora</i>	Ghost flower
<i>Plantago ovata</i>	Desert plantain
<i>Plantago patagonica</i>	Patagonia plantain
POACEAE	GRASS FAMILY
* <i>Bromus madritensis</i>	*Foxtail brome
<i>Dasyochloa pulchella</i>	Low woollygrass
<i>Hilaria rigida</i>	Big galleta
<i>Muhlenbergia porteri</i>	Bush muhly
<i>Panicum urvilleanum</i>	Desert panicgrass
* <i>Schismus arabicus</i>	*Arabian schismus
* <i>Schismus barbatus</i>	*Common mediterranean grass
<i>Sporobolus cryptandrus</i>	Sand dropseed
<i>Stipa hymenoides</i>	Indian rice grass
<i>Stipa speciosa</i>	Desert needle grass
* <i>Triticum aestivum</i>	*Common wheat
POLEMONIACEAE	PHLOX FAMILY
<i>Eriastrum diffusum</i>	Miniature woollystar
<i>Eriastrum eremicum</i>	Desert woollystar
<i>Gilia brecciarum</i>	Nevada gilia
<i>Gilia scopulorum</i>	Rock gilia
<i>Gilia stellata</i>	Star gilia
<i>Langloisia setosissima</i>	Bristly langloisia
<i>Langloisia setosissima</i> ssp. <i>punctata</i>	Lilac sunbonnet
<i>Linanthus aureus</i>	Golden gilia
<i>Linanthus demissus</i>	Desert linanthus
<i>Loeseliastrum schottii</i>	Schott's gilia

SCIENTIFIC NAME (* introduced/nonnative species)	COMMON NAME
POLYGONACEAE	BUCKWHEAT FAMILY
<i>Centrostegia thurberi</i>	Red triangles
<i>Chorizanthe brevicornu</i>	Brittle spine flower
<i>Chorizanthe brevicornu</i> var. <i>brevicornu</i>	Brittle spineflower
<i>Chorizanthe rigida</i>	Devil's spineflower
<i>Eriogonum brachypodum</i>	Parry's buckwheat
<i>Eriogonum deflexum</i>	Flatcrown buckwheat
<i>Eriogonum fasciculatum</i>	Eastern mojave buckwheat
<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	California buckwheat
<i>Eriogonum inflatum</i>	Desert trumpet
<i>Eriogonum maculatum</i>	Spotted buckwheat
<i>Eriogonum nidularium</i>	Whisk broom
<i>Eriogonum pusillum</i>	Yellow turbans
<i>Eriogonum thomasi</i>	Thomas' buckwheat
<i>Eriogonum trichopes</i>	Little desert buckwheat
<i>Oxytheca perfoliata</i>	Roundleaf oxytheca
<i>Rumex hymenosepalus</i>	Wild rhubarb
RANUNCULACEAE	BUTTERCUP FAMILY
<i>Delphinium parishii</i>	Desert larkspur
<i>Delphinium parryi</i>	San Bernardino larkspur
RESEDACEAE	MIGNONETTE FAMILY
<i>Oligomeris linifolia</i>	Lineleaf whitepuff
ROSACEAE	ROSE FAMILY
<i>Coleogyne ramosissima</i>	Blackbrush
RUTACEAE	CITRUS FAMILY
<i>Thamnosma montana</i>	Turpentine broom
SIMAROUBACEA	QUASSIA FAMILY
<i>Castela emoryi</i>	Emory's crucifixion thorn (CNPS 2B.2)
SOLANACEAE	NIGHTSHADE FAMILY
<i>Datura wrightii</i>	Jimsonweed
<i>Lycium andersonii</i>	Water jacket
<i>Lycium cooperi</i>	Cooper's box thorn
<i>Nicotiana obtusifolia</i>	Desert tobacco
<i>Physalis crassifolia</i>	Yellow nightshade groundcherry
TAMARICACEAE	TAMARISK FAMILY
* <i>Tamarix aphylla</i>	*Athel tamarisk
* <i>Tamarix chinensis</i>	*Chinese tamarisk
THEMIDACEAE	THEMIDACEAE FAMILY
<i>Dichelostemma capitatum</i>	Blue dicks

SCIENTIFIC NAME (* introduced/nonnative species)	COMMON NAME
ULMACEAE <i>*Ulmus spp.</i>	ELM FAMILY *Elm
VISCACEAE <i>Phoradendron spp.</i>	MISTLETOE FAMILY Mistletoe
ZYGOPHYLLACEAE <i>Larrea tridentata</i>	CALTROP FAMILY Creosote bush

LEGEND:**Federal (USFWS)**

FE Endangered
FT Threatened
FC Candidate

State (CDFW)

SE Endangered
ST Threatened
SR Rare
SC Candidate

California Native Plant Society (CNPS) List Categories

List 1A Plants Presumed Extinct in California
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
List 4 Plants of Limited Distribution – A Watch List

California Native Plant Society (CNPS) Threat Rank Extensions

.1 Seriously threatened in California (high degree/immediacy of threat)
.2 Fairly threatened in California (moderate degree/immediacy of threat)
.3 Not very threatened in California (low degree/immediacy of threat or no current threats known)

**APPENDIX C:
SITE PHOTOGRAPHS**

DRAFT





PHOTO 1:

PHOTO OF GENERAL AREA
CONDITIONS ALONG PROJECT.

PHOTO 2:

PHOTO OF NON-NATIVE
GRASSLANDS ALONG PROJECT
ALIGNMENT.



PHOTO 3:

PHOTO OF CREOSOTE BUSH
(*LARREA TRIDENTATA*)
SHURBLAND ALLIANCE.



PHOTO 4:

PHOTO OF MOHAVE YUCCA
(*YUCCA SCHIDIGERA*) CLONAL
COLONY.





PHOTO 5:

PHOTO OF *CASTELA EMORYI* (CRUCIFIXION THORN) FOUND NEAR PROJECT ALIGNMENT IN *LARREA TRIDENTATA* SHRUBLAND ALLIANCE.

PHOTO 6:

PHOTO OF GENERAL AREA CONDITIONS FOR PROPOSED COOLWATER YARD.



PHOTO 7:

PHOTO OF PURPLENERVE SPRINGPARSLEY (*CYMOPTERUS MULTINERVATUS*) FOUND AT 4590 FEET IN A *YUCCA BREVIFOLIA* WOODLAND ALLIANCE.

PHOTO 8:

CLOSE-UP PHOTO OF PURPLENERVE SPRINGPARSLEY.



RARE PLANT SURVEY FORM

Date: 4/19/17 Site Name: M84-T3 (Map Pg 13) UID: _____
 Lead Botanist: Kevin Thomas Supporting Botanist(s): Nichole Nesbina
 Target Species: Castela Emoryi Target observed at reference? Yes No Unsure
 Reference Population Name: _____ Area Covered: _____ Units: Acres ft² m²
 Target species present on Site? Yes No
 GPS Make and Model: Garmin 64st GPS Accuracy: 3 Units: Feet or Meters
 Coordinate System: Lat/Long (UTM) Other: 11S 573027 3866514 Datum: NAD27 NAD83 (WGS84)
 Y Coordinate (Latitude): _____ X Coordinate (Longitude): _____

Plant Data

Count unit: stem clump rosette Size determined by: Census Sample (Visual) Estimate
 Plant count: 1 Estimated area: 5 Units: Acres ft² m²
 OR Estimate: 251-500 501-1000 >1000 OR % Cover: 0 1-5 6-25 26-50 51-100
 % Vegetative: 0 1-5 6-25 26-50 51-100 % Flowering: 0 1-5 6-25 26-50 51-100
 % Fruiting: 0 1-5 6-25 26-50 51-100 % Senescent: 0 1-5 6-25 26-50 51-100
 Seedlings or Immature present? Yes (No) Unsure Count time: _____ minutes
 What is the condition of this rare plant occurrence? Excellent (Average) Poor Unsure
 Please note the characteristic(s) considered: Vegetation
 Conditions which might have prevented surveyors from locating target species? N/A
 Voucher specimen obtained? Yes No Stored where? _____
 Permit Number(s): _____

Habitat

Slope/topographical position: gravelly wash NE gradual slope
 Elevation range: 1381 ft
 Aspect: NE
 Hydrology: Wash and alluvial slope
 Soils: _____
 Vegetation Alliance: Creosote Scrub
 Associated species: Larrea tridentata, Hymenoclea salsola, Bebbia Juncea, Encelia frutescens

Invasive Species

_____	Rare	Uncommon	Common	Abundant
_____	Rare	Uncommon	Common	Abundant
_____	Rare	Uncommon	Common	Abundant
_____	Rare	Uncommon	Common	Abundant
_____	Rare	Uncommon	Common	Abundant

Abundant: >100 observations Common: 50-100 observations Uncommon: 10-50 observations Rare: <10 observations

Name: Kevin Thomas

Date: 4/14/17 UID: _____

Disturbance

Development: None Trace Some Most Trampling: None Trace Some Most
 Browsing: None Trace Some Most Drought: None Trace Some Most
 Insect damage or disease: None Trace Some Most Fire: None Trace Some Most
 Competition/ succession: None Trace Some Most Drought/Hydro: None Trace Some Most
 Adjacent land management: None Trace Some Most
 Other disturbance (please describe) and specific comments: next to road edge

Management Recommendations: _____

Photo Log

Photo Number	File Name	Feature Photographed (e.g., flower, juvenile, unknown, insect)	Location and Direction of Photo (e.g., center of colony looking North)
01	CASEM01	whole plant	looking north
02	CASEM02	branch	looking north
03			
04			
05			
06			
07			
08			
09			
10			

Notes

OFFICE USE ONLY

Purpose	Date	Initials
Entered into Spreadsheet		
100% Check		
10% Check		
Validation		



Environmental Intelligence, LLC

RARE PLANT SURVEY FORM

Date: 4/20/2017 Site Name: _____ UID: _____
 Lead Botanist: Kevin Thomas Supporting Botanist(s): Nichole Nesbital
 Target Species: Castela Emoryi
 Reference Population Name: _____ Target observed at reference? Yes No Unsure
 Target species present on Site? Yes No Area Covered: 500 Units: Acres ft² m²
 GPS Make and Model: Garmin 64 st GPS Accuracy: 5 Units: Feet or Meters
 Coordinate System: Lat/Long UTM Other: 115 580158 3870597 Datum: NAD27 NAD83 WGS84
 Y Coordinate (Latitude): _____ X Coordinate (Longitude): _____

Plant Data

Count unit: stem clump rosette Size determined by: Census Sample Visual Estimate
 Plant count: 5 Estimated area: 500 Units: Acres ft² m²
 OR Estimate: 251-500 501-1000 >1000 OR % Cover: 0 1-5 6-25 26-50 51-100
 % Vegetative: 0 1-5 6-25 26-50 51-100 % Flowering: 0 1-5 6-25 26-50 51-100
 % Fruiting: 0 1-5 6-25 26-50 51-100 % Senescent: 0 1-5 6-25 26-50 51-100
 Seedlings or Immature present? Yes No Unsure Count time: _____ minutes
 What is the condition of this rare plant occurrence? Excellent Average Poor Unsure
 Please note the characteristic(s) considered: Vegetation
 Conditions which might have prevented surveyors from locating target species? N/A
 Voucher specimen obtained? Yes No Stored where? _____
 Permit Number(s): _____

Habitat

Slope/topographical position: wash
 Elevation range: _____
 Aspect: EAST
 Hydrology: _____
 Soils: _____
 Vegetation Alliance: Creosote Scrub
 Associated species: Larrea Tridentata, Hymenoclea Salsola
Lebbia Suncea, Encelia frutescens

Invasive Species

_____	Rare	Uncommon	Common	Abundant
_____	Rare	Uncommon	Common	Abundant
_____	Rare	Uncommon	Common	Abundant
_____	Rare	Uncommon	Common	Abundant
_____	Rare	Uncommon	Common	Abundant

Abundant: >100 observations Common: 50-100 observations Uncommon: 10-50 observations Rare: <10 observations

Disturbance

Development:	None	Trace	<u>Some</u>	Most	Trampling:	None	Trace	Some	Most
Browsing:	<u>None</u>	Trace	Some	Most	Drought:	None	Trace	Some	Most
Insect damage or disease:	None	Trace	Some	Most	Fire:	None	Trace	Some	Most
Competition/ succession:	<u>None</u>	Trace	Some	Most	Drought/Hydro:	None	Trace	Some	Most
Adjacent land management:	None	Trace	<u>Some</u>	Most	Other disturbance (please describe) and specific comments: <u>within Survey Area Nest</u>				
<u>To tower</u>									

Management Recommendations: _____

Photo Log

Photo Number	File Name	Feature Photographed (e.g., flower , juvenile, unknown, insect)	Location and Direction of Photo (e.g., center of colony looking North)
01	<u>CASEMO3</u>		
02	<u>CASEMO4</u>		
03			
04			
05			
06			
07			
08			
09			
10			

Notes

OFFICE USE ONLY

Purpose	Date	Initials
Entered into Spreadsheet		
100% Check		
10% Check		
Validation		



Environmental Intelligence, LLC

RARE PLANT SURVEY FORM

Date: 04/20/17 Site Name: LVRAS UID: _____
 Lead Botanist: Doug GB / Rox Clerk Supporting Botanist(s) _____
 Target Species: Cymopterus multbinervatus
 Reference Population Name: _____ Target observed at reference? Yes No Unsure
 Target species present on Site? Yes No Area Covered: 100 Units: Acres ft² m²
 GPS Make and Model: GPSMAP 64s GPS Accuracy: ±9' Units: Feet Meters
 Coordinate System: Lat/Long UTM Other: ~~H-0-0030~~ Datum: NAD27 NAD83 WGS84
 Y Coordinate (Latitude): 115 0630289 X Coordinate (Longitude): 3899271

Plant Data

Count unit: stem clump rosette Size determined by: Census Sample Visual Estimate
 Plant count: 10 Estimated area: 100' Units: Acres m²
 OR Estimate: 251-500 501-1000 >1000 OR % Cover: 0 1-5 6-25 26-50 51-100
 % Vegetative: 0 1-5 6-25 26-50 51-100 % Flowering: 0 1-5 6-25 26-50 51-100
 % Fruiting: 0 1-5 6-25 26-50 51-100 % Senescent: 0 1-5 6-25 26-50 51-100
 Seedlings or Immature present? Yes No Unsure Count time: 30 minutes
 What is the condition of this rare plant occurrence? Excellent Average Poor Unsure
 Please note the characteristic(s) considered: Purple nerved bracts, leaf morphology
 Conditions which might have prevented surveyors from locating target species? plants growing among Hiloria rigida, generally obscured
 Voucher specimen obtained? Yes No Stored where? _____
 Permit Number(s): Not enough individuals

Habitat

Slope/topographical position: # 5%
 Elevation range: 4571'
 Aspect: S
 Hydrology: Xeric
 Soils: Sandy / decomposed limestone
 Vegetation Alliance: Yucca brevifolia alliance
 Associated species: Yucca brevifolia, Hiloria rigida, Cyllindropuntia, Larrea, Bromus Ephedra, Yucca baccata

Invasive Species

_____	Rare	Uncommon	Common	Abundant
_____	Rare	Uncommon	Common	Abundant
_____	Rare	Uncommon	Common	Abundant
_____	Rare	Uncommon	Common	Abundant
_____	Rare	Uncommon	Common	Abundant

Abundant: >100 observations Common: 50-100 observations Uncommon: 10-50 observations Rare: <10 observations

Disturbance

Development:	None <u>Trace</u> Some Most	Trampling:	None <u>Trace</u> Some Most
Browsing:	None Trace <u>Some</u> Most	Drought:	None <u>Trace</u> Some Most
Insect damage or disease:	<u>None</u> Trace Some Most	Fire:	<u>None</u> Trace Some Most
Competition/ succession:	None <u>Trace</u> Some Most	Drought/Hydro:	<u>None</u> Trace Some Most
Adjacent land management:	<u>None</u> Trace Some Most		

Other disturbance (please describe) and specific comments: Located w/in active cattle range
lands

Management Recommendations: _____

Photo Log

Photo Number	File Name	Feature Photographed (e.g., flower, juvenile, unknown, insect)	Location and Direction of Photo (e.g., center of colony looking North)
01	<u>8839</u>	<u>Plant w/ Flower bracts</u>	<u>down, center of colony</u>
02			
03			
04			
05			
06			
07			
08			
09			
10			

Notes

Multiple Specimen observed

11 S 0630283 2899266 etc. 4591 11 S 0630293 3899259

11 S 0630293 3899267 11 S 0630276 3899265

11 S 0630292 3899263 2 individuals.

11 S 0630291 3899270

11 S 0630293 3899262

OFFICE USE ONLY

Purpose	Date	Initials
Entered into Spreadsheet		
100% Check		
10% Check		
Validation		

Appendix D-5

Calcite Substation Project Botanical Report

BOTANICAL REPORT

CALCITE SUBSTATION PROJECT SAN BERNARDINO COUNTY, CALIFORNIA

Prepared for:

Southern California Edison
6040 N. Irwindale Ave, Suite A
Irwindale, CA 91702
Contact: Rachael Poston

Prepared by:



July 2016

Table of Contents

1.0 Introduction 1

2.0 Project Location 1

3.0 Project Description 1

 3.1 Environmental Setting..... 4

 3.1.1 Vegetation Communities..... 4

4.0 Methodology..... 5

 4.1 Literature and Database Review..... 5

 4.2 Survey Methods..... 6

 4.3 Botanical Reference Sites..... 7

5.0 Results 7

 5.1 Botanical Reference Site Monitoring Results..... 7

 5.2 Plant Species..... 9

 5.3 Special-status Plant Species 9

 5.3.1 Alkali mariposa lily – CRPR 1B.2..... 9

 5.3.2 Borrego milkvetch – CRPR 4.3..... 9

 5.3.3 Utah vine milkvetch – CRPR 4.2..... 10

 5.3.4 Clokey’s cryptantha – CRPR 1B.2, BLM Sensitive 10

 5.3.5 Mojave menodora – CRPR 1B.2, BLM Sensitive..... 10

 5.3.6 Creamy blazing star – CRPR 1B.3, BLM Sensitive..... 11

 5.3.7 Mojave monkey flower – CRPR 1B.3, BLM Sensitive..... 11

 5.3.8 White-margined beardtongue – CRPR 1B.1, BLM Sensitive 11

 5.3.9 Parish’s phacelia – CRPR 1B.1, BLM Sensitive 11

 5.3.10 Parish’s popcorn flower – CRPR 1B.1, BLM Sensitive 12

6.0 Discussion 12

7.0 References..... 14

List of Figures

Figure 1. Project vicinity. 2

Figure 2. Project location..... 3

Figure 3. Reference site locations. 8

List of Attachments

Attachment A: Special-Status Plant Species Potential to Occur

Attachment B: Project Survey Area and Location of Special-Status Plant Species Observed

Attachment C: Plant Species Observed in the Project Area

Attachment D: Photos of Special-Status Plant Species Observed in the Project Area.

DRAFT

1.0 INTRODUCTION

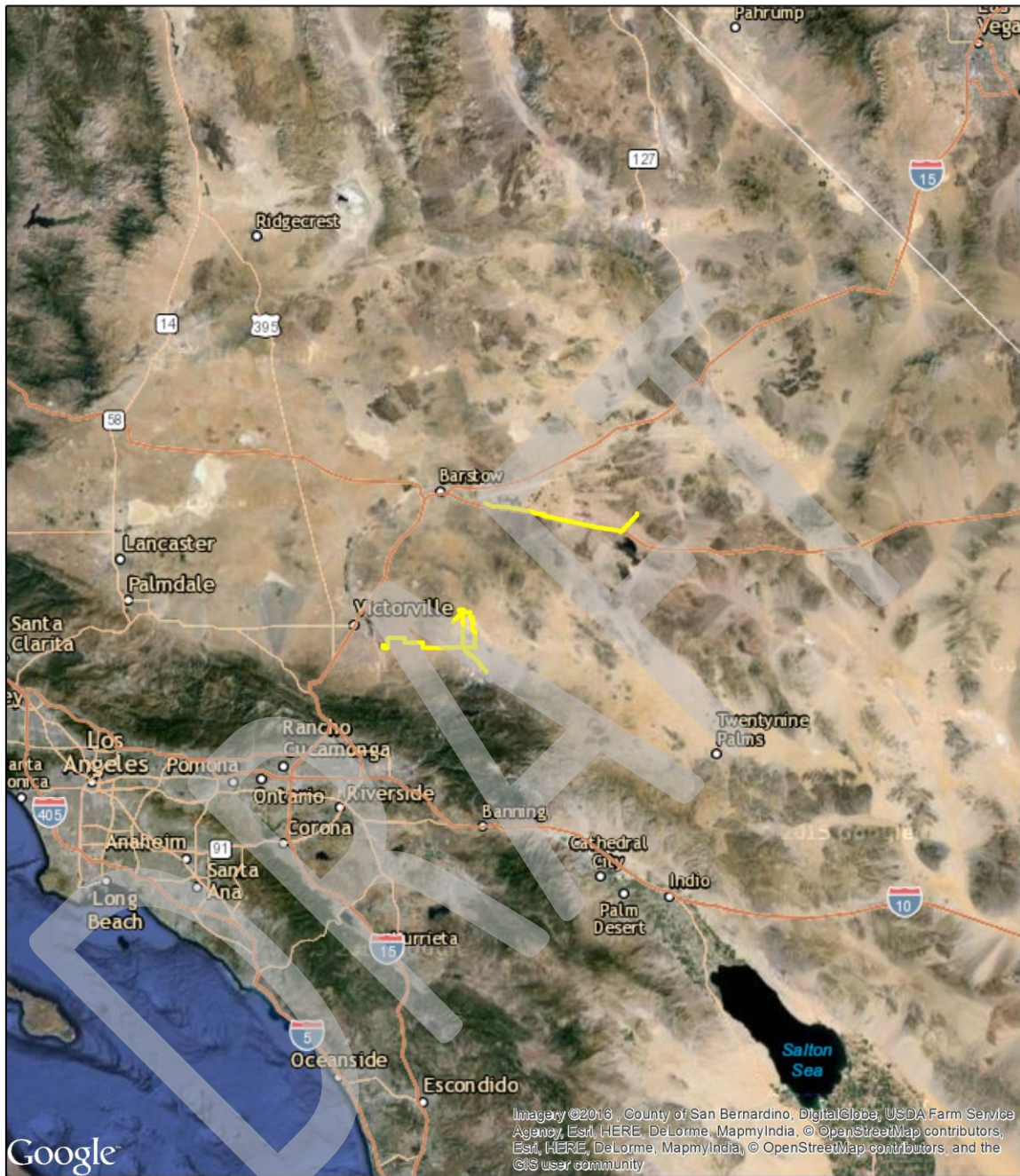
This botanical survey documents and describes the existing conditions of botanical resources associated with the Calcite Substation Project (Project). BRC-Equals 3, Inc. (B3) has prepared this report for the analysis of botanical resources, including the potential occurrence of special-status species within the Project Area.

2.0 PROJECT LOCATION

The Project is divided into three geographically-defined segments (the Apple Valley Telecom Route, the Northern Telecom Route, and the Southeast Telecom Route) (Figures 1 and 2). The Apple Valley Telecom Route extends southward from the proposed Calcite Substation, following State Route 247 to its intersection with State Route 18, and westward, from the proposed Calcite Substation to the Apple Valley Substation. The North Telecom Route extends eastward from the Gale Substation (which lies directly west of the Coolwater Switchyard), following Historic Route 66 to the Pisgah substation and terminating at the Hector Microwave Communication Site. The Southeastern Telecom Route extends southward from the proposed Calcite Substation toward State Route 18 and continues southeast, terminating at the Cottonwood Substation.

3.0 PROJECT DESCRIPTION

The Project will construct a new 220kV Jasper Substation, either the proposed site or at the alternate site in the Lucerne Valley. The new Jasper Substation will connect to two renewable power generators in the Lucerne Valley area. The renewable power generation site and the generator's tie-in line are not part of this Project description. Transmission loop-in lines would connect the substation to the "Lugo-Pisgah No. 1" 220 kV transmission line. The loop-in 220 kV lines will need to cross under the existing 500 kV "Lugo-Mojave" SCE transmission line; this line-crossing will require the removal and replacement of two 500 kV lattice towers along the Lugo-Mojave transmission line. The Project would also require the installation of new 12 kV overhead lines, which would connect the distribution system to the Jasper Substation. Telecommunication fiber optic cable, both new and existing, will connect the Jasper Substation to the Apple Valley and Cottonwood Substations. A second, unconnected telecom route will occur north of the Jasper Substation; this route would begin at the Gale Substation, pass through the Pisgah Substation, and terminate at the Hector Microwave Communication Site.



 Project Location

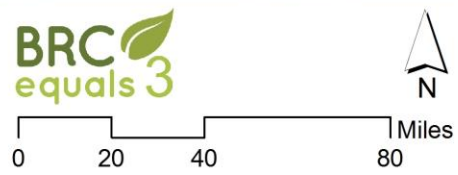


Figure 1. Project vicinity.

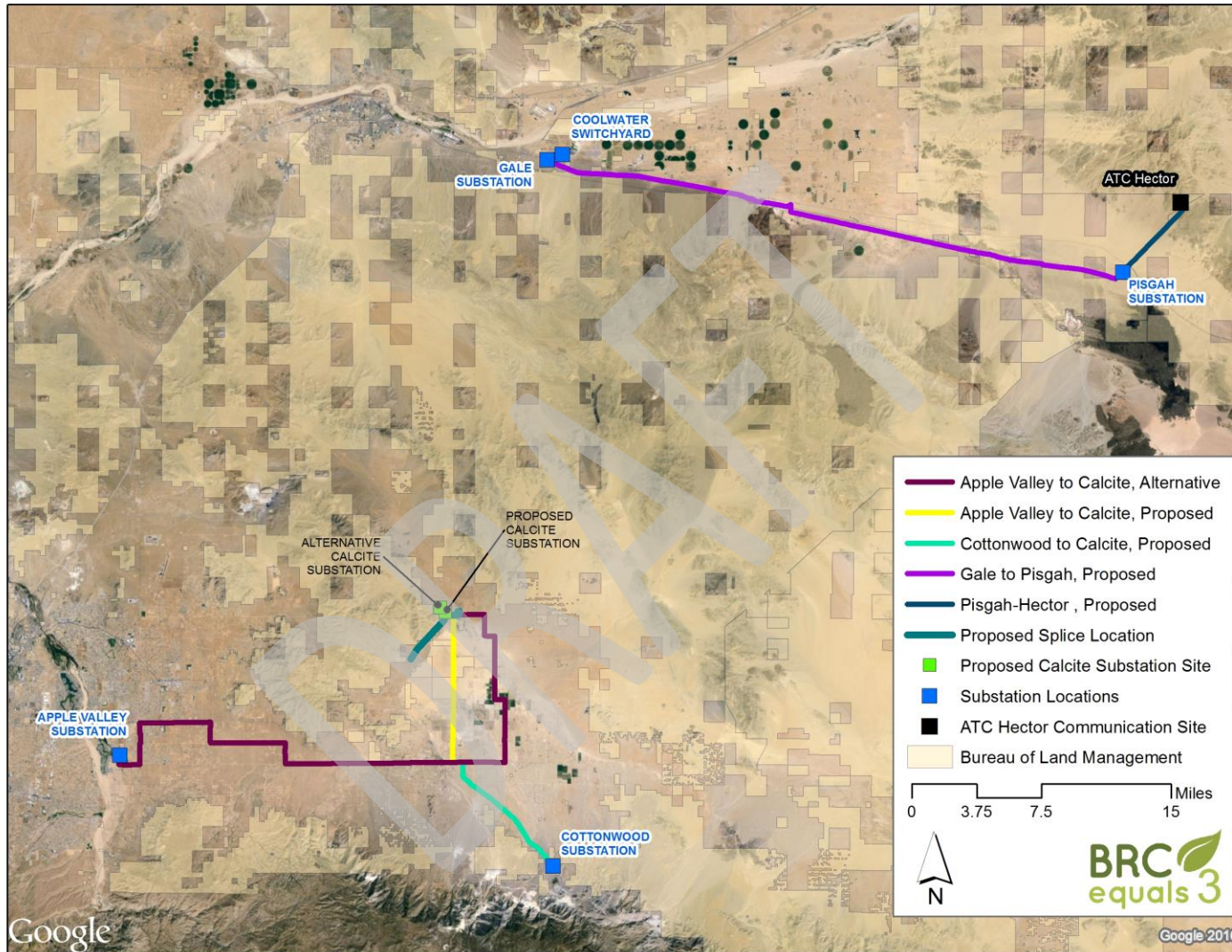


Figure 2. Project location.

3.1 ENVIRONMENTAL SETTING

The Project is located within the Mojave Desert. Temperatures at the Project location vary, with highs typically near 97.4 degrees Fahrenheit (°F) in the summer to lows near 32.7°F in the winter. Average rainfall can vary greatly with an average of 6.15 inches between 1981 to 2010 (NCDC 2016a). Snowfall occurs at higher elevations. The Project alignment crosses numerous ephemeral drainages of varying size. The last several years have been drought years characterized by extremely low winter rainfall (NCDC 2016b).

The Project lies within typical basin and range topography for the Mojave Desert. Elevations at the Project site vary from a low of approximately 1,776 feet above mean sea level (amsl) along the Northern Telecom Route to a high of approximately 3,170 feet amsl near the ATC Hector Microwave Communication Site. Large alluvial fans, which occur adjacent to the mountain fronts, slope toward the north where ephemeral streams deposit alluvial materials into dry lakes and the Mojave River. Soils within the survey area vary from extremely gravelly to sandy loam.

The Project is located on lands administered by the Bureau of Land Management (BLM) and private lands (Figure 2). Land uses in the immediate vicinity of the Project Area include open space areas, off-highway vehicle recreation areas, and low-density rural residential development.

3.1.1 Vegetation Communities

Fourteen vegetation communities/alliances were identified within the Project Area during the habitat assessment conducted by B3 in March 2016 (B3 2016). Within these alliances, a total of 20 vegetation associations were identified and mapped according to the three dominant plant species within each alliance (B3 2016). Vegetation communities follow the California Native Plant Society's (CNPS) Manual of California Vegetation (Sawyer et al., 2009). Table 1 provides the acreages of each vegetation community within the survey area. Full descriptions of each vegetation community are provided in B3's 2016 Habitat Assessment report for the Project.

TABLE 1. VEGETATION COMMUNITIES MAPPED WITHIN THE SURVEY AREA.

Vegetation Community Alliance/Association	Acres
<i>Ambrosia dumosa</i> Scrub	11.01
<i>Atriplex canescens</i> Shrubland	27.54
<i>Atriplex confertifolia</i> Shrubland	---
<i>Atriplex confertifolia</i> – <i>Ambrosia dumosa</i>	217.74
<i>Atriplex confertifolia</i> – <i>Atriplex canescens</i>	55.82
<i>Atriplex confertifolia</i> – <i>Atriplex polycarpa</i> sparse playa	20.42
<i>Atriplex confertifolia</i> – <i>Larrea tridentata</i> - <i>Ambrosia dumosa</i>	176.33
Alliance Only / No Association– <i>Atriplex confertifolia</i> Shrubland	253.43
<i>Atriplex polycarpa</i> Shrubland	---
<i>Atriplex polycarpa</i> – <i>Atriplex confertifolia</i>	72.50
<i>Atriplex polycarpa</i> sparse playa	411.42
Alliance Only / No Association– <i>Atriplex polycarpa</i> Shrubland	1,795.44
<i>Distichlis spicata</i> Herbaceous	---
<i>Distichlis spicata</i> / annual grasses	1.72
<i>Ericameria nauseosa</i> Shrubland	145.17
<i>Larrea tridentata</i> Shrubland	---

Vegetation Community Alliance/Association	Acres
<i>Larrea tridentata</i> – <i>Ambrosia salsola</i>	94.14
<i>Larrea tridentata</i> – <i>Atriplex polycarpa</i>	450.62
<i>Larrea tridentata</i> – <i>Ephedra nevadensis</i>	216.88
Alliance Only/No Association– <i>Larrea tridentata</i> Shrubland	549.23
<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> Shrubland	---
<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i>	3,408.41
<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> – <i>Atriplex canescens</i>	1.87
<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> – <i>Atriplex polycarpa</i>	374.40
<i>Larrea tridentata</i> / <i>Ambrosia dumosa</i> – <i>Ambrosia salsola</i>	11.34
<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> – <i>Ephedra nevadensis</i>	85.61
<i>Populus fremontii</i> Forest	---
<i>Populus fremontii</i> – <i>Salix laevigata</i> / <i>Salix lasiolepis</i> – <i>Baccharis salicifolia</i>	3.49
Alliance Only/No Association– <i>Populus fremontii</i> Forest	23.05
<i>Prosopis glandulosa</i> Woodland	22.35
<i>Salix exigua</i> Shrubland	---
<i>Salix exigua</i> / <i>Juncus</i> spp.	0.40
<i>Suaeda moquinii</i> Shrubland	---
<i>Suaeda moquinii</i> – <i>Atriplex canescens</i>	2.12
Alliance Only / No Association– <i>Suaeda moquinii</i> Shrubland	127.64
<i>Tamarix</i> spp. Semi-natural Shrubland Stands	74.71
<i>Yucca brevifolia</i> Woodland	---
<i>Yucca brevifolia</i> / <i>Ephedra nevadensis</i>	24.63
<i>Yucca brevifolia</i> / <i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> – <i>Eriogonum fasciculatum</i>	92.42
<i>Yucca brevifolia</i> / <i>Prunus fasciculata</i>	5.18
Alliance Only / No Association– <i>Yucca brevifolia</i> Woodland	299.26
Active Agriculture	310.75
Barren–Not Developed	30.60
Developed	653.00
Dry lake bed	330.70
Total Acreage	10,381.34

Note: indented text indicates vegetation associations within the vegetation community alliance.

4.0 METHODOLOGY

Prior to conducting the botanical surveys, standard database searches were conducted and previous surveys in the area were reviewed to obtain pertinent information regarding habitat types. The results of these preliminary database searches provided a basis for addressing the appropriate special-status species within the Project Area.

4.1 LITERATURE AND DATABASE REVIEW

B3 performed a review of special-status species and habitats within the survey area using information obtained from the California Natural Diversity Database (CNDDDB; CDFW 2016). The CNDDDB search included the *Apple Valley South*, *Big Bear City*, *Cougar Buttes*, *Fifteenmile Valley*, *Lucerne Valley*, *Hector*, *Minneola*, *Newberry Springs*, *Sleeping Beauty*, *Troy Lake*, *White Horse Mountain*, and surrounding U.S. Geological Survey (USGS) 7.5-minute quadrangles.

Additional literature and databases referenced include:

- California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (CNPS 2016)
- The Jepson Manual: Higher Plants of California (Baldwin 2012)
- A Manual of California Vegetation (Sawyer et al. 2009)
- The CalFlora Database online Database (CalFlora 2016)
- Consortium of California Herbaria (CCH) online Database (CCH 2016)
- Rarefind 5 (CNDDDB 2016)
- Jepson Flora Project (Jepson 2016)
- BLM sensitive (BLMS) plant and animal lists (BLM 2015).

Plants may be considered to have special-status due to declining populations, vulnerability to habitat change, restricted distributions, or insufficient knowledge of the species' biological status. Using information from the various listed sources and floral and faunal surveys of the area, the potential for special-status species to occur within the Project Area was assessed as Occurs, Likely, Unlikely, or Does Not Occur based on the following criteria:

- Occurs – The species was observed on-site during the survey.
- Likely - This species is expected to occur in the proposed Project Area based on presence of suitable habitat, and/or based on professional expertise specific to the site or species, with documented CNDDDB/CCH occurrences within 3 miles from the last decade.
- Unlikely – This species may occur within the proposed Project Area but is considered unlikely based on presence of only marginally suitable habitat and/or no documented CNDDDB/CCH records within the last decade within 3 miles of the Project Area.
- Does Not Occur – 1) This species is not expected to occur in the proposed Project Area. Suitable habitat was not observed in the Project Area during the survey. 2) The Project Area is outside of the currently known range of the species. 3) This species was observed to be present and identifiable at a reference site location and was found to be absent during surveys of the Project Area.

A table of documented CNDDDB special-status plant species occurrences within 3 miles of the Project Area along with their habitat suitability and an assessment of their potential to occur in the Project Area based on the aforementioned criteria is listed in Attachment A.

4.2 SURVEY METHODS

B3 botanists Steve Jones, Sarah Termondt, Chez Brungraber, and Griffin Brungraber conducted botanical surveys within the Project Area from April 26 to May 6, 2016 (April/May survey), and from June 14 to 17, 2016 (June survey). The survey area included 75 feet on either side of the alignment centerline and the entire proposed substation and work area sites (Attachment B). Botanists assessed suitable habitat for special-status species with potential to occur within the Project area during the April/May survey. During the June survey, the survey area was reduced to include only these previously identified areas of suitable habitat. Areas not surveyed during the June Survey included developed, agricultural and heavily disturbed areas and habitats determined from the April/May surveys to not be suitable for target special-status species. Plant species were

identified, either in the field or following collection for subsequent identification, using the identification keys described in Baldwin (2012). Nomenclature generally follows Sawyer et al. (2009) for vegetation types and communities and Calflora (2016), Baldwin (2012), and current scientific data (e.g., scientific journals) for plant species.

4.3 BOTANICAL REFERENCE SITES

B3 conducted botanical reference site monitoring to determine whether special-status plant species with the potential to occur within the Project Area were in bloom and identifiable at the time of botanical surveys and to obtain a visual image of the species and its associated habitat and natural community. Criteria utilized in reference site selection are outlined below.

- Species is documented in CNDDDB within Project vicinity and has a potential of occurrence rated as ‘Likely’ (Attachment A).
- Species has a status of federally- or state-listed endangered, or threatened, and/or a CNPS California Rare Plant Rank (CRPR) of 1B.1 or 1B.2.
- Species has recent CNDDDB/CCH records (within the last decade) found within ten miles of the Project Area.

CNDDDB, BIOS, and CCH queries were performed for plant species which meet the criteria described above. The results of the queries were used to determine the most current known occurrences closest to the Project alignment. Additional information on the locations of special-status plant populations from past studies conducted within the Project Area were also utilized (BRC 2014).

Eight reference sites were identified for the botanical reference site monitoring (Figure 3). Reference site visits were only conducted within the known blooming periods of identified target species. Each reference site was surveyed during the week of April 26, 2016. When species were observed, the surveying biologist determined the population size, identified the habitat type and associated species, documented the plant’s phenology, and took representative photographs of the area.

5.0 RESULTS

5.1 BOTANICAL REFERENCE SITE MONITORING RESULTS

The following eight species were identified as target species for the botanical reference site monitoring:

- alkali mariposa-lily (*Calochortus striatus*)
- Clokey’s cryptantha (*Cryptantha clokeyi*)
- Mojave menodora (*Menodora spinescens* var. *mohavensis*)
- creamy blazing star (*Mentzelia tridentata*)
- Mojave monkey flower (*Mimulus Mojavensis*)
- white-margined beardtongue (*Penstemon albomarginatus*)
- Parish’s phacelia (*Phacelia parishii*)
- Parish’s popcorn flower (*Plagiobothrys parishii*)

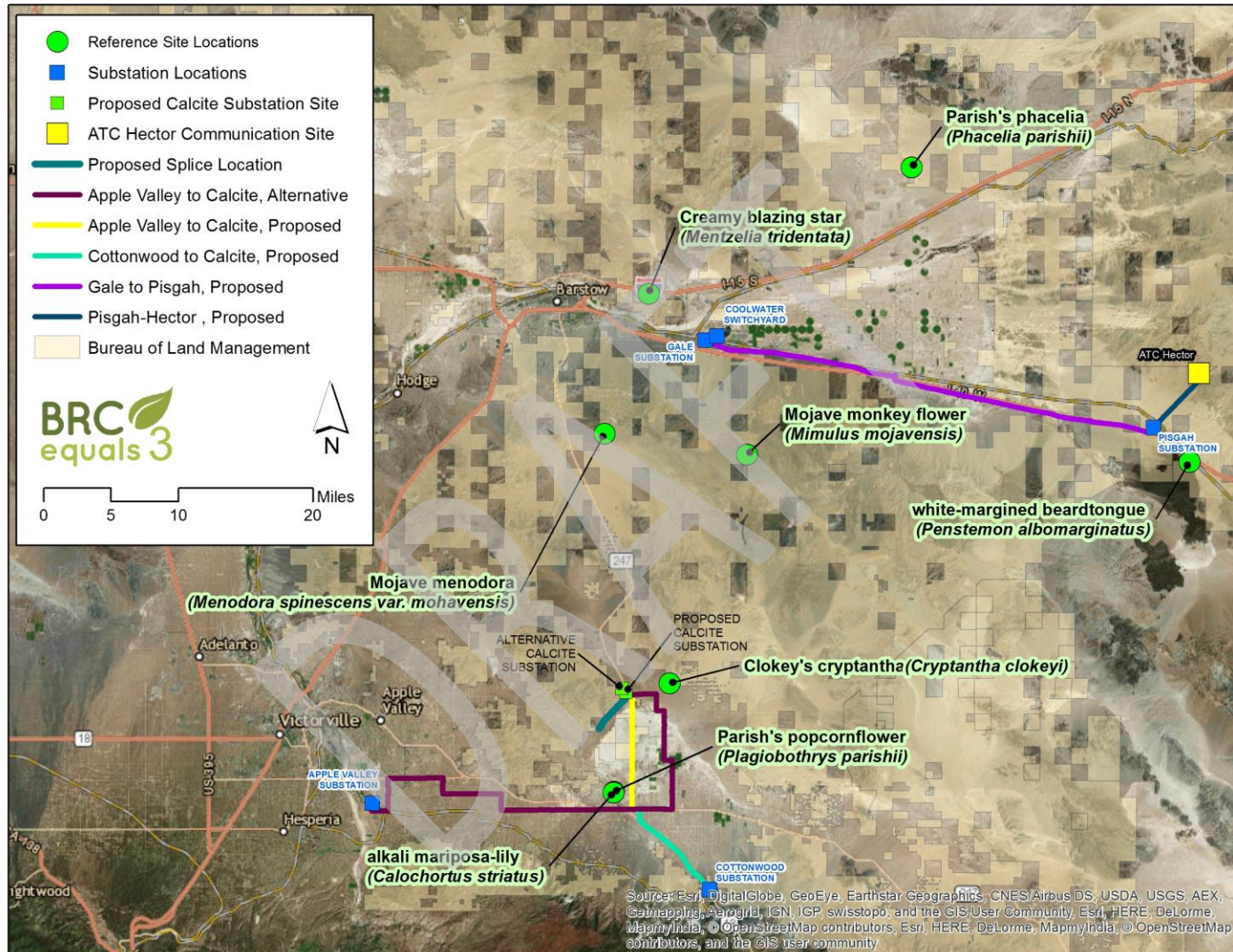


Figure 3. Reference site locations.

Although no CNDDDB occurrences of Mojave monkeyflower (*Mimulus Mojavensis*) occur within 3 miles of the Project Area, a reference site for Mojave monkeyflower was selected and visited after consulting with a BLM local expert (Larry LaPre, BLM 2016, pers. comm., 26 April).

During the reference site visits alkali mariposa-lily, Mojave menodora, Parish's phacelia, and Parish's popcorn flower were present and all in identifiable phenological states. Clokey's cryptantha, creamy blazing star, Mojave monkeyflower, and white-margined beardtongue were not observed to be present or were not identifiable at the selected reference site locations. Follow up reference site visits were not conducted in June as a result of June falling outside the known bloom period of the previously unobserved target plant species.

5.2 PLANT SPECIES

A total of 212 plant species were identified during surveys, including 20 non-native species and three special-status species. A complete list of plant species observed in the Project Area is provided in Attachment C.

5.3 SPECIAL-STATUS PLANT SPECIES

Three special-status plant species were observed during 2016 surveys including Borrego milkvetch (*Astragalus lentiginosus* var. *borreganus*), alkali mariposa-lily, and Utah vine milkweed (*Funastrum utahense*). Below are detailed descriptions of the special-status plant species that were observed as well as special-status species that are currently or were initially assessed to have a "Likely" potential to occur.

5.3.1 Alkali mariposa lily – CRPR 1B.2

Alkali mariposa lily is a perennial herb in the Liliaceae family. Its habitat requirements include mesic Shadscale Scrub, Creosote Bush–White Bursage Scrub, and Yerba Mansa Meadows with alkaline soils at elevations ranging from 70 to 1,595 meters amsl. This species generally blooms between April and June (CNDDDB 2016).

Alkali mariposa lily was observed during surveys within the Project Area (Attachment B, Attachment D - Photo 1). Thirty-five individuals were observed during the April/May survey. The individuals were observed on the southwest side of California Highway 18 within a *Yucca brevifolia*–*Larrea tridentata*–*Ambrosia dumosa*–*Eriogonum fasciculatum* Association and a *Salix exigua*–*Juncus* sp. Association, with the presence of yerba mansa (*Anemopsis californica*). The species was also observed at the selected reference site location just prior to the April/May survey. The species was not observed during the June surveys.

5.3.2 Borrego milkvetch – CRPR 4.3

Borrego milkvetch is an annual herb in the Fabaceae family. Its habitat requirements include sandy soils in Mojavean Desert Scrub and Sonoran Desert Scrub from 30 to 320 meters amsl. The species generally blooms from March to May (CNDDDB 2016).

Borrego milkvetch was observed at three locations during the surveys within the Project Area (Attachment B, Attachment D - Photo 2). The first observation was during the April/May survey, during which time two fruiting individuals were observed. The second observation was observed

during the June survey in a non-flowering vegetative state. All occurrences were observed in sandy to gravelly soils within a *Larrea tridentata*–*Ambrosia dumosa* Association.

5.3.3 Utah vine milkvetch – CRPR 4.2

Utah vine milkvetch is a perennial herb in the Apocynaceae family. Its habitat requirements include sand or gravelly soils located within Mojavean and Sonoran Desert Scrub vegetation communities from 100 to 1435 meters amsl. This species generally blooms from April to September (CNDDDB 2016).

Utah vine milkvetch was observed during surveys within the Project Area (Attachment B, Attachment D - Photo 3). One location with four living, non-flowering and ten desiccated individuals were observed. The individuals were observed along the northern telecom alignment north of Interstate 15 and northwest of Pisgah Road within a *Larrea tridentata*–*Ambrosia dumosa* Association. The species was observed during both the April/May and June survey events.

5.3.4 Clokey's cryptantha – CRPR 1B.2, BLM Sensitive

Clokey's cryptantha is an annual herb in the Boraginaceae family. It is generally found in Creosote Bush–White Bursage Scrub habitat at elevations of 725–1,365 meters amsl. The known blooming period for this species occurs in April (CNDDDB 2016).

Clokey's cryptantha was not observed during the survey or at the reference site location. It was assessed to have a 'Likely' potential as a result of the proximity of CNDDDB Occurrence #6, which was subsequently chosen as the reference site. Several species of *Cryptantha* collected at the site were taken to Rancho Santa Ana Botanical Garden to be keyed to confirm the absence of *C. clokeyi* from the reference site. The potential for this species' occurrence remains where suitable habitat exists within the Project Area.

5.3.5 Mojave menodora – CRPR 1B.2, BLM Sensitive

Mojave menodora is a shrub in the Oleaceae family. It is generally found on andesite gravel, rocky hillsides, and canyons in Creosote Bush–White Bursage Scrub habitat at elevations of 690–2,000 meters amsl. The known blooming period for this species is April to May (CNDDDB 2016).

Mojave menodora was not observed during the survey but was observed at the reference site location. A previous observation identified in 2014 by BioResource Consultants (BRC) was utilized as a reference site location (BRC 2014). Five individuals were observed to be identifiable at the reference site location with individual phenology ranging from 10% floral buds, 5% fruit, to 85% post fruit vegetative. Individuals were encountered within a creosote/white bursage community along a rocky slope near a small drainage.

This species was positively identified at the reference site location. The lack of its presence during surveys within the Project Area suggests that Mojave Menodora does not occur within the Project Area.

5.3.6 Creamy blazing star – CRPR 1B.3, BLM Sensitive

Creamy blazing star is an annual herb in the Losaceae family. It is generally found within rocky slopes gravelly, and sandy slopes in Creosote Bush–White Bursage Scrub habitat at elevations between 700–1,160 meters amsl. The known blooming period for this species is March–May (CNDDDB 2016).

Creamy blazing star was not observed during the survey or at the reference site location. It was assessed to have a ‘Likely’ potential as a result of the proximity of CNDDDB Occurrence #33, which was subsequently chosen as the reference site. The potential for this species’ occurrence remains where suitable habitat exists within the Project Area.

5.3.7 Mojave monkey flower – CRPR 1B.3, BLM Sensitive

Mojave monkey flower is an annual herb in the Phrymaceae family. It is generally found in gravelly banks of desert washes at elevations between 600–1,000 meters amsl. The known blooming period for this species is April–May (CNDDDB 2016).

Mojave monkey flower was not observed during the survey or at the reference site location. No CNDDDB records exist in 3 miles of the Project Area for this species but it was assessed to have a ‘Likely’ potential as a result of the proximity of CalFlora Record (GP4593)(CalFlora 2016) and personal communication with BLM botanists with local expertise (Larry LaPre, BLM 2016, pers. comm., 26 April). The potential for this species’ occurrence remains where suitable habitat exists within the Project Area.

5.3.8 White-margined beardtongue – CRPR 1B.1, BLM Sensitive

White-margined beardtongue is a perennial herb in the Plantaginaceae family. It is generally found in deep stabilized desert sand, in washes and along roadsides in desert dunes and desert wash, and Creosote Bush–White Bursage Scrub at elevations of 640–1,065 meters amsl. The known blooming period for this species occurs from March–May (CNDDDB 2016).

White-margined beardtongue was not observed during the survey or at the reference site location. It was assessed to have a ‘Likely’ potential and Rancho Santa Ana Record (RSA822497)(CalFlora 2016) was subsequently chosen as the reference site. The potential for this species’ occurrence remains where suitable habitat exists within the Project Area.

5.3.9 Parish’s phacelia – CRPR 1B.1, BLM Sensitive

Parish’s phacelia is an annual herb in the Boraginaceae family. It is generally found on dry lake margins, alkaline flats and slopes or on clay soils in Creosote Bush–White Bursage Scrub and within playa habitats at elevations of 540–1,200 meters amsl. The known blooming period for this species is April–July (CNDDDB 2016).

Parish’s phacelia was not observed during the survey but was observed at the reference site location. A University of California Riverside record (Specimen number UCR226404) (CCH 2016) was utilized as a reference site location. Six individuals were observed to be identifiable at the reference site location with individual phenology ranging from 15% flower, 75% fruit, 10% post fruit

vegetative. Individuals were encountered along a dry lake margin that was completely void of vegetation with the exception of Parish's phacelia.

This species was positively identified at the reference site location. The lack of its presence during surveys within the Project Area suggests that Parish's phacelia does not occur within the Project Area.

5.3.10 Parish's popcorn flower – CRPR 1B.1, BLM Sensitive

Parish's popcorn flower is an annual herb in the Boraginaceae family. It is generally found in alkaline, mesic areas of big sagebrush and Joshua tree woodland habitats at elevations of 750–1,400 meters amsl. The known blooming period for this species is March–November (CNDDDB 2016).

Parish's popcorn flower was not observed during the survey but was observed at the reference site location. A University of California Riverside record (Specimen number UCR 225931) (CCH 2016) was utilized as a reference site location. A large population of approximately 1,000 individuals was observed to be identifiable at the reference site location with individual phenology 100 percent in flower. The population was encountered in a seep with associate species including *Atriplex polycarpa*, *Suaeda moquinii*, *Calochortus striatus* and *Elocharis parishii*.

This species was positively identified at the reference site location. The lack of its presence during surveys within the Project Area suggests that Parish's popcorn flower does not occur within the Project Area.

6.0 DISCUSSION

Three special-status plant species, alkali mariposa-lily, Borrego milkvetch, and Utah vine milkweed, were observed within the Project Area during the 2016 botanical surveys.

While only three special-status plant species were observed during the focused botanical surveys, several additional special-status plant species are known to occur in the area and have suitable habitat along the Project alignment (Attachment A). The majority of these species are herbaceous annuals, dependent on annual rainfall and micro-habitat conditions that vary from year to year. Dry conditions, resulting from long-term drought, cause characteristically low herbaceous annual blooms (Sawyer et al. 2009). The special-status plant species with “Likely” and “Unlikely” probability of occurrence in the Project Area have a collective bloom period running from March through October. The focused botanical surveys described herein occurred during the portion of this broad bloom period optimal for annual species. Due to the timing of these focused surveys during consecutive drought years, surveys conducted during non-drought conditions may identify additional areas where special-status annual herbaceous plant species may occur (NCDC 2016b). Perennial herbs, shrubs, and subshrubs blooming outside of the survey window remain identifiable throughout the spring and summer seasons, both before and after their ideal bloom period.

Of the eight plant species selected for reference site monitoring, four species were observed during the reference site visits including, alkali mariposa-lily, Parish's popcorn flower, Parish's phacelia and Mojave menodora in April/May. The reference sites have similar habitat characteristics to the Project Area and they are located nearby. It is reasonable to presume that species observed within the botanical reference sites would be present and observable within the Project Area during the

same period. As such, negative findings during special-status plant surveys would indicate that these species are not present within the Project Area.

However, the absence of observations of some special-status plant species are not absolutely conclusive because: 1) rainfall within the desert can be highly variable even over small geographic areas; 2) although habitats types within the reference sites are similar to those present within the Project Area, small variations such a slope aspect, soil composition, and/or other factors can significantly impact the germination success of various plant species; and 3) seed banks for special-status species may be more robust within the botanical reference sites, which would increase the likelihood for successful germination within that area as compared to the Project Area.

DRAFT

7.0 REFERENCES

- Baldwin, B. G. [ed], Goldman, D. [ed], Keil, D. J., Patterson, R. [ed], Rosatti, T. J. [ed], Wilken, D. [ed], 2012. The Jepson Manual: Vascular Plants of California: Second Edition. University of California Press. Berkeley and Los Angeles, CA.
- Bureau of Land Management (BLM). 2015. Special Status Plants under the jurisdiction of the Barstow Field Office as of April 30, 2015. Barstow Field Office.
- BRC. 2014. Focused Special-Status Plant Supplemental Survey for the Coolwater-Lugo Transmission Project, San Bernardino County, California. June 2014.
- BRC Equals 3 (B3). 2016. Habitat Assessment for Calcite Substation Project, San Bernardino County, California. June 2016.
- CalFlora. 2016. The CalFlora Database: information on California plants for education, research and conservation [web application]. The CalFlora Database, Berkeley, California. <http://www.calflora.org/>. Accessed June 2016.
- California Department of Fish and Game (CDFG). 2008. California Interagency Wildlife Task Group. California Wildlife Habitat Relationship Software. Version 8.2 personal Computer program. Sacramento, CA
- California Department of Fish and Wildlife(CDFW). 2016. Biogeographic Information and Observation System (BIOS). Available online: <http://bios.dfg.ca.gov>. Accessed June, 2016.
- California Natural Diversity Database (CNDDB). 2016. Rarefind 5 [Internet]. California Department of Fish and Wildlife [v5.2.7].
- California Native Plant Society (CNPS). 2016. Inventory of Rare and Endangered Plants of California (seventh edition, online version). California Native Plant Society, Sacramento, CA. Available online: <http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi>. Accessed June, 2016.
- CNPS. 2015. The California Rare Plant Ranking System. California Native Plant Society. Sacramento. <http://www.cnps.org/cnps/rareplants/ranking.php>. Accessed June, 2016.
- Consortium of California Herbaria (CCH). 2016. Consortium database; data provided by the participants of the Consortium. Available online: <http://ucjeps.berkeley.edu/consortium/> Accessed June, 2016.
- Jepson Flora Project (eds.)(Jepson). 2016. Jepson eFlora, <http://ucjeps.berkeley.edu/IJM.html>, Accessed June, 2016.
- National Climatic Data Center (NCDC). 2016a. Climate Data Tools: 1981-2010 Normals for Victorville Pump Plant Field Station. National Oceanic and Atmospheric Administration, Asheville, NC. <http://www.ncdc.noaa.gov/cdo-web/datatools/normals>. Accessed June, 2016.
- NCDC. 2016b. Drought Severity Index by Division for June 25, 2016. National Oceanic and Atmospheric Administration, Asheville, NC.

http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/regional_monitoring/palmer.gif
Accessed June, 2016.

Sawyer, J., T. Keeler-Wolf, and J. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society. Sacramento, CA.

DRAFT

**ATTACHMENT A:
SPECIAL-STATUS PLANT SPECIES POTENTIAL TO OCCUR**

DRAFT

Table 2. CNDDDB Special-status plants potential to occur within 3 miles of the survey area.

Common Name (<i>Scientific Name</i>)	Species Status	Comments	Potential to Occur
PLANTS			
Cushenbury oxytheca (<i>Acanthoscyphus parishii</i> var. <i>goodmaniana</i>)	FE, CRPR 1B.1	Considered out of range. Found in singleleaf pinyon woodland with carbonate, or talus, or sandy soils. Found at elevations of 1,219–2,377 meters amsl. Species is only known from occurrences in San Bernardino County. Known blooming period is from May–October.	Does not occur
small-flowered androstephium (<i>Androstephium breviflorum</i>)	CRPR 2B.2	Habitat present with recent CCH records in area. Prefers bajadas and desert dunes and creosote bush–white bursage scrub. Found at elevations of 1,219–2,377 meters amsl. Blooming period is from March–April	Likely
Cushenbury milk-vetch (<i>Astragalus albens</i>)	FE, CRPR 1B.1	Marginal habitat present and no recent CNDDDB records. Not observed during survey. Found in Joshua tree woodland, creosote bush–white bursage scrub, and singleleaf pinyon woodland habitats with granitic or carbonate soils. Found at elevations from 1200-1900 meters amsl. Blooming period is from March–June.	Unlikely
San Bernardino milk-vetch (<i>Astragalus bernardinus</i>)	CRPR 1B.2	Considered out of species range. Found in singleleaf pinyon woodland and Joshua tree woodland habitats with granitic or carbonate soils. Found at elevations from 900-2000 meters amsl. Blooming period is from April–June.	Does not occur
Borrego milk-vetch <i>Astragalus lentiginosus</i> var. <i>borreganus</i>	CRPR 4.3	Suitable habitat present, observed during surveys. Found in sandy flats and semi-stabilized dunes within Mojavean desert scrub. Found at elevations from 30-320 meters amsl. Blooming period is from Mar-May.	Observed
pinyon rockcress (<i>Boechnera dispar</i>)	CRPR 2B.3	Considered out of range. No suitable habitat present. Prefers granitic, gravelly slopes & mesas in Joshua tree woodland, creosote bush–white bursage scrub, singleleaf pinyon woodland. Found at elevations 1,200–2,540 meters amsl. Blooming period is from March–June.	Does not occur
Shockley's rockcress (<i>Boechnera shockleyi</i>)	CRPR 2B.2	Considered out of range. No Suitable habitat present. Found in pinyon-juniper woodlands with rocky or gravelly soils at elevations of 875–2,310 meters amsl. Known blooming period is from May–June.	Does not occur
alkali mariposa-lily (<i>Calochortus striatus</i>)	CRPR 1B.2	Suitable habitat present, species observed during survey and at reference site. Found in mesic allscale scrub, creosote bush–white bursage scrub, yerba mansa meadows habitats with alkaline soils. Found at elevations of 70–1,595 meters amsl. Known blooming period of April–June.	Occurs

Common Name (Scientific Name)	Species Status	Comments	Potential to Occur
white pygmy-poppy (<i>Canbya candida</i>)	CRPR 4.2	Suitable habitat present but no recent CNDDDB records in the area. Not observed during survey. Found in sandy places in Joshua tree woodland, creosote bush–white bursage scrub, and singleleaf pinyon woodland. Found at elevations of 610–1,200 meters amsl. Known blooming period April–September.	Unlikely
Emory's crucifixion-thorn (<i>Castela emoryii</i>)	CRPR 2B.2	Suitable habitat present with recent CCH records in area. Not observed during survey. Occurs in areas of creosote bush–white bursage scrub, playas, brittlebush scrub habitats with gravelly soils. Found at elevations of 90-670 meters amsl. Known blooming period of April–September.	Likely
Clokey's cryptantha (<i>Cryptantha clokeyi</i>)	BLMS, CRPR 1B.2	Suitable habitat present with recent CNDDDB record in area. Not observed during survey or at selected reference site location. Found in Creosote Bush–White Bursage Scrub habitat at elevations of 725–1,365 meters amsl. Known blooming period of April.	Likely
purple-nerve cymopterus <i>Cymopterus multinervatus</i>	CRPR 2B.2	Suitable habitat present with recent CCH records in area. Not observed during survey. Found in Creosote Bush–White Bursage Scrub and singleleaf pinyon woodland habitats with sandy or gravelly soils at elevations of 790–1,800 meters amsl. Known blooming period is March–April.	Likely
Salina Pass wild-rye (<i>Elymus salina</i>)	CRPR 2B.3	No suitable habitat present. Found in rocky areas of singleleaf pinyon woodland at elevations of 1,350–2,135 meters amsl. Known blooming period is May–June.	Does not occur
Parish's daisy (<i>Erigeron parishii</i>)	FT, CRPR 1B.1	No suitable habitat present. Prefers limestone mountain slopes; often associated with drainages. Sometimes on granite in Creosote Bush–White Bursage Scrub and singleleaf pinyon woodland habitats at elevation of 800–2,000 meters amsl. . Known blooming period is May–August.	Does not occur
Cushenbury buckwheat (<i>Eriogonum ovalifolium</i> var. <i>vineum</i>)	FE, CRPR 1B.1	Considered out of species range. Prefers limestone mountain slopes in Joshua tree woodland, creosote bush–white bursage scrub, and singleleaf pinyon woodland habitats. Found at elevations of 1,400–2,440 meters amsl. Known blooming period is May–August.	Does not occur
Utah vine milkvetch (<i>Funastrum utahense</i>)	CRPR 4.2	Suitable habitat present, observed during surveys. Found in sandy or gravelly sites in the desert. 100-1435 amsl. Known blooming period is April - September.	Occurs
Mojave menodora (<i>Menodora spinescens</i> var. <i>varmohavensis</i>)	BLMS, CRPR 1B.2	Suitable habitat present. Species not observed within Project Area but observed at reference site location. Positive identification of this species at the reference site location and a lack of its presence during surveys suggest species does not occur within the Project Area. Occurs on andesite gravel, rocky hillsides, and canyons in creosote bush–white bursage scrub. Found at elevations of 690–2,000 meters amsl. Known blooming period is April-May.	Does not occur (Formerly Likely)

Common Name (Scientific Name)	Species Status	Comments	Potential to Occur
Darlington's blazing star (<i>Mentzelia puberula</i>)	CRPR 2B.2	Suitable habitat present but no recent records in area. Prefers sandy crevices in cliffs or on rocky slopes within creosote bush–white bursage scrub. Found at elevations of 90–1,280 meters amsl. Known blooming period is March–May.	Unlikely
creamy blazing star (<i>Mentzelia tridentata</i>)	BLMS, CRPR 1B.3	Suitable habitat present with recent CCH records in area. Not observed during surveys or at reference site location. Prefers rocky slopes gravelly, and sandy slopes in Creosote Bush–White Bursage Scrub habitat. Found at elevation of 700–1,160 meters amsl. Known blooming period is March–May.	Likely
Mojave monkeyflower (<i>Mimulus mohavensis</i>)	BLMS, CRPR 1B.2	Suitable habitat present with recent CCH record in area. Not observed during surveys or at reference site location. Prefers gravelly banks of desert washes. Found at elevation of 600–1000 meters amsl. Known blooming period is April–May.	Likely
white-margined beardtongue (<i>Penstemon albomarginatus</i>)	BLMS, CRPR 1B.1	Suitable habitat present with recent CCH records in area. Not observed during surveys or at reference site location. Prefers deep stabilized desert sand, in washes and along roadsides in desert dunes and desert wash, and creosote bush–white bursage scrub. Found at elevations of 640–1,065 meters amsl. Known blooming period is March–May.	Likely
Parish's phacelia (<i>Phacelia parishii</i>)	BLMS, CRPR 1B.1	Suitable habitat present. Species not observed within Project Area but observed at reference site location. Positive identification of this species at the reference site location and a lack of its presence during surveys suggest this species does not occur within the Project Area. Found on dry lake margins, alkaline flats and slopes or on clay soils in Creosote Bush–White Bursage Scrub and playa habitats. Occurs at elevations of 540–1200 meters. Known blooming period is April–July.	Does not occur (Formerly Likely)
Parish's popcornflower (<i>Plagiobothrys parishii</i>)	CRPR 1B.1	Suitable habitat present. Species not observed within Project Area but observed at reference site location. Positive identification of this species at the reference site location and a lack of its presence during surveys suggest this species does not occur within the Project Area. Occurs on alkaline, mesic areas of big sagebrush and Joshua tree woodland habitats at elevations of 750–1,400 meters amsl. Known blooming period is March–November.	Does not occur (Formerly Likely)
intermountain milkwort (<i>Polygala intermontana</i>)	CRPR 2B.1	Considered out of species range. Occurs in singleleaf pinyon woodland habitats at elevations of 2,010–3,080 meters. Known blooming period is June–July.	Does not occur
Parish's alkali grass (<i>Puccinellia parishii</i>)	BLMS, CRPR 1B.1	Marginal habitat present with CCH recent records in area, not observed during surveys. Occurs in yerba mansa meadows habitats at elevations of 700–1,000 meters amsl. Known blooming period is April–May.	Unlikely

Common Name (Scientific Name)	Species Status	Comments	Potential to Occur
California alkali grass (<i>Puccinellia simplex</i>)	CRPR 1B.2	Marginal habitat present and no recent records, not observed during surveys. Prefers alkaline, vernal mesic sinks, flats, and lake margins in yerba mansa meadows, allscale scrub, and annual grasslands, and vernal pools at elevations ranging from 2–930 meters amsl. Known blooming period is March–May.	Unlikely
Latimer's woodland-gilia (<i>Saltugilia latimeri</i>)	BLMS, CRPR1B.2	Marginal suitable habitat present and no recent records. Found in chaparral, Mojavean desert scrub, pinyon juniper woodland. habitats with rocky or sandy soils at elevations of 400–1,900 meters amsl. Known blooming period March–June.	Unlikely
salt spring checkerbloom (<i>Sidalcea neomexicana</i>)	CRPR 2B.2	Marginal habitat present with recent CCH records in area. Not observed during surveys. Found in Alkaline springs, marshes. Prefers alkaline and mesic soils of black sage scrub, singleleaf pinyon woodland, creosote bush–white bursage scrub, and playa habitats at elevations of 15–1,530 meters. Known blooming period is March–June.	Unlikely

Status:

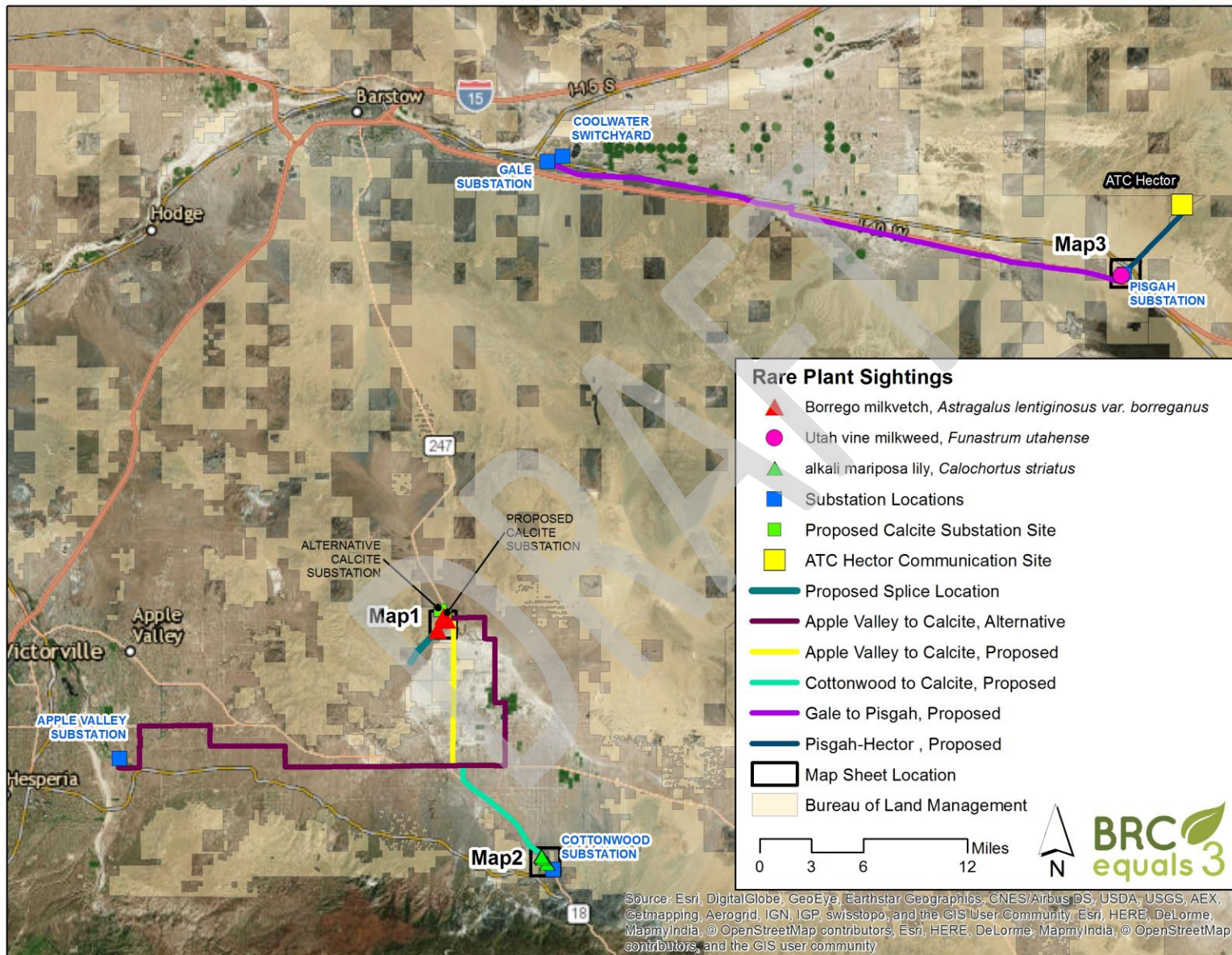
FE = Federally Endangered
 FT = Federally Threatened
 BLMS = BLM Sensitive

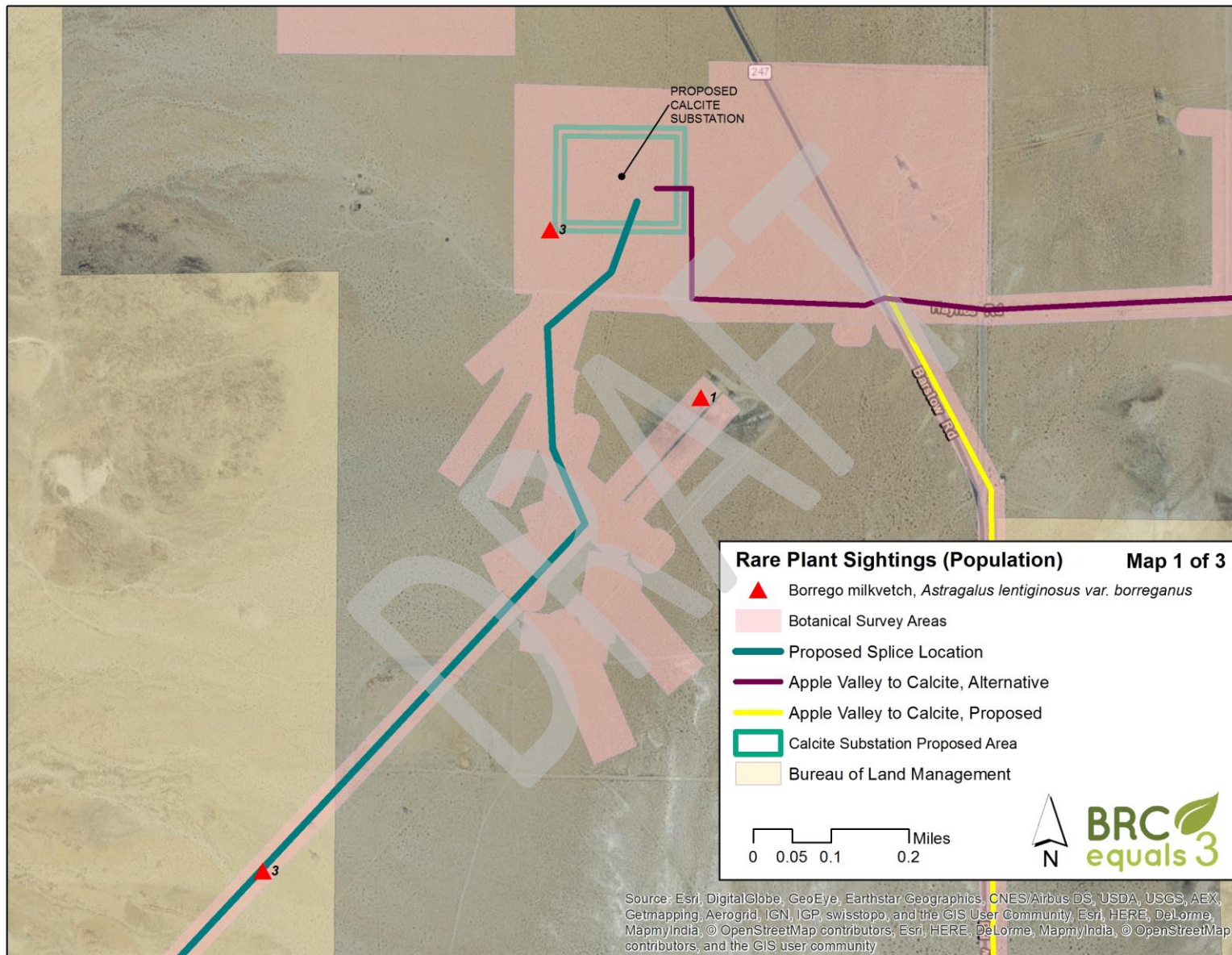
California Rare Plant Rank:

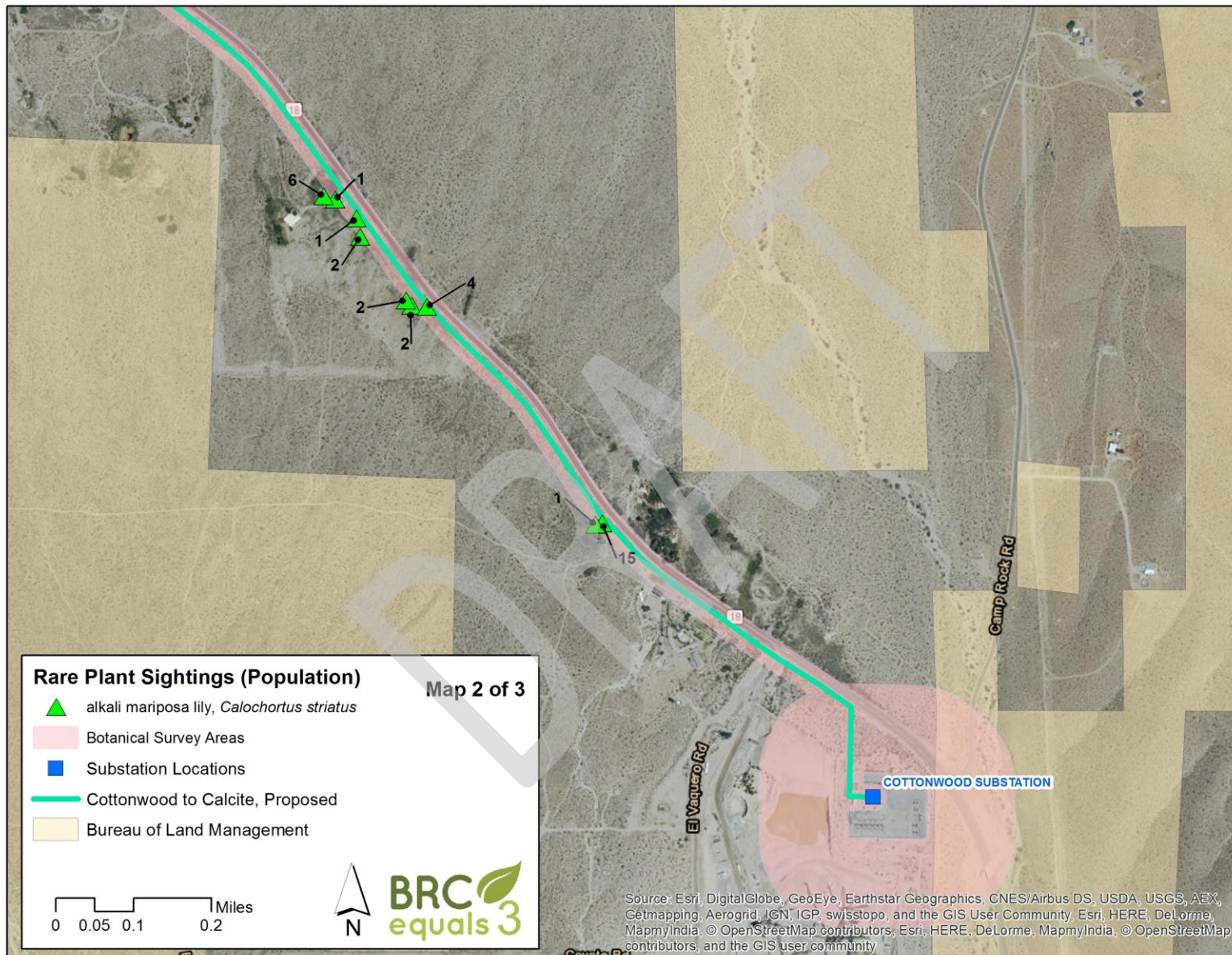
1B = Rare or Endangered in California and elsewhere
 2B = Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
 4 = Plants of limited distribution - Watch list
 .1 = Seriously endangered in California (>80% of occurrences threatened)
 .2 = Fairly endangered in California (20-80% occurrences threatened)
 .3 = Not very endangered in California (<20% of occurrences threatened) threats known)

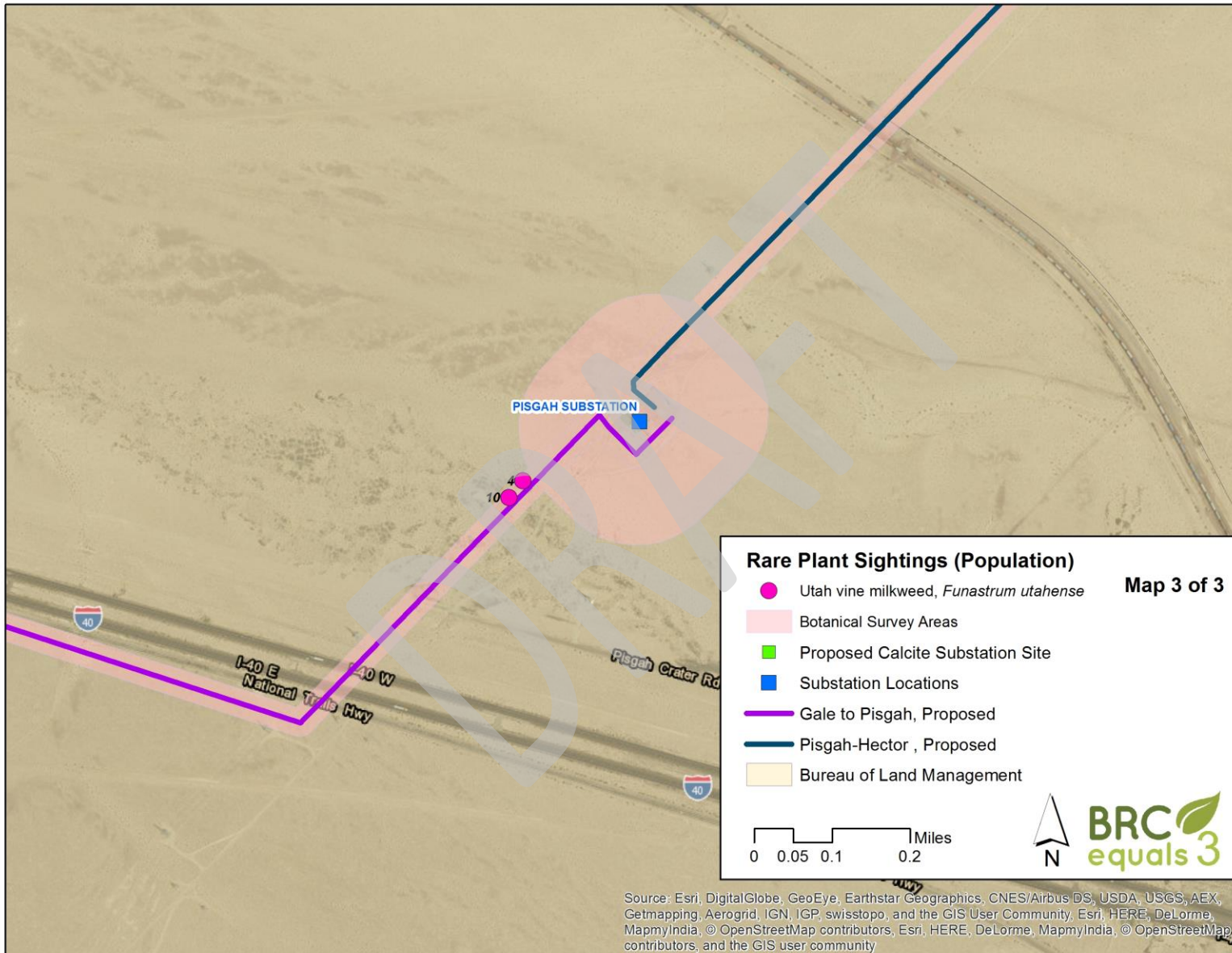
**ATTACHMENT B:
PROJECT SURVEY AREA AND LOCATION OF SPECIAL STATUS PLANT
SPECIES OBSERVED**

DRAFT









**ATTACHMENT C:
PLANT SPECIES OBSERVED IN THE PROJECT AREA**

DRAFT

Table 3. Plant species observed during 2016 botanical surveys.

Scientific Name	Common Name	Family	Native / Non-Native
<i>Abronia villosa</i> var. <i>villosa</i>	desert sand verbena	Nyctaginaceae	Native
<i>Aamptopappus sphaerocephalus</i>	goldenheads	Asteraceae	Native
<i>Achnatherum hymenoides</i>	Indian rice grass	Poaceae	Native
<i>Ailanthus altissima</i>	tree of heaven	Simaroubaceae	Non-Native
<i>Aliciella latifolia</i>	broadleaf gilia	Polemoniaceae	Native
<i>Allionia incarnata</i>	trailing allionia	Nyctaginaceae	Native
<i>Allium fimbriatum</i>	wild onion	Alliaceae	Native
<i>Ambrosia acanthicarpa</i>	burrweed	Asteraceae	Native
<i>Ambrosia dumosa</i>	white bursage	Asteraceae	Native
<i>Ambrosia psilostachya</i>	western ragweed	Asteraceae	Native
<i>Ambrosia salsola</i>	burrowbush	Asteraceae	Native
<i>Amsinckia tessellata</i>	fiddleneck	Boraginaceae	Native
<i>Anemopsis californica</i>	yerba mansa	Saururaceae	Native
<i>Asclepias erosa</i>	desert milkweed	Apocynaceae	Native
<i>Astragalus lentiginosus</i>	freckled milkvetch	Fabaceae	Native
<i>Astragalus lentiginosus</i> var. <i>borreganus</i>	Borrego milkvetch	Fabaceae	Native
<i>Atriplex canescens</i>	fourwing saltbush	Chenopodiaceae	Native
<i>Atriplex confertifolia</i>	shadscale	Chenopodiaceae	Native
<i>Atriplex lentiformis</i>	big saltbush	Chenopodiaceae	Native
<i>Atriplex polycarpa</i>	allscale	Chenopodiaceae	Native
<i>Atriplex hymenlytra</i>	desert holly	Chenopodiaceae	Native
<i>Avena fatua</i>	wild oat	Poaceae	Non-Native
<i>Baileya pleniradiata</i>	wooly marigold	Asteraceae	Native
<i>Bebbia juncea</i> var. <i>aspera</i>	sweetbush	Asteraceae	Native
<i>Brassica nigra</i>	black mustard	Brassicaceae	Non-Native
<i>Brassica tournefortii</i>	Sahara mustard	Brassicaceae	Non-Native

Scientific Name	Common Name	Family	Native / Non-Native
<i>Brickellia atractyloides</i>	spearleaf brickelbush	Asteraceae	Native
<i>Brickellia desertorum</i>	desert brickelbush	Asteraceae	Native
<i>Bromus madritensis</i>	red brome	Poaceae	Non-Native
<i>Bromus tectorum</i>	cheatgrass	Poaceae	Non-Native
<i>Caesalpinia gilliesii</i>	bird of paradise	Fabaceae	Non-Native
<i>Calochortus striatus</i>	alkali mariposa-lily	Liliaceae	Native
<i>Chaenactis Carphoclinia</i> var. <i>carpoclinia</i>	pebble pincushion	Asteraceae	Native
<i>Castilleja chromosa</i>	desert paint brush	Orobanchaceae	Native
<i>Catilleja linarifolia</i>	Wyoming paint brush	Orobanchaceae	Native
<i>Chaenactis fremontii</i>	pincusion flower	Asteraceae	Native
<i>Chaenactis stevioides</i>	desert pincushion	Asteraceae	Native
<i>Chilopsis linearis</i>	desert willow	Bignoniaceae	Native
<i>Chorizanthe brevicornu</i>	rigid spiny herb	Polygonaceae	Native
<i>Chorizanthe rigida</i>	rigid spineflower	Polygonaceae	Native
<i>Chrysothamnus viscidiflorus</i>	yellow rabbit brush	Asteraceae	Native
<i>Chylismia brevipes</i>	yellow cups	Onagraceae	Native
<i>Chylismia campestris</i>	Mojave suncup	Onagraceae	Native
<i>Chylismia claviformis</i> ssp. <i>claviformis</i>	clavate fruited primrose	Onagraceae	Native
<i>Circium mohavense</i>	Mojave thistle	Asteraceae	Native
<i>Cleomella obtusifolia</i>	bluntleaf stinkweed	Cleomaceae	Native
<i>Coleogyne ramosissima</i>	blackbrush	Rosaceae	Native
<i>Croton californicus</i>	croton	Euphorbiaceae	Native
<i>Cryptantha angustifolia</i>	panamint cryptantha	Boraginaceae	Native
<i>Cryptantha barbiger</i>	bearded cryptantha	Boraginaceae	Native
<i>Cryptantha circumscissa</i>	forget-me-not	Boraginaceae	Native
<i>Cryptantha nevadensis</i>	Nevada forget-me-not	Boraginaceae	Native
<i>Cryptantha pectocarya</i>	winged nut cryptantha	Boraginaceae	Native
<i>Cucurbita palmata</i>	coyote gourd	Cucurbitaceae	Native
<i>Cuscuta nevadensis</i>	desert dodder	Convolvulaceae	Native

Scientific Name	Common Name	Family	Native / Non-Native
<i>Cylindropuntia echinocarpa</i>	golden cholla	Cactaceae	Native
<i>Cylindropuntia ramosissima</i>	branched pencil cholla	Cactaceae	Native
<i>Cynodon dactylon</i>	Bermuda grass	Poaceae	Non-Native
<i>Dalea mollis</i>	hairy prairie clover	Fabaceae	Native
<i>Dalea mollissima</i>	downy dalea	Fabaceae	Native
<i>Dasyochloa pulchella</i>	fluffgrass	Poaceae	Native
<i>Datura discolor</i>	desert thornapple	Solanaceae	Native
<i>Delphinium parishii</i>	Parish's larkspur	Ranunculaceae	Native
<i>Descurainia pinnata</i>	tansy mustard	Brassicaceae	Native
<i>Descurainia sophia</i>	flix weed	Brassicaceae	Native
<i>Dieteria canescens</i>	hoary aster	Asteraceae	Native
<i>Distichlis spicata</i>	saltgrass	Poaceae	Native
<i>Ditaxis neomexicana</i>	common ditaxis	Euphorbiaceae	Native
<i>Echinocactus polycephalus</i>	cottontop cactus	Cactaceae	Native
<i>Echinocerus engelmannii</i>	Engelmann's hedgehog	Cactaceae	Native
<i>Encelia actonii</i>	Acton encelia	Asteraceae	Native
<i>Encelia farinosa</i>	brittlebush	Asteraceae	Native
<i>Encelia frutescens</i>	rayless brittlebush	Asteraceae	Native
<i>Ephedra nevadensis</i>	Nevada ephedra	Ephedraceae	Native
<i>Ephedra viridis</i>	Mormon tea	Ephedraceae	Native
<i>Ephedra trifurca</i>	long-leafed ephedra	Ephedraceae	Native
<i>Eremalche exilis</i>	white mallow	Malvaceae	Native
<i>Eremalche rotundifolia</i>	desert five spot	Malvaceae	Native
<i>Eremothera boothii</i> ssp. <i>condensata</i>	desert lantern	Onagraceae	Native
<i>Eremothera reducta</i>	narrow-leaved primrose	Onagraceae	Native
<i>Eriastrum eremicum</i>	desert wooly star	Polemoniaceae	Native
<i>Ericameria laricifolia</i>	turpentine bush	Asteraceae	Native
<i>Ericameria nauseosa</i>	rubber rabbitbrush	Asteraceae	Native
<i>Eriodictyon trichocalyx</i>	hairy yerba santa	Boraginaceae	Native

Scientific Name	Common Name	Family	Native / Non-Native
<i>Eriogonum brachypodum</i>	Parry's buckwheat	Polygonaceae	Native
<i>Eriogonum deflexum</i> var. <i>defleum</i>	flatcrown buckwheat	Polygonaceae	Native
<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	California buckwheat	Polygonaceae	Native
<i>Eriogonum inflatum</i>	desert trumpet	Polygonaceae	Native
<i>Eriogonum maculatum</i>	angle stemmed buckwheat	Polygonaceae	Native
<i>Eriogonum midularium</i>	whisk broom	Polygonaceae	Native
<i>Eriogonum reniforme</i>	kidney leaf buckwheat	Polygonaceae	Native
<i>Eriogonum tricopes</i>	little desert buckwheat	Polygonaceae	Native
<i>Eriophyllum wallacei</i>	Wallace's eriophyllum	Asteraceae	Native
<i>Erodium cicutarium</i>	Storksbill filaree	Geraniaceae	Non-Native
<i>Erodium texanum</i>	desert heron's bill	Geraniaceae	Native
<i>Eschscholzia californica</i>	California poppy	Papaveraceae	Native
<i>Eschscholzia minutiflora</i>	pygmy poppy	Papaveraceae	Native
<i>Eucnide urens</i>	desert bush nettle	Loasaceae	Native
<i>Euphorbia albomarginata</i>	rattlesnake spruce	Ephedraceae	Native
<i>Euphorbia polycarpa</i>	smallseed sandmat	Ephedraceae	Native
<i>Ferocactus acanthodes</i>	California barrel cactus	Cactaceae	Native
<i>Funastrum utahense</i>	Utah vine milkweed	Apocynaceae	Native
<i>Geraea canescens</i>	hairy desert sunflower	Asteraceae	Native
<i>Gilia</i> sp.	gilia	Polemoniaceae	Native
<i>Grayia spinosa</i>	hopsage	Chenopodiaceae	Native
<i>Gutierrezia microcephala</i>	matchweed	Asteraceae	Native
<i>Isocoma aradenia</i> var. <i>eremophila</i>	solitary-leaved alkali goldenbush	Asteraceae	Native
<i>Heliotropium curassavicum</i>	Chinese parsley	Boraginaceae	Native
<i>Hesperoyucca whipplei</i>	chaparral yucca	Agavaceae	Native
<i>Hilaria rigida</i>	big galleta grass	Poaceae	Native
<i>Hirschfeldia incana</i>	Sahara mustard	Brassicaceae	Non-Native
<i>Hordeum murinum</i> ssp. <i>glaucum</i>	blue foxtail	Poaceae	Non-Native
<i>Iva axillaris</i>	poverty weed	Asteraceae	Native

Scientific Name	Common Name	Family	Native / Non-Native
<i>Juncus</i> sp.	rush	Juncaceae	Native
<i>Juniperus californica</i>	California juniper	Cupressaceae	Native
<i>Krameria bicolor</i>	white ratany	Krameriaceae	Native
<i>Krameria erecta</i>	little leaved ratany	Krameriaceae	Native
<i>Krascheninnikovia lanata</i>	winter fat	Chenopodiaceae	Native
<i>Langloisia setosissima</i> ssp. <i>punctata</i>	lilac sunbonnet	Polemoniaceae	Native
<i>Larrea tridentata</i>	creosote bush	Zygophyllaceae	Native
<i>Lasthenia californica</i>	goldfields	Asteraceae	Native
<i>Lepidium flavum</i>	yellow pepper grass	Brassicaceae	Native
<i>Lepidium fremontii</i>	bush peppergrass	Brassicaceae	Native
<i>Lepidium nitidum</i>	peppergrass	Brassicaceae	Native
<i>Lepidospartum squamatum</i>	California broomsage	Asteraceae	Native
<i>Linanthus parryae</i>	Parry's linanthus	Polemoniaceae	Native
<i>Loeseliastrum mathewsii</i>	desert calico	Polemoniaceae	Native
<i>Lupinus shockleyi</i> .	Shockley lupine	Fabaceae	Native
<i>Lycium andersonii</i>	Anderson's thorn bush	Solanaceae	Native
<i>Lycium cooperii</i>	Cooper's box thorn	Solanaceae	Native
<i>Malacothrix glabrata</i>	desert dandelion	Asteraceae	Native
<i>Mammillaria tetracistra</i>	common fishhook cactus	Cactaceae	Native
<i>Mentzelia albicaulis</i>	small-flowered blazing star	Loasaceae	Native
<i>Mentzelia laevicaulis</i>	giant blazing star	Loasaceae	Native
<i>Mesembryanthemum crystallinum</i>	common iceplant	Aizoaceae	Non-native
<i>Mimulus bigelovii</i>	Bigelow's monkeyflower	Phrymaceae	Native
<i>Mirabilis multiflora</i>	desert four-o'clock	Nyctaginaceae	Native
<i>Mohavea breviflora</i>	lesser mohavea	Plantaginaceae	Native
<i>Mohavea confertiflora</i>	ghost flower	Plantaginaceae	Native
<i>Monoptilon bellidiforme</i>	small desert star	Asteraceae	Native
<i>Muhlenbergia asperfolia</i>	scratchgrass	Poaceae	Native
<i>Myriopteris parryi</i>	Parry's lip fern	Pteridaceae	Native

Scientific Name	Common Name	Family	Native / Non-Native
<i>Nama demissum</i>	purple mat	Hydrophyllaceae	Native
<i>Nicolletia occidnetallis</i>	Mojave sand plant	Asteraceae	Native
<i>Nicotiana obtusifolia</i>	desert tobacco	Solanaceae	Native
<i>Oenothera californica</i>	evening primrose	Onagraceae	Native
<i>Oligomeris linifolia</i>	lineleaf whitepuff	Resedaceae	Native
<i>Opuntia basilaris</i> ssp. <i>basilaris</i>	beavertail cactus	Cactaceae	Native
<i>Opuntia echinocarpa</i>	silver cholla	Cactaceae	Native
<i>Oxytheca perfoliata</i>	roundleaf oxytheca	Polygonaceae	Native
<i>Parkinsonia aculeata</i>	Mexican palo verde	Fabaceae	Native
<i>Pectis papposa</i>	chinch weed	Asteraceae	Native
<i>Pectocarya penicillata</i>	Baja pectocarya	Boraginaceae	Native
<i>Pectocarya platycarpa</i>	broad nutted comb bur	Boraginaceae	Native
<i>Pectocarya setosa</i>	moth combseed	Boraginaceae	Native
<i>Peritoma arborea</i> var. <i>angustata</i>	bladderpod	Cleomaceae	Native
<i>Perityle emoryi</i>	Emory's rock daisy	Asteraceae	Native
<i>Petalonyx thurberi</i>	sandpaper plant	Loasaceae	Native
<i>Peucephyllum schottii</i>	desert fir	Asteraceae	Native
<i>Phacelia distans</i>	common phacelia	Boraginaceae	Native
<i>Phacelia campanularia</i>	desert cantebury bell	Boraginaceae	Native
<i>Phacelia crenulata</i> var. <i>ambigua</i>	heliotrope phacelia	Boraginaceae	Native
<i>Phacelia fremontii</i>	Fremont's phacelia	Boraginaceae	Native
<i>Pholistoma membranaceum</i>	white fiesta flower	Boraginaceae	Native
<i>Physalis crassifolia</i>	thick leaf ground cherry	Solanaceae	Native
<i>Plantago ovata</i>	desert plantain	Plantaginaceae	Native
<i>Plantago ovata</i> var. <i>insularis</i>	desert plantain	Plantaginaceae	Native
<i>Pleurocoronis pluriseta</i>	arrow leaf	Asteraceae	Native
<i>Populus fremontii</i>	Fremont cottonwood	Salicaceae	Native
<i>Prosopis glandulosa</i>	honey mesquite	Fabaceae	Native
<i>Prunus fasciculata</i>	desert almond	Rosaceae	Native

Scientific Name	Common Name	Family	Native / Non-Native
<i>Psorothamnus schottii</i>	indigo bush	Fabaceae	Native
<i>Psorothamnus spinosus</i>	smoketree	Fabaceae	Native
<i>Pterostegia drymarioides</i>	fairy mist	Polygonaceae	Native
<i>Purshia tridentate</i> var. <i>glandulosa</i>	antelope brush	Rosaceae	Native
<i>Rafinesquia neomexicana</i>	desert chicory	Asteraceae	Native
<i>Robinia neomexicana</i>	desert locust	Fabaceae	Native
<i>Salix exigua</i>	narrow-leaved willow	Salicaceae	Native
<i>Salix laevigata</i>	red willow	Salicaceae	Native
<i>Salix lasiolepis</i>	arroyo willow	Salicaceae	Native
<i>Salsola tragus</i>	Russian thistle	Chenopodiaceae	Non-Native
<i>Salvia columbariae</i>	chia sage	Lamiaceae	Native
<i>Salvia mohavensis</i>	Mohave sage	Lamiaceae	Native
<i>Sambucus nigra</i>	black elderberry	Adoxaceae	Native
<i>Schinus molle</i>	Peruvian pepper tree	Anacardiaceae	Non-Native
<i>Schismus barbatus</i>	Mediterranean grass	Poaceae	Non-native
<i>Senegalia greggii</i>	cat claw	Fabaceae	Native
<i>Senna armata</i>	desert senna	Fabaceae	Native
<i>Sisymbrium irio.</i>	London rocket	Brassicaceae	Non-native
<i>Solanum elaeagnifolium</i>	horse nettle	Solanaceae	Non-native
<i>Sphaeralcea ambigua</i>	desert globe mallow	Malvaceae	Native
<i>Stanleya pinnata</i>	Prince's plume	Brassicaceae	Native
<i>Stephanomeria exigua</i> ssp. <i>exigua</i>	mitra	Asteraceae	Native
<i>Stephanomeria pauciflora</i>	desert straw	Asteraceae	Native
<i>Stipa hymenoides</i>	Indian ricegrass	Poaceae	Native
<i>Stipa speciosa</i>	desert needle	Poaceae	Native
<i>Suaeda moquinii</i>	Mojave seablite	Chenopodiaceae	Native
<i>Syntrichopappus freemontii</i>	false woolly daisy	Asteraceae	Native
<i>Tamarix</i> sp.	salt cedar	Tamaricaceae	Non-Native
<i>Tauschia parishii</i>	Parish's tauschia	Apiaceae	Native

Scientific Name	Common Name	Family	Native / Non-Native
<i>Tetradymia axillaris</i> var. <i>longispina</i>	catclaw horsebush	Asteraceae	Native
<i>Tidestromia suffruticosa</i> var. <i>oblongifolia</i>	honeysweet	Amaranthaceae	Native
<i>Tiquilia plicata</i>	plicate coldenia	Boraginaceae	Native
<i>Trianthema portulacastrum</i>	desert horseplane	Aizoaceae	Native
<i>Tribulus terrestris</i>	puncture vine	Zygophyllaceae	Non-Native
<i>Typha latifolia</i>	broad-leaved cattail	Potamogetonaceae	Native
<i>Vitis californica</i>	southern California grape	Vitaceae	Native
<i>Vulpia myuros</i>	rattail fescue	Poaceae	Non-Native
<i>Xylorhiza tortifolia</i> var. <i>tortifolia</i>	Mojave woodystar	Asteraceae	Native
<i>Yucca brevifolia</i>	Joshua tree	Agavaceae	Native
<i>Yucca schidigera</i>	Mojave yucca	Agavaceae	Native

**ATTACHMENT D:
PHOTOS OF SPECIAL-STATUS PLANT SPECIES OBSERVED IN THE
PROJECT AREA**

DRAFT

Photo 1. Individual alkali mariposa-lily in flower observed directly west of Hwy 18 within the Project Area.



Photo 2. Borrego's milkvetch with fruit observed west of Hwy 247 within the Project Area.



Photo 3. Utah vine milkweed vegetation observed along northern telecom, within the Project Area.



Appendix D-6

ELM Project Special-Status Plant Report II

Special-Status Plant Species Survey Report II
for the
Eldorado-Lugo-Mohave Series Capacitor Project

Prepared for:



Prepared by:



June 2020

DRAFT

TABLE OF CONTENTS

1 – INTRODUCTION..... 1

2 – PROJECT DESCRIPTION 1

 2.0 Project Location1

 2.1 Project Components1

 2.2 Right-of-Way Requirements2

 2.3 Construction Methods5

 2.4 Land Disturbance Summary5

 2.5 Construction Schedule5

3 – ENVIRONMENTAL SETTING 5

 3.0 Land Use and Management5

 3.1 Climate6

 3.2 Topography7

 3.3 Hydrology7

 3.4 Soils7

 3.5 Vegetation Communities and Land Covers10

4 – SURVEY HISTORY AND TIMING 22

 4.0 2016.....22

 4.1 2017.....23

 4.2 2018.....23

 4.3 2019.....23

5 – METHODS 24

 5.0 Background Research24

 5.1 Field Survey25

6 – RESULTS 26

 6.0 Background Research26

 6.1 Field Survey27

7 – DISCUSSION 34

8 – REFERENCES..... 35

LIST OF FIGURES

Figure 1: Proposed Project Overview Map..... 3

LIST OF TABLES

Table 1: Seasonal Precipitation..... 6

Table 2: Vegetation Communities and Land Cover Summary 8

Table 3: Special-Status Plant Survey Summary 22

Table 4: 2019 Survey Dates and Personnel 26

Table 5: Special-Status Plant Species Observed..... 29

LIST OF ATTACHMENTS

- Attachment A: Vegetation Communities and Land Covers
- Attachment B: Locations of Special-Status Plants Observed
- Attachment C: Inventory of Plant Species Observed
- Attachment D: Special-Status Plant Species Photographs

DRAFT

1 – INTRODUCTION

In 2019, Insignia Environmental (Insignia) conducted protocol-level surveys for Southern California Edison Company's (SCE's) Eldorado-Lugo-Mohave Series Capacitor Project (Project). These surveys comprise the second year of special-status plant surveys conducted to fulfill the Bureau of Land Management's (BLM's) 2-year special-status plant survey requirement. The survey area included all Project impact areas (Impact Areas), plus an approximately 50-foot buffer (Survey Area) totaling approximately 893 acres.¹

This Special-Status Plant Species Survey Report II (Report) provides an overview of the survey history, Project description, and environmental setting; describes the survey methods utilized; presents the 2019 survey results; and provides a brief discussion of the results.

2 – PROJECT DESCRIPTION

2.0 PROJECT LOCATION

The Project spans approximately 235 miles in San Bernardino County, California and Clark County, Nevada. As shown in Figure 1: Proposed Project Overview Map, the Project would extend northeast from Lugo Substation (located in the City of Hesperia, California) to Pisgah Substation (located east of the unincorporated community of Newberry Springs, California). From Pisgah Substation, the Project would extend east to the Mohave Substation (located in Clark County, Nevada), and from Mohave Substation northwest to Eldorado Substation (located near Boulder City, Nevada). Additional staging areas, helicopter landing zones, and work areas are located near the ghost town of Crucero, California; in the community of Newberry Springs; and on the eastern border of the Mojave National Preserve (MNP), along the Eldorado-Lugo 500 Kilovolt (kV) Transmission Line.

2.1 PROJECT COMPONENTS

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

2.1.0 Transmission Line

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

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

¹ Previous surveys included buffers of variable and larger sizes. These larger buffers allowed for changes in the Project's design. In 2019, a consistent buffer of 50 feet from all Impact Areas was surveyed. This smaller buffer was possible as the Project design has progressed to a point where large changes are not anticipated.

To address 16 overhead clearance discrepancies² at approximately 14 locations on the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV transmission lines, existing structures would be raised or reframed, conductors would be modified, and areas would be graded to provide the required clearances. In addition, the Project would include the installation of optical ground wire on approximately 235 miles of the Eldorado-Mohave and Lugo-Mohave 500 kV transmission lines, which would require modification to approximately 59 lattice steel towers.

Telecommunications

Telecommunications infrastructure would be added to connect the Project to SCE's telecommunications system and would provide Supervisory Control and Data Acquisition, protective relaying, data transmission, and telephone services for the Project and associated facilities. The Project would include the installation of approximately 7 miles of new overhead and underground telecommunications cables; installation of three new fiber optic repeater sites; and the installation of new telecommunications cable within the existing Eldorado, Lugo, and Mohave substations.

Distribution

The Project would include extending or rerouting approximately 2.5 miles of new overhead and underground distribution circuits. In addition, cross arms on existing distribution structures would be lowered to address clearance discrepancies on the Lugo-Mojave 500 kV Transmission Line.

2.1.1 Mid-Line Series Capacitors

The Project includes the construction of two new 500 kV mid-line series capacitors—the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor—within the Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Line rights-of-way (ROWS), respectively.

2.1.2 Modifications to Existing Substations

Interior modifications proposed at Eldorado, Lugo, Mohave, and McCollough substations include upgrades and reconfiguration of 500 kV equipment, installation or upgrade of existing capacitor banks, reconductoring of line positions, and additional modifications to equipment.

2.2 RIGHT-OF-WAY REQUIREMENTS

The Project would be built within existing SCE fee-owned ROWs, easements, or public ROWs where SCE has existing franchise agreements.

² SCE has defined “discrepancies” as potential clearance problems between an energized conductor and its surroundings, such as the structure, another energized conductor on the same structure, a different line, or the ground. SCE has identified approximately 16 discrepancies along the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV transmission lines, where minor grading or relocation, replacement, or modification of transmission, subtransmission, or distribution facilities is needed to address California Public Utilities Commission General Order 95 and National Electrical Safety Code overhead clearance requirements.

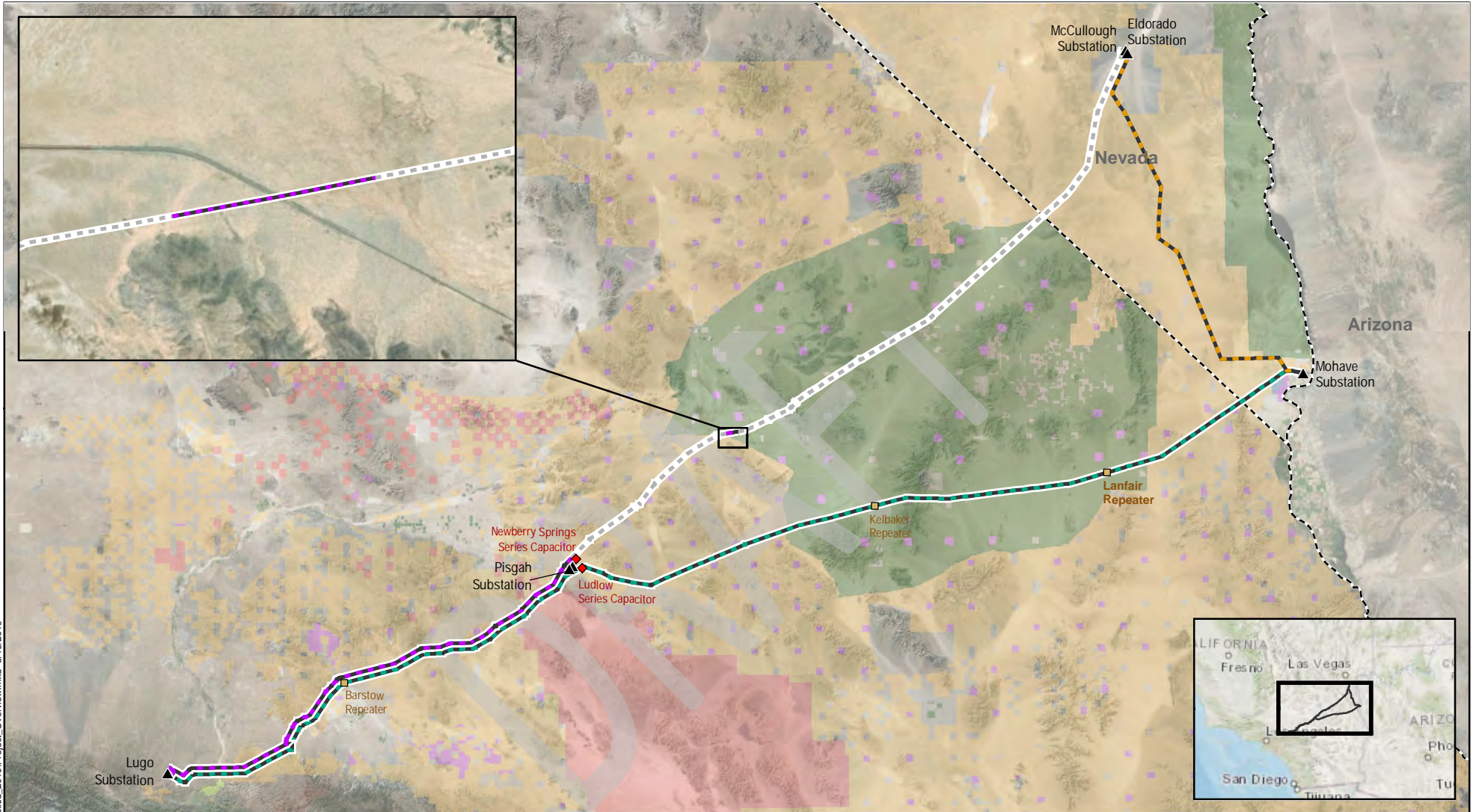
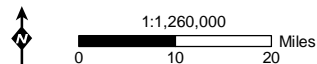


Figure 1: Proposed Project Overview Map

Eldorado-Lugo-Mohave Series Capacitor Project

- | | | | |
|---------------------------------|--|-----------------------------|-------------------------|
| ▲ Substation | — Eldorado - Lugo 500 kV Transmission Line | Land Administration | ■ Military |
| ◆ Mid-Line Capacitor Location | — Eldorado - Mohave 500 kV Transmission Line | ■ County Park | ■ National Park Service |
| ■ Fiber Optic Repeater Location | — Lugo - Mohave 500 kV Transmission Line | ■ Bureau of Reclamation | ■ Other State Park |
| --- State Boundary | --- Transmission Line not part of Proposed Project | ■ Bureau of Land Management | |



DRAFT

However, upon final engineering and Project approval, acquisition of new land rights may be required for the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor and/or fiber optic repeater sites, where necessary. Easement widths are based on facility types, final design, and the type of right acquired. Upgrading easements may include adding land rights, adding widths to existing easements, and improving or clarifying access or maintenance rights.

2.3 CONSTRUCTION METHODS

A detailed description of construction activities, including activities performed, equipment used, expected work periods, daily work schedules, staging and work areas, and access has been provided in the Proponent's Environmental Assessment for the Project.

2.4 LAND DISTURBANCE SUMMARY

Land disturbance would include all areas affected by construction of the Project, referred to herein as the Impact Areas. The total permanent land disturbance for the Project would be approximately 7 acres and the temporary land disturbance would be approximately 373 acres.

2.5 CONSTRUCTION SCHEDULE

SCE anticipates that construction of the Project would take approximately 15 months, beginning in the summer of 2020. The proposed construction schedule does not account for unforeseen Project delays, such as those due to inclement weather and/or stoppage necessary to protect biological resources (e.g., nesting birds). Construction would commence following agency approval, final engineering, procurement activities, land rights acquisition, and receipt of all applicable permits.

3 – ENVIRONMENTAL SETTING

The Project's Impact Areas are located in approximately 380 non-contiguous acres spread across the Mojave Desert within the Mojave Basin and Range Ecoregion (United States [U.S.] Geological Survey [USGS] 2012). Throughout this desert setting, the environmental conditions may vary widely, dependent on season, elevation, proximity to the Pacific coast, and level of anthropogenic activities. The land use, climate, topography, hydrology, soils, and vegetation communities that are located in the Impact Areas are summarized in the subsections that follow.

3.0 LAND USE AND MANAGEMENT

The Project is located mostly in undeveloped lands with few urbanized areas; it is located in close proximity to—and in some cases, within—BLM-managed lands that are used for grazing, energy development, and recreation, among other uses. The Project also crosses approximately 49 miles of the MNP, which is managed by the National Park Service. Land use is further restricted within the MNP. Urbanized areas within the Impact Areas were greatly restricted to lands within the immediate vicinity of Lugo and Mohave substations in the City of Hesperia, California, and the community of Laughlin, Nevada, respectively.

3.1 CLIMATE

The Project is located in a windy, arid desert that receives the majority of its precipitation in the winter. While precipitation from the rainy season (October through April) accounts for approximately 82 percent of the annual total rainfall (USGS 2019), localized monsoon season (July through September) rains are also typical of the area.

Table 1: Seasonal Precipitation provides the average precipitation within the Project area for the rainy and monsoon season between 2015 and 2019. Weather patterns in the region are extremely localized; therefore, individual climate stations typically do not reflect the climate conditions of the entire region. To address this issue, data from eight climate stations distributed throughout the Project area were averaged to develop the values in Table 1: Seasonal Precipitation. In addition, the rainy season values were limited to October through March to represent rainfall levels prior to the initiation of the spring surveys. As shown in Table 1: Seasonal Precipitation, the average precipitation during the Project's special-status plant species surveys was approximately 5.07 inches for the rainy season and 1.44 inches for the monsoon season. This average generally corresponds with the Mojave Desert's average annual precipitation of approximately 5.9 inches (Desert Research Institute 2019).

Table 1: Seasonal Precipitation

Season	Estimated Precipitation (inches)				Average Precipitation (inches)
	2015-2016	2016-2017	2017-2018	2018-2019	
Rainy Season (October – March)	2015-2016	2016-2017	2017-2018	2018-2019	--
	3.87	6.09	2.32	7.99	5.07
Monsoon Season (July – September)	2016	2017	2018	2019	--
	1.45	2.00	1.78	0.53	1.44

Note: This data was generated by averaging precipitation data from the following climate stations: Sweeney Granite Mountains California, Apple Valley Remote Automated Weather Station (RAWS), Means Lake RAWS, Mid Hills RAWS, OX Ranch RAWS, Union Pass RAWS, Mountain Springs RAWS, and Boulder City Community Environmental Monitoring Program (CEMP).

Sources: Western Region Climate Center 2020; Wildland Fire Remote Automated Weather Stations 2020; Community Environmental Monitoring Program 2020.

As shown in Table 1: Seasonal Precipitation, the surveys in 2016 were conducted following a drier than average rainy season, whereas the surveys in 2017 and 2019 were conducted following wetter than average rainy seasons (US Drought Monitor, 2020). Insignia did not conduct any surveys in 2018 which the US Drought Monitor recorded as having severe drought conditions. Section 4 – Survey History and Timing presents a discussion of how precipitation influenced the surveys.

Temperatures in the region may vary widely between seasons and are dependent on elevation. Average annual temperatures range from 49.9 to 75.8 degrees Fahrenheit (°F) (Desert Research Institute 2019). July is the warmest month of the year, with an average high temperature of

97.6 °F and December is the coolest month of the year, with an average high temperature of 57.2 °F.

3.2 TOPOGRAPHY

The elevation of the Impact Areas ranges from approximately 780 feet near Mohave Substation to approximately 4,000 feet at various points. The majority of the Project is located within the Mojave Desert Geomorphic Province. This province encompasses a broad interior region of isolated mountain ranges separated by expanses of desert plains. The topography within this region consists of prominent northwest-southeast-trending faults and secondary east-west-trending faults, the latter of which are in alignment with the east-west trend of the Transverse Ranges Geomorphic Province (California Geological Survey [CGS] 2002), where the western portion of the Project is located. This province consists of an east-west-trending series of steep mountain ranges that extends offshore.

3.3 HYDROLOGY

Hydrological features within the Impact Areas consist almost exclusively of ephemeral desert washes that only hold water for a short period of time as the result of seasonal precipitation. Many of these washes remain in a natural state due to the lack of development throughout most of the region. Within the vicinity of Lugo Substation, water generally flows from the south to the northeast, toward the Mojave River, and to isolated basins in the interior of the Mojave. Near Mohave Substation, water flows from west to east, toward the Colorado River. The Colorado River eventually empties to the Gulf of California, south of the U.S.-Mexico border. In the vicinity of Eldorado Substation, water generally flows from southwest to northeast and into the Eldorado Dry Lake. Groundwater is up to hundreds of feet deep in the Impact Areas.

3.4 SOILS

Soils in the Impact Areas are well-drained and non-hydric, with sandy and loamy textures. The geomorphic positions of these soils include alluvial fans, backslopes, dunes, pediments, fan remnants, fan skirts, fan aprons, mountains, and summits (Natural Resources Conservation Service [NRCS] 2019). The seven most prevalent soil types in the Impact Areas are as follows:

- Rositas-Carrizo (s1137)
- Hesperia Loamy Fine Sand, 2- to 5-percent slopes
- Cajon-Arizo (s1143)
- Urban land-Riverbend-Huevi association
- Hypoint gravelly sandy loam, 0- to 4-percent slopes
- Cajon Gravelly Sand, 2- to 5-percent slopes
- Riverbend-Carrwash association

An additional 64 soil types are present in lesser amounts in the Impact Areas.

Table 2: Vegetation Communities and Land Cover Summary

Vegetation Communities/Land Cover	California State Rarity Rank	Area in the Survey Area (acres)
<i>Vegetation Communities</i>		
<i>Larrea tridentata</i> – <i>Ambrosia dumosa</i> Shrubland Alliance	S5	350.5
<i>Larrea tridentata</i> Shrubland Alliance	S5	72.2
<i>Atriplex polycarpa</i> Shrubland Alliance	S4	35.1
<i>Larrea tridentata</i> – <i>Encelia farinosa</i> Shrubland Alliance	S4	32.7
<i>Yucca brevifolia</i> Woodland Alliance	S3.2	18.8
<i>Ericameria nauseosa</i> Shrubland Alliance	S5	18.6
<i>Eriogonum fasciculatum</i> Shrubland Alliance	S5	17.8
<i>Yucca schidigera</i> Shrubland Alliance	S4	17.7
<i>Prunus fasciculata</i> – <i>Salazaria mexicana</i> Shrubland Alliance	S4	11.9
<i>Ericameria cooperi</i> Provisional Shrubland Alliance	This alliance is provisional and does not have a rank	8.1
<i>Senegalia greggii</i> – <i>Hyptis emoryi</i> – <i>Justicia californica</i> Shrubland Alliance	S4	6.6
<i>Encelia farinosa</i> Shrubland Alliance	Not found in California	6.6
<i>Juniperus californica</i> Woodland Alliance	S4	6.3
<i>Ambrosia salsola</i> – <i>Bebbia juncea</i> Shrubland Alliance	S4	5.8
<i>Coleogyne ramosissima</i> Shrubland Alliance	S4	2.7
<i>Chorizanthe rigida</i> – <i>Gerraea canescens</i> Desert Pavement Sparsely Vegetated Alliance	S4	2.6
<i>Ambrosia dumosa</i> Shrubland Alliance	S5	2.2
<i>Ericameria linearifolia</i> – <i>Cleome isomeris</i> Shrubland Alliance	S4	2.1
<i>Ericameria paniculata</i> Shrubland Alliance	S3	1.9
<i>Suaeda moquinii</i> Shrubland Alliance	S3	1.2
<i>Cylindropuntia bigelovii</i> Shrubland Alliance	Not found in California	0.9

Vegetation Communities/Land Cover	California State Rarity Rank	Area in the Survey Area (acres)
<i>Atriplex confertifolia</i> Shrubland Alliance	S4.2	0.6
<i>Ephedra viridis</i> Shrubland Alliance	S4	0.5
<i>Achnatherum speciosum</i> Herbaceous Alliance	S2.2	0.3
<i>Adenostoma fasciculatum</i> Shrubland Alliance	S5	0.2
<i>Tamarix</i> spp. Shrubland Semi-Natural Alliance	Not Ranked	0.1
<i>Chilopsis linearis</i> - <i>Psoralea argemone</i> Woodland Alliance	S3	0.1
<i>Ephedra nevadensis</i> – <i>Lycium andersonii</i> – <i>Grayia spinosa</i> Shrubland Alliance	S3	<0.1
<i>Purshia tridentata</i> – <i>Artemisia tridentata</i> Shrubland Alliance	S3	<0.1
Land Covers		
Developed	Not Applicable (N/A)	205.4
Barren - Not Developed	N/A	60.9
Active agriculture	N/A	2.7
Total	--	893.1

3.5 VEGETATION COMMUNITIES AND LAND COVERS

The Project is located within the Desert Floristic Province in the Mojave Desert region, including the Desert Mountains subregion (Jepson Flora Project 2019a). Vegetation community composition is a prime factor in assessing the potential for a site to support individual plant species. A total of 29 vegetation communities and 3 land cover types were found in the Survey Area. Table 2: Vegetation Communities and Land Cover Summary lists in order of prevalence each vegetation community and land cover type present. The California State Rarity Ranks of each of the vegetation communities found in California and the total area of each vegetation community and land cover type within the Survey Area are also presented. Vegetation communities associated with California State Rarity Ranks of S1 through S3 are considered sensitive. Nevada does not have a state rarity ranking system. The locations of each vegetation community and land cover type in the Survey Area are shown on Attachment A: Vegetation Communities and Land Covers.

A description of each vegetation community and land cover type is presented in the subsections that follow. The vegetation community (i.e., alliance) names and descriptions are consistent with *A Manual of California Vegetation Online* (California Native Plant Society [CNPS] 2019a). Several alliances documented in the 2016 mapping effort and presented in the Special-Status Plant Species Survey Report for the Eldorado-Lugo-Mohave Series Capacitor Project (Insignia 2017) have undergone recategorization or name changes since 2017. The current alliance names are presented in this Report.

3.5.0 Vegetation Communities

***Achnatherum speciosum* Herbaceous Alliance**

Desert needlegrass (*Stipa speciosa*) (= *Achnatherum speciosum*)—a native, perennial bunchgrass—occurs at a relative coverage of more than 50 percent in the *Achnatherum speciosum* Herbaceous Alliance. Emergent trees and shrubs may be present at a lower coverage. This alliance is found on lower slopes, in canyons, and on sandy or gravelly alluvial fans. Small stands are found in Antelope Valley in the Mojave Desert, but heavy historical grazing and exclusion from non-native annual grasses have likely reduced its range in mid- to upper-elevation desert areas. This herbaceous alliance has a California State Rarity Rank of S2.2.

The *Achnatherum speciosum* Herbaceous Alliance covers approximately 0.3 acre of the Survey Area. This alliance occurred in one stand in the foothills of the San Bernardino Mountains, south of the City of Hesperia. This stand was observed on the valley floor of Antelope Valley, approximately 0.68 mile southwest of the California Aqueduct at an elevation of approximately 3,500 feet. The stand had been disturbed by heavy equipment and vehicle use associated with power line construction and maintenance, as well as fairly regular OHV use.

***Adenostoma fasciculatum* Shrubland Alliance**

The *Adenostoma fasciculatum* shrubland alliance is defined by chamise (*Adenostoma fasciculatum*), a shrub that can grow up to 12 feet tall with a relative coverage of more than 60 percent in the shrub canopy. Other plant species associated with this alliance contribute little to no vegetative cover, and there is little to no understory. Chamise are most often found at

elevations ranging from 2,500 to 3,500 feet above sea level. Chamise chaparral is fire-adapted through stump sprouting. This community is often associated with soils that are shallow and dry, and often on xeric slopes and ridges. This shrubland alliance has a California State Rarity Rank of S5.

The *Adenostoma fasciculatum* shrubland alliance covers approximately 0.2 acre of the Survey Area. This shrubland alliance was observed in two localized stands in the Survey Area. Both were in the far western portion of the Survey Area and west of the California Aqueduct in the foothills of the San Bernardino Mountains, south of the City of Hesperia. One stand was located atop a ridge at approximately 3,600 feet elevation. The other smaller, stand occurred on an east-facing slope near the California Aqueduct at an elevation of approximately 3,500 feet.

***Ambrosia dumosa* Shrubland Alliance**

The *Ambrosia dumosa* Shrubland Alliance is dominated by white bur-sage (*Ambrosia dumosa*), a short-lived, drought deciduous shrub. White bur-sage can grow up to 3 feet tall and occurs in alluvial fans, rocky hills, and stabilized sand fields at elevations up to 5,500 feet. Soils are sandy or clay-rich and may have desert pavement surfaces. White bur-sage is dominant in the shrub layer, which is open to intermittent. The herbaceous layer is open to intermittent, with seasonal annuals. Co-dominants include saltbush (*Atriplex* spp.), creosote bush (*Larrea tridentata*), and cholla (*Cylindropuntia* spp.), among others. Membership in the shrubland alliance requires white bur-sage occurring at twice the absolute cover of creosote bush when both species are present. This alliance has a California State Rarity Rank of S5.

The *Ambrosia dumosa* Shrubland Alliance covers approximately 2.2 acres of the Survey Area. In these areas, white bur-sage had more than twice the absolute cover of creosote bush. Though white bur-sage is relatively common, it is often associated with creosote bush, and this distinction explains the small acreage covered by this shrubland alliance. It was observed in two isolated areas near Lucerne Valley and Clipper Valley. Both alliance occurrences were observed at elevations of approximately 3,000 feet.

***Ambrosia salsola* – *Bebbia juncea* Shrubland Alliance**

The *Ambrosia salsola* – *Bebbia juncea* Shrubland Alliance is dominated by cheesebush (*Ambrosia salsola*), sweetbush (*Bebbia juncea*), white brickellbush (*Brickellia incana*), and/or armed senna (*Senna armata*), though other shrubs and emergent trees may be present at low cover. The shrub canopy is open to intermittent and the herbaceous layer is sparse or seasonally present. This alliance is found in valleys, flats, and intermittently flooded washes, channels, and arroyos on alluvial, sandy and gravelly, and disturbed desert pavement soils. The alliance is often associated with heavily disturbed areas, including active washes, burned and heavily grazed areas, military camps, off-highway vehicle (OHV) areas, and roadsides. This shrubland alliance has a California State Rarity Rank of S4.

The *Ambrosia salsola* – *Bebbia juncea* Shrubland Alliance covers approximately 5.8 acres of the Survey Area. Most stands of this alliance occurred in the portion of the Survey Area in Nevada, with only three stands documented in California. Most occurrences were documented within wash systems, with varying degrees of disturbance. However some stands were mapped along

the sides of roads. The majority of the stands in Nevada were documented in the Newberry Mountains and east toward the community of Laughlin. The Providence Mountains in California mark the western extent of this alliance.

***Atriplex confertifolia* Shrubland Alliance**

The *Atriplex confertifolia* Shrubland Alliance is dominated by shadscale (*Atriplex confertifolia*), a low-growing, short-lived shrub. Other shrubs—including white bur-sage, creosote bush, and bush encelia (*Encelia actoni*)—may be present at lower coverages, and the herbaceous layer is sparse to abundant. The shrubland alliance is found in bajadas (e.g., alluvial plains formed at the base of a mountain by the coalescing of alluvial fans), flats, and lower slopes in variable soils that may be covered with desert pavement. This alliance has a California State Rarity Rank of S4.2.

The *Atriplex confertifolia* Shrubland Alliance covers approximately 0.6 acre of the Survey Area. One stand of this alliance was observed on a previously-graded ridge on Iron Ridge near the northwestern boundary of the Twentynine Palms Marine Corps Air Ground Combat Center (MCAGCC). The elevation at this site was approximately 4,450 feet.

***Atriplex polycarpa* Shrubland Alliance**

The *Atriplex polycarpa* Shrubland Alliance is defined by a relative cover of more than 50 percent of allscale saltbush (*Atriplex polycarpa*), a drought- and alkaline-tolerant shrub that can reach up to 6 feet in height. Other shrubs, including bur-sage and creosote bush, may be codominant in the shrub layer. The herbaceous layer is variable and includes seasonal annuals. This alliance is found in washes, playa lake beds, dissected alluvial fans, and rolling hills with carbonate-rich, alkaline, sandy, or sandy clay loam soils. Due to the allscale saltbush's resistance to drought and alkalinity, this alliance is abundant in the western sections of the Mojave Desert. This shrubland alliance has a California State Rarity Rank of S4.

The *Atriplex polycarpa* Shrubland Alliance covers approximately 35.1 acres of the Survey Area. The alliance was observed exclusively in the community of Lucerne Valley and the adjacent Fifteenmile Valley within the Survey Area. Two stands in the community of Lucerne Valley were documented within approximately 1 mile of the dry lakebed of Lucerne Lake. The remaining stands were observed within approximately 1.5 miles of the dry lakebed of Rabbit Lake in Fifteenmile Valley.

***Chilopsis linearis* – *Psorothamnus spinosus* Woodland Alliance**

The tree or tall shrub canopy of the *Chilopsis linearis* – *Psorothamnus spinosus* woodland alliance has an absolute cover of more than 2 percent in the tree canopy and is dominated or co-dominated by desert willow (*Chilopsis linearis*) and/or smoke tree (*Psorothamnus spinosus*). Other trees and tall shrubs that may be co-dominant include blue palo verde (*Parkinsonia florida*), honey mesquite (*Prosopis glandulosa*), and Joshua tree (*Yucca brevifolia*). The shrub layer is open to intermittent and may be inhabited by catclaw acacia (*Senegalia greggii*), cheesebush, and creosote bush, among others. The herbaceous layer is sparse to seasonally abundant with annuals. This alliance is restricted to sandy wash and intermittent channel bottoms, along floodplains, and in wash terraces where flooding is infrequent but subterranean

water is available. Soils in this alliance are well-drained sands and gravels that are moderately acidic to slightly alkaline. The alliance has a California State Rarity Rank of S3.

The *Chilopsis linearis* – *Psoralea argophylla* Woodland Alliance covers approximately 0.1 acre of the Survey Area. This alliance was observed in one occurrence in the Bristol Mountains in an unnamed tributary to the Budweiser Wash at approximately 2,300 feet in elevation.

***Chorizanthe rigida* – *Geraea canescens* Desert Pavement Sparsely Vegetated Alliance**

The *Chorizanthe rigida* – *Geraea canescens* Desert Pavement Sparsely Vegetated Alliance has a sparse to intermittent herb layer, with an annual plant cover that varies from less than 1 percent to greater than 20 percent, depending on the year. Devil's spineflower (*Chorizanthe rigida*) and/or desert sunflower (*Geraea canescens*) are characteristically present in the herbaceous layer. The shrub layer is sparse, if present. The majority of this alliance consists of desert pavement, which is a thin, relatively flat layer of nearly interlocking rocks or pebbles that have been worn down by erosional processes over thousands of years. Desert pavement is often devoid of vegetation, though the gaps in the topmost rock layer may provide habitat for ephemeral annuals in response to precipitation. Desert pavement occurs throughout the Mojave Desert, usually in flat basins, valley bottoms, and occasionally alluvial fans where extreme temperatures and high wind conditions exist. Due to the erosional factors involved in its formation, desert pavement is an extremely sensitive land cover that small physical disturbances can irreversibly affect, including OHV and foot traffic. This alliance has a California State Rarity Rank of S4.

The *Chorizanthe rigida* – *Geraea canescens* Desert Pavement Sparsely Vegetated Alliance covers approximately 2.6 acres of the Survey Area. The alliance was observed in multiple locations between Pisgah Substation and Homer Mountain within the Survey Area. This section is relatively remote and experiences lower levels of disturbance than the more populated sections in the far western and far eastern limits of the Survey Area. One patch was observed in the lowland between East Ord and Fry mountains, near the intersection of Powerline Road and Camp Rock Road. Desert pavement was restricted to lower elevations, with each patch occurring at elevations between 1,900 and 2,900 feet. All observed patches of desert pavement were also located within lowland, braided, ephemeral channels associated with bajadas or playas.

***Coleogyne ramosissima* Shrubland Alliance**

The *Coleogyne ramosissima* Shrubland Alliance is defined by an absolute coverage of more than 2 percent of blackbrush (*Coleogyne ramosissima*), a small, long-lived shrub. Other shrubs—including ephedra (*Ephedra* spp.), creosote bush, and Mojave yucca (*Yucca schidigera*)—and emergent trees may be present. The herbaceous layer is sparse to open with cryptogammic crusts. This alliance is found on slopes, upper bajadas, and rocky highlands at elevations above 3,200 feet. Soils are thin and sandy with abundant exposed rock, and often have a shallow caliche layer and moderate alkalinity. This shrubland alliance has a California State Rarity Rank of S4.

The *Coleogyne ramosissima* Shrubland Alliance covers approximately 2.7 acres of the Survey Area. This shrubland alliance was observed exclusively in the Lava Bed Mountains near the Twentynine Palms MCAGCC. This alliance was observed at approximately 3,700 feet in elevation. Three stands occurred on the exposed rock on the ridges.

***Cylindropuntia bigelovii* Shrubland Alliance**

The *Cylindropuntia bigelovii* Shrubland Alliance exists where teddy-bear cholla (*Cylindropuntia bigelovii*), a distinctive cholla that grows up to 5 feet tall, has a relative cover of more than 50 percent in the shrub layer. Other shrubs may be present at lower coverages, and the herbaceous layer is open with a cryptobiotic crust and seasonal annuals. This alliance is found on alluvial fan deposits and gentle to moderate, south- or southwest-facing slopes of rocky highlands with soils ranging from coarse sands to loams. Stands occupy the warmest southerly sections of the Mojave Desert. No state rarity rank is associated with this alliance.

The *Cylindropuntia bigelovii* Shrubland Alliance covers approximately 0.9 acre of the Survey Area. This alliance was observed around two towers in Nevada at the southern end of the Newberry Mountains, approximately 1.8 miles east of the intersection of Old Government Road and Powerline Road. The elevation at the sites was approximately 1,800 feet.

***Encelia farinosa* Shrubland Alliance**

The *Encelia farinosa* Shrubland Alliance is dominated by brittlebush (*Encelia farinosa*), an extremely drought-tolerant, short-lived shrub. Although it may occur with creosote bush or white bur-sage, this alliance requires a relative cover of more than 30 percent by brittlebush in the shrub canopy. The herbaceous layer is open with seasonal annuals. It often occurs on south-facing, rocky hillsides, on slopes of small washes, and in well-drained rocky soils that may be covered by desert pavement. Stands are strongly associated with heavily disturbed areas, and are often observed on roadsides. No state rarity rank is associated with this alliance.

The *Encelia farinosa* Shrubland Alliance covers approximately 6.6 acres of the Survey Area and was only found in Nevada. The alliance was observed exclusively in the Newberry Mountains, in the easternmost portion of the Survey Area. Two occurrences were observed on south-facing slopes, near the unnamed pass between the Dead and the Newberry mountains. Two large stands were observed at the mouth of Bridge Canyon, west of the community of Laughlin, Nevada. Another occurrence was documented on a large, south-facing slope, located immediately west of Nevada State Route (SR-) 163.

***Ephedra nevadensis* – *Lycium andersonii* – *Grayia spinosa* Shrubland Alliance**

The *Ephedra nevadensis* – *Lycium andersonii* – *Grayia spinosa* Shrubland Alliance is dominated or co-dominated by Nevada joint fir (*Ephedra nevadensis*), Anderson's boxthorn (*Lycium andersonii*), and/or spiny hop sage (*Grayia spinosa*). Nevada joint fir is present at an absolute cover of greater than 2 percent and is usually a strong dominant, with greater than twice the coverage of other shrub species. Anderson's boxthorn is present at a relative cover of greater than 50 percent in the shrub canopy, and spiny hop sage has an absolute cover of 2 percent or greater in the shrub canopy. The herbaceous layer is sparse to intermittent. This shrubland

alliance is found on dry, open slopes and ridges. Soils are well-drained and gravelly or rocky, and may be alkaline or saline. This shrubland alliance has a California State Rarity Rank of S4.

The *Ephedra nevadensis* – *Lycium andersonii* – *Grayia spinosa* Shrubland Alliance covers approximately 0.03 acre of the Survey Area. One stand was documented in the far western portion of the Survey Area, in the Ord Mountains, and approximately 1 mile east of the Mojave River. It was observed on a north-facing slope at an elevation of approximately 3,500 feet. The slope was relatively disturbed due to vehicle and heavy equipment use associated with power line construction and maintenance.

***Ephedra viridis* Shrubland Alliance**

The *Ephedra viridis* Shrubland Alliance is dominated by green ephedra (*Ephedra viridis*), an evergreen shrub. However, other shrubs, including big sagebrush (*Artemisia tridentata*), and emergent trees may be present. Perennial grasses may also be present in the herbaceous layer. This shrubland alliance is found on ridges and steep slopes in soils that are shallow and rocky. In the Mojave Desert, this alliance occurs at higher elevations, generally above 4,000 feet. Stands are usually small and localized, and may be impacted by falling rocks or avalanches. This alliance has a California State Rarity Rank of S4.

The *Ephedra viridis* Shrubland Alliance covers approximately 0.5 acre in the Survey Area. The alliance was observed as one isolated stand in the foothills of the San Bernardino Mountains, south of the City of Hesperia. The alliance was located on a north-facing ridge above an unnamed wash at an elevation of approximately 3,200 feet.

***Ericameria cooperi* Provisional Shrubland Alliance**

The *Ericameria cooperi* Provisional Shrubland Alliance is characterized by an even and dominant distribution of Cooper's goldenbush (*Ericameria cooperi* var. *cooperi*) (= *Ericameria cooperi*) across the landscape, though other shrubs may be present. This alliance often showed signs of recent fire or other disturbance. Cooper's goldenbush typically occurs in creosote bush scrub (*Larrea tridentata* Shrubland Alliance) and Joshua tree woodland (*Yucca brevifolia* Woodland Alliance) habitats. However, the portions of the Survey Area where Cooper's goldenbush was dominant did not meet the membership requirements of the aforementioned alliances. Further, these areas were not adjacent to or surrounded by creosote bush scrub or Joshua tree woodland, so it was determined that this was not an anomalous stand of Cooper's goldenbush within otherwise typical pre-existing alliance. Therefore, it was determined that creating a provisional alliance was more appropriate to describe this vegetation community. This provisional shrubland alliance and does not have a California State Rarity Rank.

The *Ericameria cooperi* Provisional Shrubland Alliance covers approximately 8.1 acres of the Survey Area. The Cooper's goldenbush-dominated areas are located around the Lugo Substation and in the hills south of the city of Hesperia.

***Ericameria linearifolia* – *Cleome isomeris* Shrubland Alliance**

The *Ericameria linearifolia* – *Cleome isomeris* Shrubland Alliance is dominated by narrowleaf goldenbush (*Ericameria linearifolia*), bladderpod (*Cleome isomeris*), and/or yellow mock aster (*Eastwoodia elegans*). These species comprise more than 30-percent relative cover in the shrub canopy. Emergent trees or tall shrubs, including California juniper (*Juniperus californica*), may be present at low cover. This alliance occurs in shallow, sometimes alkaline, soils on dry slopes and ridges. This shrubland alliance has a California State Rarity Rank of S4.

The *Ericameria linearifolia* – *Cleome isomeris* Shrubland Alliance covers approximately 2.1 acres of the Survey Area. One stand of narrowleaf goldenbush was observed in the vicinity of one tower on the slopes of a small valley in the foothills of the San Bernardino Mountains, south of the City of Hesperia. The elevation at the site was approximately 3,500 feet.

***Ericameria nauseosa* Shrubland Alliance**

Rubber rabbitbrush (*Ericameria nauseosa*) is a fast-growing shrub that covers more than 50 percent of the shrub canopy in the *Ericameria nauseosa* Shrubland Alliance. Emergent trees may be present, and the herbaceous layer is sparse or grassy. In the Mojave Desert, this alliance inhabits all topographic settings at higher, cooler elevations. Soils are well-drained sands and gravels. It is found in areas disturbed naturally through flooding, and artificially through mining, grazing, and agriculture. This shrubland alliance has a California State Rarity Rank of S5.

The *Ericameria nauseosa* Shrubland Alliance covers approximately 18.6 acres within the Survey Area. The alliance was restricted to the foothills of the San Bernardino and Ord mountains in the far western, high-elevation sections of the Survey Area. All stands of rubber rabbitbrush were observed along the power line access roads, or other areas associated with the power lines that had been previously disturbed. These results may be skewed because most survey sections within the Survey Area were in close proximity to, or otherwise associated with, the power lines and had been previously disturbed. However, many of the vegetation communities in this section of the Mojave Desert have been greatly affected by OHV use and development.

***Ericameria paniculata* Shrubland Alliance**

The *Ericameria paniculata* Shrubland Alliance is dominated by black-banded rabbitbrush (*Ericameria paniculata*). However, brittlebush, ephedra, catclaw acacia (*Senegalia greggii*), and other shrubs may be present at lower coverages. The shrub canopy can be closed to open with a herbaceous layer that is open with seasonal annuals. This alliance occurs in intermittently flooded washes, and soils are sandy and usually well-drained. It is common in medium and large washes where flooding events occur every few years. It can be found from 300 to 3,600 feet in elevation. This shrubland alliance has a California State Rarity Rank of S3.

The *Ericameria paniculata* Shrubland Alliance covers approximately 1.9 acres of the Survey Area. It was restricted to two stands located in unnamed washes in Eldorado Valley, Nevada. The elevation at the sites was approximately 2,450 feet.

***Eriogonum fasciculatum* Shrubland Alliance**

The *Eriogonum fasciculatum* Shrubland Alliance is defined by California buckwheat (*Eriogonum fasciculatum*), a perennial shrub that can grow up to 5 feet tall with a relative cover of more than 50 percent. Other shrubs that may be co-dominant include creosote bush and brittlebush. The herbaceous layer is open and may be grassy. This alliance occurs in upland slopes and intermittently flooded arroyos, channels, and washes. Soils are coarse and well-drained, and may be rocky and shallow. Stands may establish following physical disturbance or fire. This alliance exists at mid-elevations in the Mojave Desert and can be found at elevations up to 4,000 feet. This shrubland alliance has a California State Rarity Rank of S5.

The *Eriogonum fasciculatum* Shrubland Alliance covers approximately 17.8 acres of the Survey Area. It was observed west of Lucerne Valley and several areas were documented in the Ord Mountains at an elevation of approximately 3,600 feet. This alliance was also documented in Fifteenmile Valley, at an elevation of approximately 3,300 feet, and in the vicinity of Lugo Substation.

***Juniperus californica* Woodland Alliance**

The *Juniperus californica* Woodland Alliance is dominated by California juniper, an evergreen tree that reaches up to 14 feet in height. California juniper can be found from 1,900 to 8,000 feet in elevation. Habitats include ridges, slopes, valleys, alluvial fans, and valley bottoms. It can be found in soils that are often very shallow and can be porous, rocky, coarse, sandy, or silty. In the Mojave Desert, California juniper may be co-dominant in the small tree canopy with singleleaf pinyon pine (*Pinus monophylla*) or Joshua tree (*Yucca brevifolia*). The canopy is open to intermittent. The shrub layer is open to intermittent and may include big sagebrush, blackbrush, ephedra, and Mohave yucca. The herbaceous component is sparse or grassy. This woodland alliance has a California State Rarity Rank of S4.

The *Juniperus californica* Woodland Alliance covers approximately 6.3 acres of the Survey Area. It was observed in the extreme western, relatively high-elevation portions of the Survey Area, specifically in the foothills of the San Bernardino and Ord mountains. All occurrences of this alliance were documented between 3,000 and 4,800 feet in elevation. These areas were classified by the presence of California juniper, with the absence of any other tree species.

***Larrea tridentata* Shrubland Alliance**

The *Larrea tridentata* Shrubland Alliance is characterized by the dominance or co-dominance of creosote bush in the shrub canopy. White bur-sage or brittlebush is absent or has a cover of less than 1 percent. Other shrubs may be present, but none may have more than twice the cover of creosote bush. Creosote bush is an extremely long-lived, drought-deciduous shrub that can grow to a height of 9 feet. It inhabits alluvial fans, bajadas, and upland slopes with well-drained soils. Mature plants may be allelopathic to their own seedlings, which encourages an open community structure. Creosote bush also has a deep root system, which makes it relatively drought-resistant. It can be found from 250 feet below sea level to 3,300 feet above sea level. Co-dominants in the shrub layer may include white bur-sage, brittlebush, and ephedra, among others. The herbaceous layer is open or intermittent with seasonal annuals or perennial grasses. This shrubland alliance has a California State Rarity Rank of S5.

The *Larrea tridentata* Shrubland Alliance covers approximately 72.2 acres of the Survey Area. It was observed across much of the Survey Area in upland areas. This alliance was most concentrated in the area between Pisgah Crater and the community of Ludlow, California. All records were observed between approximately 3,000 feet and 4,000 feet in elevation. Most observations were in bajadas and alluvial fans, or were associated with washes.

***Larrea tridentata* – *Ambrosia dumosa* Shrubland Alliance**

The *Larrea tridentata* – *Ambrosia dumosa* Shrubland Alliance is the most prevalent vegetation community in the Mojave Desert, representing approximately 67 percent of the central Mojave Desert (CNPS 2019a). This shrubland alliance is co-dominated by white bur-sage and creosote bush in the shrub canopy. Saltbush, brittlebush, Mojave yucca, and other shrubs may also occur, but creosote bush and white bur-sage represent twice the coverage of any other species. Emergent trees may be present at low cover. The herbaceous layer is open to intermittent with seasonal annuals. This alliance inhabits minor, ephemeral washes, alluvial fans, bajadas, and upland slopes from 250 feet below sea level to 3,300 feet in elevation. Soils are well-drained, alluvial, sandy, and sometimes covered with desert pavement. This alliance has a California State Rarity Rank of S5.

The *Larrea tridentata* – *Ambrosia dumosa* Shrubland Alliance is by far the most prevalent alliance in the Survey Area, covering approximately 350.5 acres. It was documented in most terrain types; however, it was absent through the Ord Mountains. This section represented the highest elevation of the Survey Area, from 3,800 to 4,800 feet above sea level.

***Larrea tridentata* – *Encelia farinosa* Shrubland Alliance**

The *Larrea tridentata* – *Encelia farinosa* Shrubland Alliance is co-dominated by creosote bush and brittlebush, though other shrubs may be present. This alliance is found in small washes, alluvial fans and colluvium on upland slopes in well-drained, rocky soils. Soils are often derived from volcanic or granitic rock and may have desert pavement surfaces. It is not found in sandy or clayey soils. The herbaceous layer is open with seasonal annuals, but often is less diverse than other desert scrub vegetation types. The shrubland alliance occurs at elevations ranging from sea level to 4,600 feet. It is widespread throughout the western and central Mojave Desert. This alliance has a California State Rarity Rank of S4.

The *Larrea tridentata* – *Encelia farinosa* Shrubland Alliance covers approximately 32.7 acres of the Survey Area. All occurrences of this alliance were documented in Nevada, except for one occurrence located on a south-facing slope of an unnamed outcrop at the northern end of the community of Lucerne Valley, California. The alliance was also documented on relatively disturbed land within the fence line of the Mojave Substation. All other observed stands occurred on south-facing or southeast-facing rocky slopes in the Newberry Mountains.

***Prunus fasciculata* – *Salazaria mexicana* Shrubland Alliance**

The *Prunus fasciculata* – *Salazaria mexicana* Shrubland Alliance is characterized by relative covers of more than 25 percent of desert almond (*Prunus fasciculata*), more than 50 percent of bladder-sage (*Scutellaria mexicana*) (= *Salazaria mexicana*), and/or more than 50 percent of purple sage (*Salvia dorrii*). Other shrubs including cheesebush, creosote bush, chaparral beard tongue (*Keckiella antirrhinoides*), and desert plum (*Prunus eremophila*) may be present or co-dominant. The canopy is open to intermittent, and the herbaceous layer is open. In previous classifications, the diagnostic species of this alliance were in separate single-species alliances. With additional analysis, they have been found to be similar in environmental settings and floristics, and have been combined. This alliance occurs on granitic, volcanic, and calcareous substrates in arroyos, gravelly canyons, upper washes, colluvial slopes, and on disturbed upland sites. This alliance receives higher precipitation and lower temperatures than other wash vegetation types. This shrubland alliance has a California State Rarity Rank of S4.

The *Prunus fasciculata* – *Salazaria mexicana* Shrubland Alliance covers approximately 11.9 acres of the Survey Area and was entirely restricted to the Ord Mountains, except for one stand located in the foothills of the San Bernardino Mountains. These occurrences were documented at elevations ranging from 4,000 to 4,600 feet.

***Purshia tridentata* – *Artemisia tridentata* Shrubland Alliance**

Bitterbrush (*Purshia tridentata*)—a large, long-lived shrub—with more than 50 percent relative cover in the shrub canopy in the *Purshia tridentata* – *Artemisia tridentata* Shrubland Alliance. Other shrubs, including big sagebrush, green ephedra, and rubber rabbitbrush may be co-dominant. Emergent trees, including California juniper and Joshua tree, may be present at low coverages. The herbaceous layer is sparse to open, and possibly grassy. The shrubland alliance is found in various topographic settings, and small stands occur on the east side of the San Bernardino Mountains. Soils are generally highly permeable and well-drained. This shrubland alliance has a California State Rarity Rank of S3.

Purshia tridentata – *Artemisia tridentata* Shrubland Alliance is the least prevalent alliance in the Survey Area, with a cover of approximately 0.02 acre. One stand was observed in the Ord Mountains on a north-facing slope near the north end of Arrastre Canyon at an elevation of approximately 4,300 feet.

***Senegalia greggii* – *Hyptis emoryi* – *Justicia californica* Shrubland Alliance**

The *Senegalia greggii* – *Hyptis emoryi* – *Justicia californica* Shrubland Alliance is dominated or co-dominated by catclaw acacia, desert lavender (*Condea emoryi*) (= *Hyptis emoryi*), and/or chuparosa (*Justicia californica*). Other shrubs (e.g., cheesebush, creosote bush, ephedra, and sweetbush) may be present, but the characteristic species represent the greatest coverage in the shrub canopy. The canopy is open to intermittent, and the herbaceous layer is sparse to intermittent with seasonal annuals. This alliance is found in arroyos, channels, washes, bajadas, seeps, canyon walls, rocky colluvial slopes, and valleys. Soils are coarse, well-drained, gravelly sands and loams, and moderately acidic to slightly saline. This shrubland alliance has a California State Rarity Rank of S4.

The *Senegalia greggii* – *Hyptis emoryi* – *Justicia californica* Shrubland Alliance covers approximately 6.6 acres of the Survey Area. It was observed in many desert wash and canyon systems east of Pisgah Substation within the Survey Area, and is often a preliminary indicator of drainage systems. In the Dead and Providence mountains, the shrubland alliance was documented on canyon floors.

***Suaeda moquinii* Shrubland Alliance**

The *Suaeda moquinii* Shrubland Alliance is dominated by bush seepweed (*Suaeda nigra*) (= *Suaeda moquinii*), a small, short-lived shrub. Other shrubs, including saltbush, may be present; and the herbaceous layer is sparse to intermittent. This alliance is found in bajadas, playas, and toe slopes adjacent to alluvial fans at elevations from sea level to 4,200 feet. Soils are deep and saline or alkaline. Bush seepweed appears opportunistic in occupying roadsides and other recently disturbed areas. This shrubland alliance has a California State Rarity Rank of S3.

The *Suaeda moquinii* Shrubland Alliance covers approximately 1.2 acres of the Survey Area. The alliance was observed in around two towers on south-facing toe slopes above the dry lakebed of Rabbit Lake. These slopes are relatively disturbed from vehicle and equipment use associated with power line construction and maintenance.

***Tamarix* spp. Shrubland Semi-Natural Alliance**

The *Tamarix* spp. shrubland semi-natural alliance is a weedy, virtual monoculture of several non-native tamarisk species (*Tamarix chinensis* or *Tamarix ramosissima*), which usually supplant native vegetation following major disturbance. This vegetation community occurs in arroyo margins, lake margins, ditches, washes, rivers, and other watercourses, often in areas where high evaporation increases the salinity. Tamarisk is a prolific seeder, which predisposes the species to be an aggressive competitor in disturbed riparian corridors. Tamarisk scrub is widely distributed and is increasing its range. This semi-natural alliance does not have a California State Rarity Rank.

This semi-natural alliance covers approximately 0.9 acre within the Survey Area. It was observed in the Survey Area along the Union Pacific Railroad tracks, approximately 19 miles west of Kelso, California. The stands were most likely originally planted as windbreaks for the railroad.

***Yucca brevifolia* Woodland Alliance**

The *Yucca brevifolia* Woodland Alliance is indicated by the presence of Joshua tree, an evergreen, branching tree that can reach up to 45 feet in height with a coverage of 1 percent or more. This alliance is found on gentle slopes and ridges from 2,500 to 6,000 feet in elevation. Soils are generally coarse sands, very fine sands, gravel, or sandy loams. The alliance may often include other tree species, including California juniper and singleleaf pinyon pine, at low cover and can include white bur-sage, creosote bush, and Mojave yucca, among other species in the shrub and grass layers. The shrub layer and herbaceous layer are open to intermittent because of the relatively low cover of the tree canopy. This woodland alliance has a California State Rarity Rank of S3.2.

The *Yucca brevifolia* Woodland Alliance covers approximately 18.8 acres and was observed at the western and eastern ends of the Survey Area. The westernmost occurrence of Joshua trees was observed in the vicinity of Lugo Substation. The alliance also occurred in small patches on the slopes of the Ord Mountains at 4,000 feet in elevation, and on the basin floor of nearby Fifteenmile Valley at 3,000 feet in elevation. The woodland alliance was also observed in several areas on the gentle slopes of the Highland Range north of the community of Searchlight, Nevada.

***Yucca schidigera* Shrubland Alliance**

The *Yucca schidigera* Shrubland Alliance is characterized by the presence of Mojave yucca, an evergreen shrub or small tree that can grow up to 16 feet tall. This alliance requires absolute cover of 2 percent or more of Mojave yucca. Other shrubs may be present at equal or greater coverage, and the grass layer may be open to intermittent. Mojave yucca inhabits alluvial fans, rocky slopes, and upper bajadas with well-drained, sandy loams. It is characteristic of mid-elevations of desert mountain ranges and can be found at elevations from 3,000 to 6,000 feet. This shrubland alliance has a California State Rarity Rank of S4.

The *Yucca schidigera* Shrubland Alliance covers approximately 17.7 acres of the Survey Area. This alliance was observed throughout the Survey Area in various locations, with most occurrences occurring between the Providence Mountains and Homer Mountain.

3.5.1 Land Covers

Active Agriculture

Active agriculture consists of annual and perennial crops grown in openly spaced rows. Row crops are often planted in floodplains or upland areas with high-quality soil, and are rotated on a seasonal or yearly basis. Agricultural land in the Mojave Desert is nearly always artificially irrigated.

Active agricultural occurs in approximately 2.7 acres of the Survey Area. It was observed exclusively in Sunset Cove, which is located in the far western portion of the community of Lucerne Valley. One field of unidentified row crops was documented on the south side of Exeter Street, near the intersection of Sussex Avenue.

Barren – Not Developed

Barren areas are defined by a lack of vegetation. Specifically, any land with a vegetative cover of less than 2 percent is considered barren. In the Mojave Desert, this includes pockets of land with little to no vegetation that are intermittently spaced between habitats, most likely caused from historic disturbance.

Within the Survey Area, barren land covers approximately 60.9 acres. Barren land was observed in various locations east of the community of Lucerne Valley. One notable patch was documented in an unnamed wash bed between the East and Fry mountains and near the intersection of Powerline Road and Camp Rock Road. Another large stretch of barrens covered the area within the fence line of Mohave Substation.

Developed

Developed land includes areas that have been built or otherwise physically altered to the extent that they no longer support native vegetation. Developed land is characterized by the presence of permanent or semi-permanent structures, pavement or hardscape, and/or landscaped areas that require irrigation.

Developed land is the most prevalent non-vegetative land cover in the Survey Area, at approximately 205.4 acres. In general, developed land was documented along access roads, near relatively populated areas, including the community of Lucerne Valley and the community of Laughlin, Nevada; and in and around Lugo, Pisgah, Mojave and Eldorado Substations.

4 – SURVEY HISTORY AND TIMING

Insignia conducted an initial set of surveys in 2016 and 2017. Following the 2017 surveys, the BLM requested a second set of special-status plant surveys. As a result, Insignia initiated the second set of surveys in March 2019. Due to the limited rain during the 2019 monsoon season and the excellent rain in 2017, the BLM deemed a second set of late-season surveys to be unnecessary. As shown in Table 3: Special-Status Plant Survey Summary and as described in the following subsections, 2016 and 2017 comprised Survey Year 1, and 2019 was designated as Survey Year 2.

Table 3: Special-Status Plant Survey Summary

Survey Year	Year	Survey Round	Months	Survey Area	Approximate Area Surveyed (acres)
1	2016	1	March/April	All original impact areas and a variable buffer	2,511
		2	May		2,511
	2017	1	March/April	Additional impact areas only and a variable buffer	124
		2	May		74
		3	September/October	All impact areas and a variable buffer	774
2	2019	1	March/April	All impact areas and a 50-foot buffer	893
		2	April/May		893

4.0 2016

In 2016 (i.e., Survey Year 1), Insignia conducted initial protocol-level special-status plant surveys for the Project. As discussed in Section 3.1 Climate, the Mojave Desert receives an average annual precipitation of approximately 5.9 inches, but in 2016 the Impact Areas received lower than average rainfall. However, despite this, Insignia conducted two rounds of protocol-level special-status plant surveys in the spring. Botanists surveyed an approximately 2,511 acre

area in California and Nevada, which included the original Project Impact Areas and a buffer of variable widths, as shown in Table 3: Special-Status Plant Survey Summary. This is herein referred to as the 2016 Survey Area. The results were submitted to SCE in the form of the Special-Status Plant Species Survey Report for the Proposed Project on April 28, 2017; and the report was finalized on June 14, 2017.

4.1 2017

After the completion of the 2016 special-status plant surveys, SCE requested that Insignia survey an additional area of approximately 74 acres due to Project refinements. Between March and October 2017, Insignia botanists conducted three rounds of special-status plant surveys. Because these additional Project refinements were not surveyed in 2016, the surveys of these areas are still considered to be part of the Survey Year 1 surveys, even though they were conducted in 2017. As shown in Table 3: Special-Status Plant Survey Summary, during Round 1 of the 2017 surveys, Insignia surveyed the approximately 74-acre area, plus approximately 50 acres of the 2016 Survey Area at the request of SCE. The approximately 50-acre area was resurveyed due to drought conditions that may have limited survey results in 2016 (US Drought Monitor, 2020). Round 2 of the 2017 surveys was conducted for the approximately 74-acre area only. As shown in Table 1: Seasonal Precipitation, the Project alignment received heavy summer monsoon rains in 2017. Therefore, Round 3 of the 2017 surveys targeted geographic areas in the eastern half of the Project alignment that had bloomed following the late summer monsoon rains, and included portions of the areas that were surveyed during the first two rounds; this area totaled approximately 774 acres. The combined area of the 2017 special-status plant surveys consists of approximately 890 acres. The results were conveyed in a Supplemental Special-Status Plant Species Survey Report that was submitted to SCE on April 26, 2018.

4.2 2018

With the BLM's concurrence, surveys were not conducted in 2018 due to severe drought conditions and lack of blooming plants across the Mojave Desert (US Drought Monitor, 2020). As shown in Table 1: Seasonal Precipitation, the rainy season prior to the spring of 2018 only produced 2.32 inches of precipitation.

4.3 2019

Insignia performed the second year of special-status plant surveys for the Project in the spring of 2019 (i.e., Survey Year 2), which received a comparatively high amount of precipitation in the preceding rainy season, as shown in Table 1: Seasonal Precipitation. Two rounds of surveys were conducted in the spring of 2019. A third round of surveys was planned for September 2019, following the monsoon rains. However, as shown in Table 1: Seasonal Precipitation the summer of 2019 was exceptionally dry, and monsoon rains had not fallen on the majority of the Impact Areas. Therefore, the emergence and bloom of fall annuals (special-status or otherwise) were not expected. However, because the 2017 post-monsoon surveys were conducted in an excellent rain year, the BLM concurred that another round of post-monsoon surveys was not necessary and that the special-status plant surveys for the Project were thus concluded.

5 – METHODS

For the purposes of this Report, special-status plant species are defined as follows:

- Federally listed species (i.e., plants listed as threatened or endangered under the federal Endangered Species Act [FESA])
- Species considered to be “sensitive” by the BLM
- State-listed species (i.e., plants listed as threatened or endangered under the California Endangered Species Act [CESA]).
- Species that are candidates for possible future listing as threatened or endangered under the FESA (50 Code of Federal Regulations Part 17; Federal Register Vol. 64, No. 205, pages 57533-57547, October 25, 1999) and under the CESA (California Fish and Game Code § 2068)
- Species considered to be critically imperiled (S1), imperiled (S2), or vulnerable (S3) under the Nevada Natural Heritage Program (NNHP)
- Plants that meet the definition of rare or endangered under the California Environmental Quality Act (CEQA) (14 California Code of Regulations [CCR] § 15380 [b] and [d]), including the following:
 - Species considered by the CNPS to be rare, threatened, or endangered in California (i.e., California Rare Plant Ranks [CRPRs] 1A, 1B, 2A, 2B, and 3). Some CRPR 4 species also meet the criteria to be analyzed under CEQA if cumulative impacts are significant enough to affect their overall rarity, based on CEQA Guidelines §15125 (c) and/or §15380. However, none of the plant species with CRPR 4 listing statuses mentioned in this Report are subject to consideration under CEQA. Therefore, they are included in this Report for informational purposes only.
 - Plants that are considered a locally significant species, which is a species that is not rare from a statewide perspective, but is rare or uncommon in a local context, such as within a county or region (14 CCR § 15125 [c]), or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G).

5.0 BACKGROUND RESEARCH

Prior to conducting the surveys, Insignia botanists reviewed background literature and searched relevant databases. This included a review of spatial data, survey results from the Special-Status Plant Species Survey Report (Insignia 2017) and the Supplemental Special-Status Plant Species Survey Report (Insignia 2018) for the Project, local flora guides, survey protocols, and geological data for the Survey Area from the U.S. Geological Survey (USGS). Dr. James Andre, Director of the Sweeney Granite Mountains Desert Research Center, also provided expert botanical advice on local special-status plant species’ occurrence information. The California Natural Diversity

Database (CNDDDB) (California Department of Fish and Wildlife [CDFW] 2019) and the NNHP database (Nevada Department of Conservation and Natural Resources [DCNR] 2019) were queried for special-status plant species occurrences within 5 miles of the Project. Insignia also performed a 56-quadrangle search of the CNPS Inventory of Rare and Endangered Plants of California (CNPS 2019b) and queried the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system (USFWS 2019) for a list of federally endangered, threatened, and candidate plant species that may occur within or near the Survey Area.

This background research generated a list of 203 special-status plant species that have a potential to occur in the Survey Area. This list of species was provided in the 2016 Special-Status Plant Species Survey Report and the 2017 Supplemental Special-Status Plant Species Survey Report for the Project. This list was refined by comparing the species' ranges and habitat requirements with the location of the Survey Area, the habitat types within it, and the results of previous surveys for the Project to create a target list of species with a higher likelihood to occur. This refined target list is provided in Section 6.0 Background Research.

5.1 FIELD SURVEY

The surveys were conducted in accordance with guidelines published by the CNPS (2001), CDFW (2018), and USFWS (1996), which state the following:

- Surveys should be conducted at the proper time of year when locally significant plants are both evident and identifiable
- Surveys must be floristic in nature, meaning that every plant taxon observed must be identified to the taxonomic level necessary to determine its rarity and listing status
- Surveys must be conducted in a manner that is consistent with conservation ethics and accepted plant collection and documentation techniques

Surveys were focused on species that were determined to be likely to occur, based on the background research, and those species that were identified in the 2016 and 2017 special-status plant surveys for the Project.

5.1.0 Reference Population Visits

Immediately prior to each round of surveys, Insignia botanists visited reference populations to determine the blooming condition of potentially occurring special-status plants to ensure that they were flowering and identifiable at the time of the survey. Reference population visits also allowed the surveyors to obtain a search image of the target species and to identify associated species and habitat characteristics.

5.1.1 Surveys

Botanists walked transects through the entire Survey Area and closely examined microhabitats that were more likely to support special-status plants. Plants were counted individually where possible. All individuals of the same species within an approximately 10-foot radius were counted and recorded as single point using a sub-meter global positioning system (GPS) unit.

When populations covered a larger area, the extent of the population was mapped as a polygon using a sub-meter GPS unit and was attributed with the quantity of individuals within the polygon. If the number of individuals were too numerous to count, the population size was estimated and attributed to the polygon. To capture the extent of a population, polygons occasionally extended outside the Survey Area. Occurrences incidentally observed outside of, but in close proximity to the Survey Area boundary, were also included. Plant species were only mapped in the state in which they have a special-status designation (e.g., Coves' cassia was observed in the Survey Area in Nevada, but the species only carries a listing status in California; therefore, this species was not mapped in Nevada, where it had no special status). Table 4: 2019 Survey Dates and Personnel provides the dates and survey personnel for each round of the 2019 surveys.

Table 4: 2019 Survey Dates and Personnel

2019 Survey Round	Dates	Surveyors
1	March 26 to April 7	Karin Edwards, Frankie Coburn, Christina Congedo, and Sarah Willbrand
2	April 20 to May 1	Karin Edwards, Frankie Coburn, Glenn Rink, and Tim Sullivan

6 – RESULTS

6.0 BACKGROUND RESEARCH

Based on the background research, the list of special-status species with a potential to occur in the Impact Areas was refined by comparing the species' ranges and habitat requirements with the location of the Survey Area, the habitat types within it, technical advice from Dr. James Andre, and the results of previous surveys for the Project. Target species lists were developed for the portions of the Impact Areas in California and in Nevada. The target list for California included the following 36 species:

- Appressed muhly (*Muhlenbergia appressa*)
- Beaver Dam breadroot (*Pedimelum castoreum*)
- Booth's evening-primrose (*Eremothera boothii* ssp. *boothii*)
- Clokey's cryptantha (*Cryptantha clokeyi*)
- Coves' cassia (*Senna covesii*)
- Creamy blazing star (*Mentzelia tridentata*)
- Darlington's blazing star (*Mentzelia puberula*)
- Desert beardtongue (*Penstemon pseudospectabilis* ssp. *pseudospectabilis*)
- Desert bedstraw (*Galium proliferum*)
- Emory's crucifixion-thorn (*Castela emoryi*)

- Golden-rayed pentachaeta (*Pentachaeta aurea* ssp. *aurea*)
- Harwood's eriastrum (*Eriastrum harwoodii*)
- Latimer's woodland gilia (*Saltugilia latimeri*)
- Limestone beardtongue (*Penstemon calcareus*)
- Lobed ground-cherry (*Physalis lobata*)
- Mojave menodora (*Menodora spinescens* var. *mohavensis*)
- Mojave paintbrush (*Castilleja plagiotoma*)
- Narrow-leaved yerba santa (*Eriodictyon angustifolium*)
- Nevada onion (*Allium nevadense*)
- Parry's spurge (*Euphorbia parryi*)
- Pinyon rockcress (*Boechera dispar*)
- Playa milk-vetch (*Astragalus allochrous* var. *playanus*)
- Purple-nerve cymopterus (*Cymopterus multinervatus*)
- Rosy two-toned beardtongue (*Penstemon bicolor* ssp. *roseus*)
- Rough menodora (*Menodora scabra* var. *scabra*)
- Rusby's desert-mallow (*Sphaeralcea rusbyi* var. *eremicola*)
- Salina Pass wild-rye (*Elymus salina*)
- Short-joint beavertail (*Opuntia basilaris* var. *brachyclada*)
- Slender cottonheads (*Nemacaulis denudata* var. *gracilis*)
- Small-flowered androstephium (*Androstephium breviflorum*)
- Spiny cliff-brake (*Pellaea truncata*)
- Spiny-hair blazing star (*Mentzelia tricuspis*)
- Stephens' beardtongue (*Penstemon stephensii*)
- Utah beardtongue (*Penstemon utahensis*)
- Violet twining snapdragon (*Maurandella antirrhiniflora*)
- White-margined beardtongue (*Penstemon albomarginatus*)

The following five species were targeted for the Project locations in Nevada:

- Chalk liveforever (*Dudleya pulverulenta* ssp. *arizonica*)
- Clokey's pincushion (*Coryphantha vivipara* var. *rosea*)
- Mojave milkweed (*Asclepias nyctaginifolia*)
- Reveal's buckwheat (*Eriogonum contiguum*)
- Rosy two-toned beardtongue (*Penstemon bicolor* ssp. *roseus*)

6.1 FIELD SURVEY

6.1.0 Reference Population Visits

Insignia botanists visited nearby known populations of the following 10 species:

- Coves' cassia
- Golden-rayed pentachaeta
- Matted cholla (*Grusonia parishii*)
- Mojave menodora (*Menodora spinescens* var. *mohavensis*)

- Mojave milkweed (*Asclepias nyctaginifolia*)
- Mojave paintbrush
- Slender cottonheads
- Small flowered androstephium
- Spiny-hair blazing star
- Utah beardtongue

These species were identifiable at the time of the reference population visit and were thereby assumed to be identifiable in the Survey Area, if present. Botanists prioritized visiting reference populations for species that had the highest potential to occur.

6.1.1 Special-Status Plants

Insignia botanists observed 11 special-status plant species during the 2019 surveys, as described in this section and summarized in Table 5: Special-Status Plant Species Observed. The spring 2019 surveys resulted in a greater number of individuals of some species in existing populations, but no new distinct populations were discovered, except for yucca buckwheat (*Eriogonum plumatella*). The observation locations within the Survey Area are shown on Attachment B: Locations of Special-Status Plants Observed. A complete list of plant taxa, including subspecies and varieties, observed within the Survey Area during the two rounds of surveys is presented in Attachment C: Inventory of Plant Species Observed. Representative photographs are provided in Attachment D: Special-Status Plant Species Photographs. The following subsections describe the 11 special-status plant species observed within the Survey Area.

Appressed Muhly

Appressed muhly (*Muhlenbergia appressa*) is a CRPR 2B.2 annual herb species in the grass family (Poaceae) that occurs on rocky slopes and open canyon bottoms in coastal scrub, Mojavean desert scrub, and valley/foothill grasslands from 65 to 5,250 feet in elevation. The blooming period is from April to May.

A population of 13 appressed muhly plants was observed during the 2019 surveys along the Lugo-Mohave 500 kV Transmission Line in California. This species was found around one stringing site in Foshay Pass in the Providence Mountains and was growing on Rock outcrop-Lithic Torriorthents soils and in the *Eriogonum fasciculatum* Shrubland Alliance. This species was also recorded in Foshay Pass during the 2016 surveys.

Golden-Rayed Pentachaeta

Golden-rayed pentachaeta is a CRPR 4.2 annual herb species in the aster family (Asteraceae). This species occurs in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, and valley and foothill grasslands between 260 and 6,070 feet in elevation. The blooming period for golden-rayed pentachaeta is March to July.

Table 5: Special-Status Plant Species Observed

Common Name	Scientific Name	Listing Status		Approximate Quantity of Individuals Observed		Attachment B Map Page
		California	Nevada	California	Nevada	
Appressed muhly	<i>Muhlenbergia appressa</i>	CRPR 2B.2	Not Ranked	13	--	18
Golden-rayed pentachaeta	<i>Pentachaeta aurea</i> ssp. <i>aurea</i>	CRPR 4.2	Not Ranked	2,729	--	1, 2, 3, 4
Mojave menodora	<i>Menodora spinescens</i> var. <i>mohavensis</i>	BLM CRPR 1B.2	Not Ranked	1,208	--	6, 7, 8, 9, 10, 11, 12
Mojave paintbrush	<i>Castilleja plagiotoma</i>	CRPR 4.3	Not Ranked	17	--	5
Rosy two-toned beardtongue	<i>Penstemon bicolor</i> ssp. <i>roseus</i>	BLM CRPR 1B.1	BLM S3	--	1	24
Rusby's desert-mallow	<i>Sphaeralcea rusbyi</i> var. <i>eremicola</i>	BLM CRPR 1B.2	Not Ranked	387	--	16, 17, 18, 19, 20, 21
Short-jointed beavertail	<i>Opuntia basilaris</i> var. <i>brachyclada</i>	BLM CRPR 1B.2	Not Ranked	1	--	1
Slender cottonheads	<i>Nemacaulis denudata</i> var. <i>gracilis</i>	CRPR 2B.2	Not Ranked	1	--	15
Small flowered androstephium (= pink funnel lily)	<i>Androstephium breviflorum</i>	CRPR 2B.2	Not Ranked	56	--	13, 14
Spiny-hair blazing star	<i>Mentzelia tricuspis</i>	CRPR 2B.1	Not Ranked	22	--	22
Yucca buckwheat	<i>Eriogonum plumatella</i>	Not Ranked	S3	--	10	23

Notes:

- Plant species were only mapped in the state in which they have a special-status designation.

Special-Status Plant Species Survey Report II

- This listen status codes are as follows:

BLM Species:

-BLM: Species considered to be “sensitive” by the BLM

CRPRs:

-1B: Rare or endangered in California and elsewhere
-2B: Rare, threatened, or endangered in California, but more common elsewhere
-4: Watch list – plants of limited distribution

CRPR Threat Code:

-0.1: Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)
-0.2: Moderately threatened in California (20 to 80 percent of occurrences threatened/moderate degree and immediacy of threat)
-0.3: Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known)

Nevada NatureServe Rank:

- S3: Vulnerable – At moderate risk of extirpation in the jurisdiction due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors.

DRAFT

Approximately 2,729 golden-rayed pentachaeta individuals were observed in the Survey Area along the Lugo-Mohave 500 kV Transmission Line. These plants were found around multiple work areas in the western portion of the Survey Area near the City of Hesperia, California, on both sides of the California Aqueduct. This species occurred in multiple vegetation communities including *Achnatherum speciosum* Herbaceous Alliance, *Ephedra viridis* Shrubland Alliance, *Ericameria nauseosa* Shrubland Alliance, *Ericameria linearifolia* - *Cleome isomeris* Shrubland Alliance, *Juniperus californica* Woodland Alliance, and also in areas mapped as Developed. The golden-rayed pentachaeta was found growing in the following two soil types: Cajon-Wasco, Cool Complex, 2 To 9 Percent Slopes and Gullied Land-Haploxeralfs Association. This species was documented during the 2016 surveys, but was not included in the final draft of the Special-Status Plant Survey Report (Insignia 2018), due to its lack of a special status designation under CEQA. It is included here for informational purposes only.

Mojave Menodora

Mojave menodora is a BLM sensitive species and a CRPR 1B.2 species in the olive family (Oleaceae). This perennial, deciduous shrub grows on andesite substrates on rocky desert hillsides and canyons in Mojavean desert scrub at elevations ranging from 2,200 to 6,500 feet. The blooming period for Mojave menodora is April to May, but it is identifiable year-round.

Approximately 1,208 Mojave menodora individuals were observed growing in California along the Lugo-Mohave 500 kV Transmission Line during the 2019 surveys. These plants were found growing around multiple work areas south of Interstate (I-) 40, in the vicinity of the Rodman Mountains and Fry Mountains. The vegetation communities in which the species was growing were *Coleogyne ramosissima* Shrubland Alliance, *Larrea tridentata* Shrubland Alliance and *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance; the species was also found growing on Developed land. Soil types were Trigger-Rock outcrop-Calvista; Burntshack-Hypoint association, 2 to 4 percent slopes; Arizo association, flooded, 2 to 4 percent slopes; Burntshack-Hypoint association, 2 to 4 percent slopes; Lavabed-Dalvord association, 8 to 50 percent slopes; and Haleburu-Noble Pass complex, 15 to 50 percent slopes. Mojave menodora was also mapped in this area during the 2016 and 2017 surveys.

Mojave Paintbrush

Mojave paintbrush is a CRPR 4.3 perennial herb in the broomrape family (Orobanchaceae). This species grows in dry sagebrush scrub and pinyon-juniper woodland between 1,000 and 8,200 feet in elevation. The blooming period for this species is April to June.

A population of 17 individuals was observed during the 2019 surveys in California along the Lugo-Mohave 500 kV Transmission Line. These plants were documented at two work areas in the Ord Mountains and approximately 4 miles east of the Mojave River. This species was growing in Cushenbury-Crafton-Rock Outcrop Complex, 15 To 50 Percent Slopes soils, in Developed land, and in the *Prunus fasciculata* - *Salazaria mexicana* Shrubland Alliance. Mojave paintbrush was documented during the 2016 surveys, as well, but was not included in the final draft of the Special-Status Plant Survey Report (Insignia 2018), due to its lack of a special status designation under CEQA. Because it does not meet the qualifications for protection under CEQA, it is included here for informational purposes only.

Rosy Two-Toned Beardtongue

Rosy two-toned beardtongue (*Penstemon bicolor* ssp. *roseus*) is a BLM sensitive species, a CRPR 1B.2 species, and a Nevada S3 species. It is a perennial herb in the plantain family (Plantaginaceae) that occurs in gravelly, rocky, or disturbed soils in Mojavean desert scrub and Joshua tree woodland of California, Arizona, and Nevada at elevations ranging from 2,300 to 5,000 feet. The blooming period for this species is in May.

One rosy two-toned beardtongue plant was observed during the 2019 surveys in Nevada along the Eldorado-Mohave 500 kV Transmission Line. This individual was growing in a large ephemeral wash in a work area located approximately 3 miles west of Veterans Memorial Highway in Eldorado Valley. The soil type was Arizo-Peskah-Crosgrain Association and the vegetation community at the site was *Ericameria paniculata* Shrubland Alliance. Rosy two-toned beardtongue was documented in the same area during the 2016 surveys.

Rusby's Desert-Mallow

Rusby's desert-mallow (*Sphaeralcea rusbyi* var. *eremicola*) is a CRPR 1B.2 perennial herb in the mallow family (Malvaceae) that occurs in Mojavean desert scrub and Joshua tree woodlands. It is endemic to California, and occurs at elevations ranging from 3,200 to 5,400 feet. The blooming period for Rusby's desert-mallow is from March to June.

A population of approximately 387 Rusby's desert-mallow plants were observed during the 2019 surveys in California along the Eldorado-Mohave 500 kV Transmission Line. These plants were observed in Foshay Pass in the Providence Mountains and immediately to the east of the Providence Mountains in Clipper Valley. This species was growing in several vegetation communities including *Ambrosia salsola* – *Bebbia juncea* Shrubland Alliance, *Ericameria nauseosa* Shrubland Alliance, *Eriogonum fasciculatum* Shrubland Alliance, and *Yucca schidigera* Shrubland Alliance, as well as Developed areas. Rusby's desert-mallow was found growing in the following three soil types: Cajon-Arizo, Nickel-Bitter-Arizo, Rock outcrop-Lithic Torriorthents. The species was documented at the same location during the 2016 surveys. It is possible that these plants are intergrading with a common species, as the leaves exhibited intermediate characteristics with roughleaf apricot mallow (*Sphaeralcea ambigua* var. *rugosa*), and these species are known to hybridize.

Short-Jointed Beavertail

Short-jointed beavertail (*Opuntia basilaris* var. *brachyclada*) is a BLM sensitive species and a CRPR 1B.2 perennial stem succulent in the cactus family (Cactaceae) that is endemic to California, and occurs in Los Angeles and San Bernardino Counties. This cactus inhabits chaparral; Mojavean desert scrub; and Joshua tree, pinyon, and juniper woodlands ranging in elevation from 1,400 to 5,900 feet. The blooming period is from April to August.

One short-jointed beavertail individual was found during the 2019 surveys in the work area for one tower in California along the Lugo-Mohave 500 kV Transmission Line. This plant was observed in the foothills of the San Bernardino Mountains south of the City of Hesperia and west of the California Aqueduct. Soils at the site were Cajon-Wasco, Cool Complex, 2 To 9 Percent Slopes and the vegetation community was *Juniperus californica* Woodland Alliance. Short-

jointed beavertail was documented in this same area during the 2016 surveys. This individual exhibited characteristics of a common species—*Opuntia basilaris* var. *basilaris*—and may be considered a hybrid in this location, as this location is a zone of introgression. This plant may be a hybrid with beavertail cactus (*Opuntia basilaris*), as this site is located in a zone of introgression between the species.

Slender Cottonheads

Slender cottonheads is a CRPR 2B.2 annual herb in the buckwheat family (Polygonaceae) that occurs in coastal dunes, desert dunes, and Sonoran desert scrub in California, Arizona, and Baja California at elevations from 160 to 1,300 feet. The blooming period for slender cottonheads is from March to May.

One slender cottonheads plant was observed during the 2019 surveys in California along the Lugo-Mohave 500 kV Transmission Line. The plant was located along the southern edge of the Kelso Dunes, approximately 1 mile west of Kelso Dunes Road and off of Kelbaker Road. The soil type was Nickel-Bitter-Arizo, and the land cover was Developed. Slender cottonheads was documented at this location during the 2016 surveys.

Small Flowered Androstephium

Small flowered androstephium (= pink funnel lily) is a CRPR 2B.2 species in the brodiaea family (Themidaceae). This species is a perennial herb (bulb) that grows in desert dunes and bajadas in Mojavean desert scrub. Small flowered androstephium blooms in March and early April and is generally found at elevations ranging from 330 to 5,250 feet.

Approximately 56 small flowered androstephium plants were observed during the 2019 surveys in California. The plants were found in two general locations. One population was located along the Lugo-Mohave 500 kV Transmission Line in Broadwell Valley, north of the community of Ludlow. The second population was documented within the work area for the proposed Newberry Springs Series Capacitor. Because this is a perennial bulb species, some of the plants observed were in vegetative form only, meaning that just the leaves were visible above the ground. Although a positive identification could be made for most of them, the younger leaves were difficult to differentiate from similar species. The plants were only found growing in Rositas-Carrizo soils. The species was mapped in *Larrea tridentata* Shrubland Alliance, *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance, and Developed areas. Small flowered androstephium was also documented in this area during the 2017 surveys.

Spiny-Hair Blazing Star

Spiny-hair blazing star is a CRPR 2B.1 annual herb in the loasa family (Loasaceae) that occurs in sandy, gravelly substrates on slopes and washes in the Mojavean desert scrub at elevations ranging from 500 to 4,200 feet. The blooming period for spiny-hair blazing star is from March to May.

A population of 22 spiny-hair blazing star individuals was observed during the 2019 surveys in California along the Lugo-Mohave 500 kV Transmission Line. The population was confined to one work area on the western edge of the Dead Mountains in California, approximately 3 miles

east of Veterans Memorial Highway and near the border of Nevada. The soil type at this site was Trigger-Rock outcrop-Calvista; the vegetation consisted of *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance and developed land. Spiny-hair blazing star was documented in the same location during the 2016 surveys.

Yucca Buckwheat

Yucca buckwheat is a Nevada S3 shrub in the buckwheat family (Polygonaceae). The species occurs in sand or gravel substrates in creosote bush scrub, shadscale scrub, Joshua tree woodland, and pinyon-juniper woodland between 1,300 and 5,500 feet in elevation. The blooming period for yucca buckwheat is from April to October.

A population of 10 yucca buckwheat individuals was observed during the 2019 surveys in Nevada along the Eldorado-Mohave 500 kV Transmission Line. This population was located around one stringing site in the southern foothills of the Dead Mountains of Nevada, approximately 11 miles southwest of Mohave Substation. The plants were growing in Filaree-Seanna association soils and in two vegetation communities: *Senegalia greggii* – *Hyptis emoryi* – *Justicia californica* Shrubland Alliance and *Yucca schidigera* Shrubland Alliance. Yucca buckwheat was not documented in previous surveys.

7 – DISCUSSION

The spring 2019 surveys were conducted following above-average rains in the preceding winter and spring months, which caused an increase in blooms across the Mojave Desert. Despite the increased rains, only one additional special-status plant species, yucca buckwheat, was observed that had not been documented during the 2016 or 2017 surveys. Furthermore, although the spring 2019 surveys resulted in a greater number of individuals of some species in existing populations, no new distinct populations were discovered, except for the yucca buckwheat.

Several species that were observed during the 2016 and 2017 surveys were not observed in 2019. In part, this is because the 2016 Survey Area was almost three times larger than the 2019 Survey Area, as shown in Table 3: Special-Status Plant Survey Summary. Further, the third round of 2017 surveys was conducted in the fall, which captured species that were not observable during the 2019 surveys, which were limited to the spring. Species reported during the 2016 and 2017 surveys that were not observed in 2019 include:

- Abrams' spurge (*Euphorbia abramsiana*),
- Clokey's cryptantha (*Cryptantha clokeyi*),³
- Coves' cassia (*Senna covesii*),
- Matted cholla (*Grusonia parishii*),
- Mojave milkweed (*Asclepias nyctaginifolia*),
- Narrow-leaved yerba santa (*Eriodictyon angustifolium*),

³ This species may have been misidentified in previous surveys. Further investigation of these populations was conducted in 2019; voucher specimens were collected and sent to an expert. It was determined that most of the *Cryptanthas* in the Survey Area were *C. barbiger a barbiger a*. No *C. clokeyi* individuals were found in 2019.

- Parry's spurge (*Euphorbia parryi*),
- Playa milk-vetch (*Astragalus allochrous* var. *playanus*),
- Salina Pass wild-rye (*Elymus salina*), and
- Spiny cliff-brake (*Pellaea truncata*).

A full discussion of the 2016 and 2017 survey results is provided in the Special-Status Plant Species Survey Report (Insignia 2017) and the Supplemental Special-Status Plant Species Survey Report (Insignia 2018) for the Project.

8 – REFERENCES

- CDFW. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. Online. <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline>. Site visited March 25, 2019.
- CDFW. 2019. CNDDDB Maps and Data. Online. <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data>. Site visited February 25, 2019.
- CGS. 2002. Note 36: California Geomorphic Provinces. Online. http://www.conservation.ca.gov/cgs/Documents/Publications/Note_36.pdf. Site visited April 25, 2019.
- CNPS. 2001. CNPS Botanical Survey Guidelines. Online. <https://www.cnps.org/plant-science/field-protocols-guidelines>. Site visited March 25, 2019.
- CNPS. 2019a. A Manual of California Vegetation Online. Online. <http://vegetation.cnps.org/>. Site visited April 25, 2019.
- CNPS. 2019b. Inventory of Rare and Endangered Plants of California. Online. <http://www.rareplants.cnps.org/>. Site visited February 27, 2019.
- Community Environmental Monitoring Program. Station Summary for Boulder City, Nevada. Online. https://cemp.dri.edu/cgi-bin/cemp_stations.pl?stn=boul. Site visited March 11, 2020.
- Desert Research Institute. 2019. Western Regional Climate Center, Mojave, California. Online. <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5756>. Site visited April 25, 2019.
- Insignia. 2017. *Special-Status Plant Species Survey Report for the Eldorado-Lugo-Mohave Series Capacitor Project*.
- Insignia. 2018. *Supplemental Special-Status Plant Species Survey Report for the Eldorado-Lugo-Mohave Series Capacitor Project*.

- Jepson Flora Project. 2019a. Jepson eFlora: Geographic subdivisions. Online. <http://ucjeps.berkeley.edu/eflora/geography.html>. Site visited April 25, 2019.
- Jepson Flora Project. 2019b. Jepson eFlora. Online. <http://ucjeps.berkeley.edu/eflora/>. Site visited March, April, and May 2019.
- Nevada DCNR. 2019. Nevada Natural Heritage Program. Official species list and data for the Project. March 18, 2019.
- NRCS. 2019. SSURGO Database. Online. https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_053627. Site visited September 26, 2019.
- US Drought Monitor. 2020. Map Archive. Online. <https://droughtmonitor.unl.edu/Maps/MapArchive.aspx>. Site visited April 30, 2020.
- USFWS. 1996. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants*. Online. https://www.fws.gov/sacramento/es/survey-protocols-guidelines/documents/listed_plant_survey_guidelines.pdf. Site visited March 25, 2019.
- USFWS. 2019. IPaC Online System. Online. <https://ecos.fws.gov/ipac/>. Site visited September 23, 2019.
- USGS. 2012. Status and Trends of Land Change in the Western United States—1973 to 2000. Professional Paper 1794–A. Chapter 29. Mojave Basin and Range Ecoregion. Online. https://pubs.usgs.gov/pp/1794/a/chapters/pp1794a_chapter29.pdf. Site visited April 25, 2019.
- USGS. 2019. Precipitation History of the Mojave Desert Region, 1893-2001. Online. <http://pubs.usgs.gov/fs/fs117-03/>. Site visited April 25, 2019.
- Western Region Climate Center. 2020. Station Monthly Summary for Sweeney Granite Mountains Climate Station. Online. <https://wrcc.dri.edu/cgi-bin/rawMAIN.pl?caucgr>. Site visited March 11, 2020.
- Wildland Fire Remote Automated Weather Stations. 2020. Southern California Climate Archives. Online. <https://raws.dri.edu/scaF.html>. Site visited March 11, 2020.

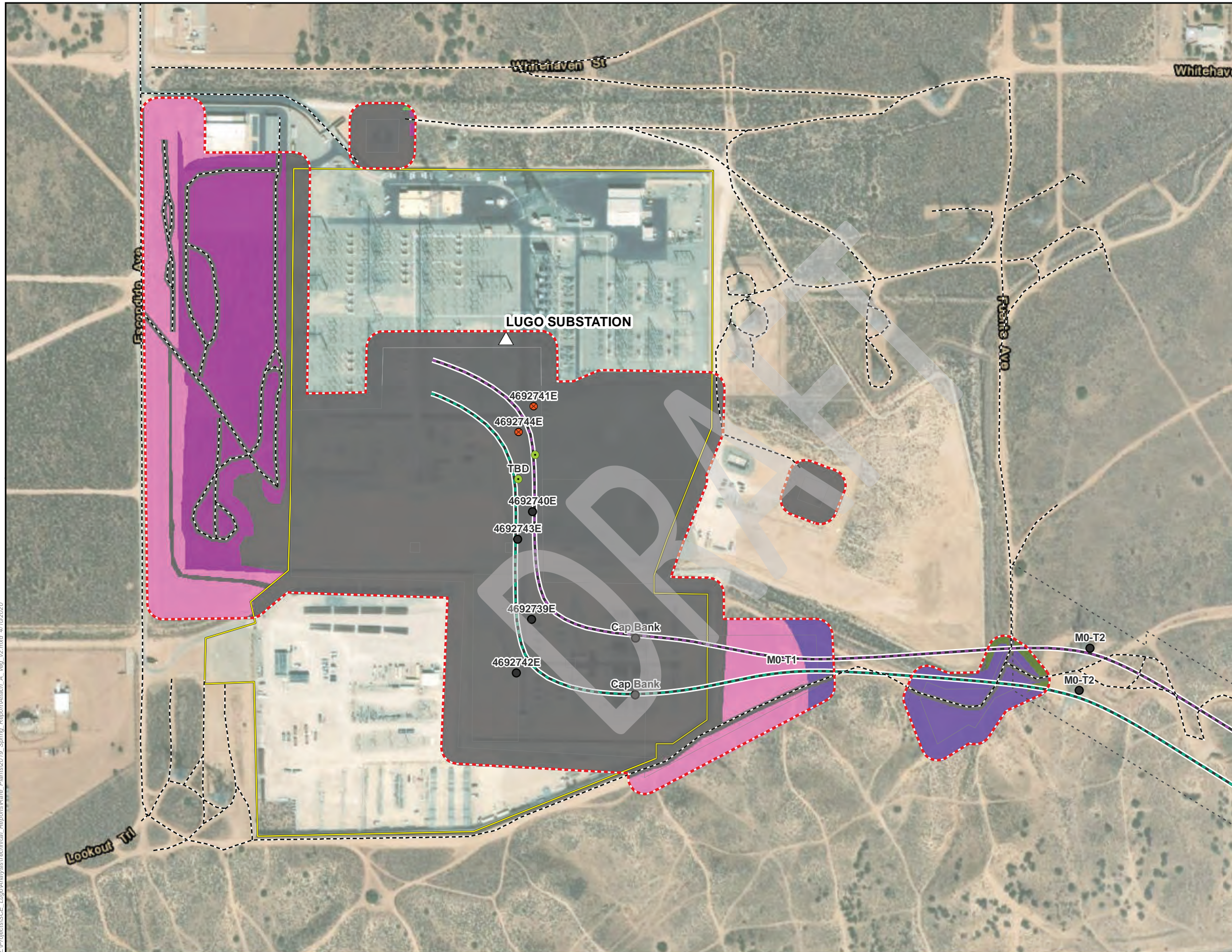
ATTACHMENT A: VEGETATION COMMUNITIES AND LAND COVERS

DRAFT

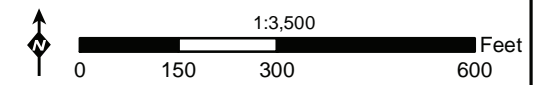
DRAFT

**Attachment A:
Vegetation Communities and Land Covers
Map 1 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**



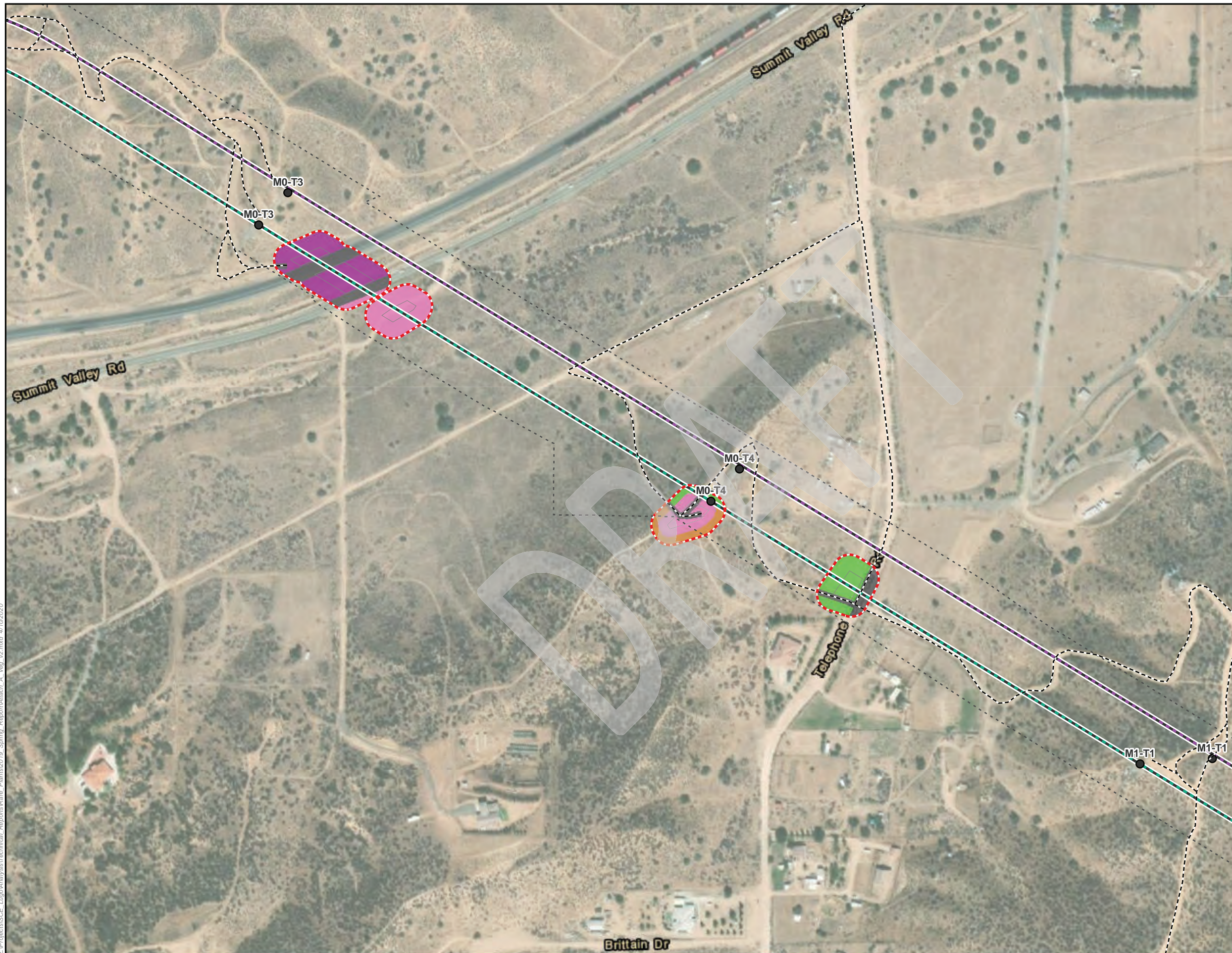
- Survey Area
- Project Components**
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Existing Substation
- Existing Transmission Structure
- New Transmission Structure
- Transmission Structure Removal
- Existing Substation Boundary
- Construction Area
- Right-of-Way
- Access Road
- Vegetation Community/Land Cover**
- Developed
- Ericameria cooperi* Provisional Shrubland Alliance
- Ericameria nauseosa* Shrubland Alliance
- Eriogonum fasciculatum* Shrubland Alliance
- Juniperus californica* Woodland Alliance
- Yucca brevifolia* Woodland Alliance



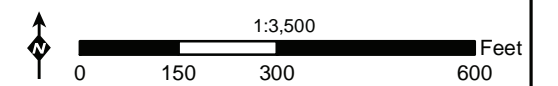
Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 2 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**






- Survey Area
- Project Components**
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Existing Transmission Structure
- Construction Area
- Right-of-Way
- Access Road
- Vegetation Community/Land Cover**
- Adenostoma fasciculatum* Shrubland Alliance
- Developed
- Ericameria cooperi* Provisional Shrubland Alliance
- Ericameria nauseosa* Shrubland Alliance
- Juniperus californica* Woodland Alliance

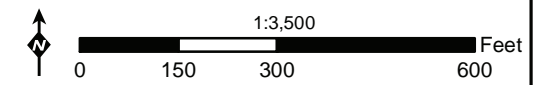
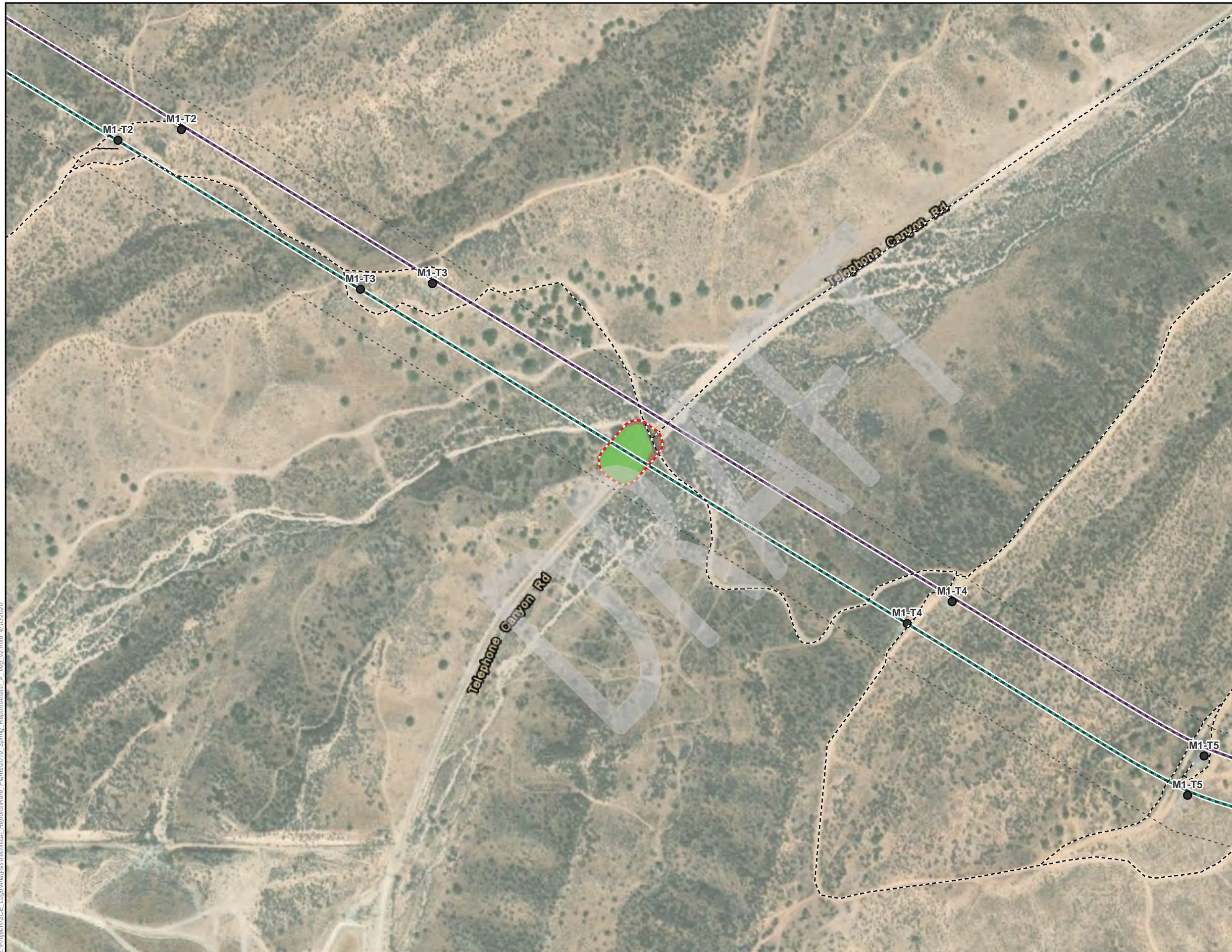


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 3 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Juniperus californica* Woodland Alliance
-  *Prunus fasciculata* - *Salazaria mexicana* Shrubland Alliance



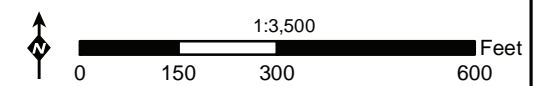
Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 4 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**













- Survey Area
- Project Components**
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Existing Transmission Structure
- Construction Area
- Right-of-Way
- Access Road
- Vegetation Community/Land Cover**
- Achnatherum speciosum* Herbaceous Alliance
- Adenostoma fasciculatum* Shrubland Alliance
- Developed
- Ericameria nauseosa* Shrubland Alliance
- Ericameria linearifolia* - *Cleome isomeris* Shrubland Alliance
- Juniperus californica* Woodland Alliance

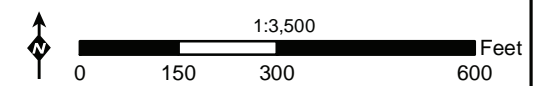


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 5 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Ericameria nauseosa* Shrubland Alliance
-  *Juniperus californica* Woodland Alliance

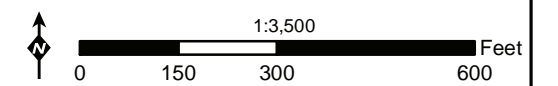
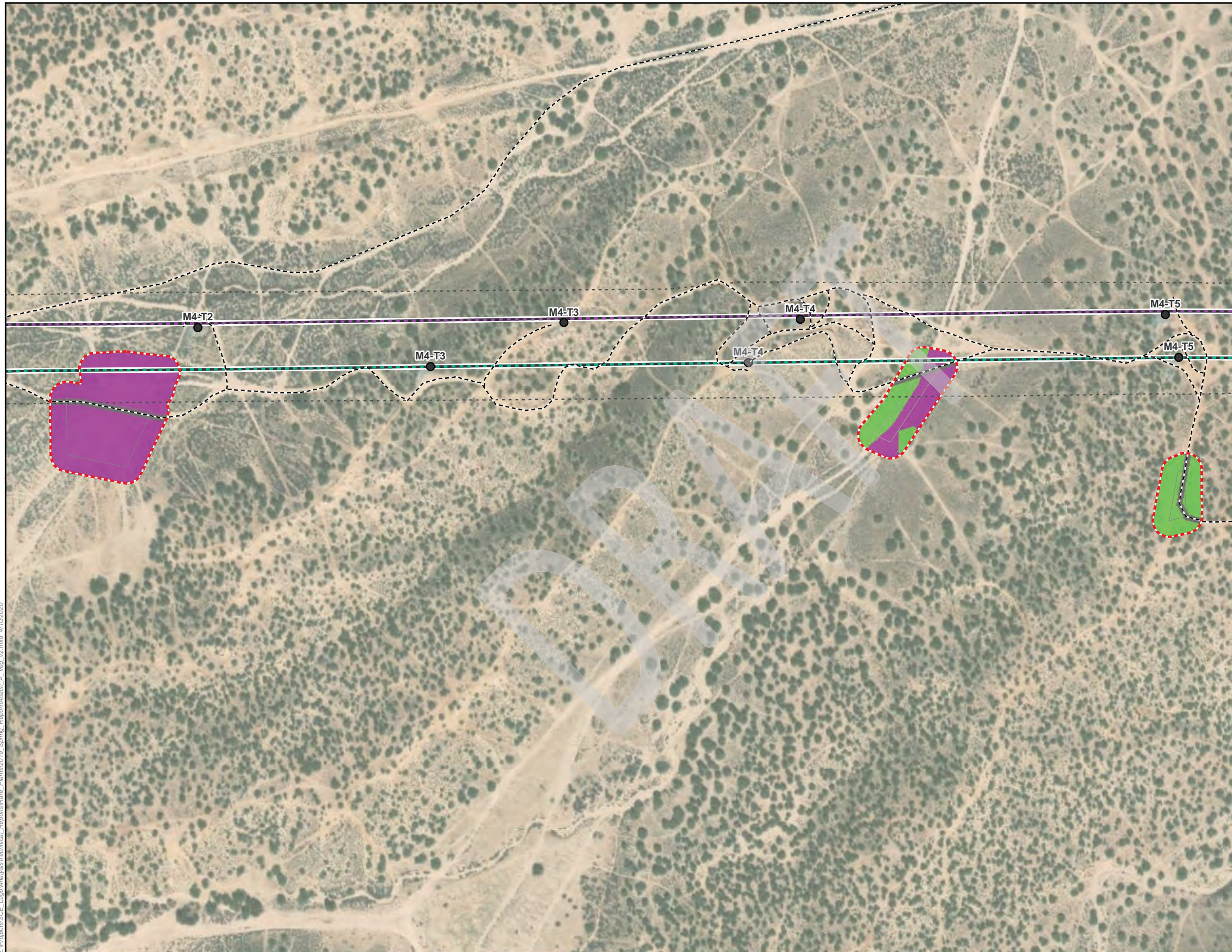


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 6 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**














-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Ericameria nauseosa* Shrubland Alliance
-  *Juniperus californica* Woodland Alliance

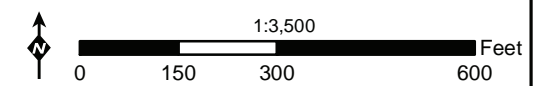
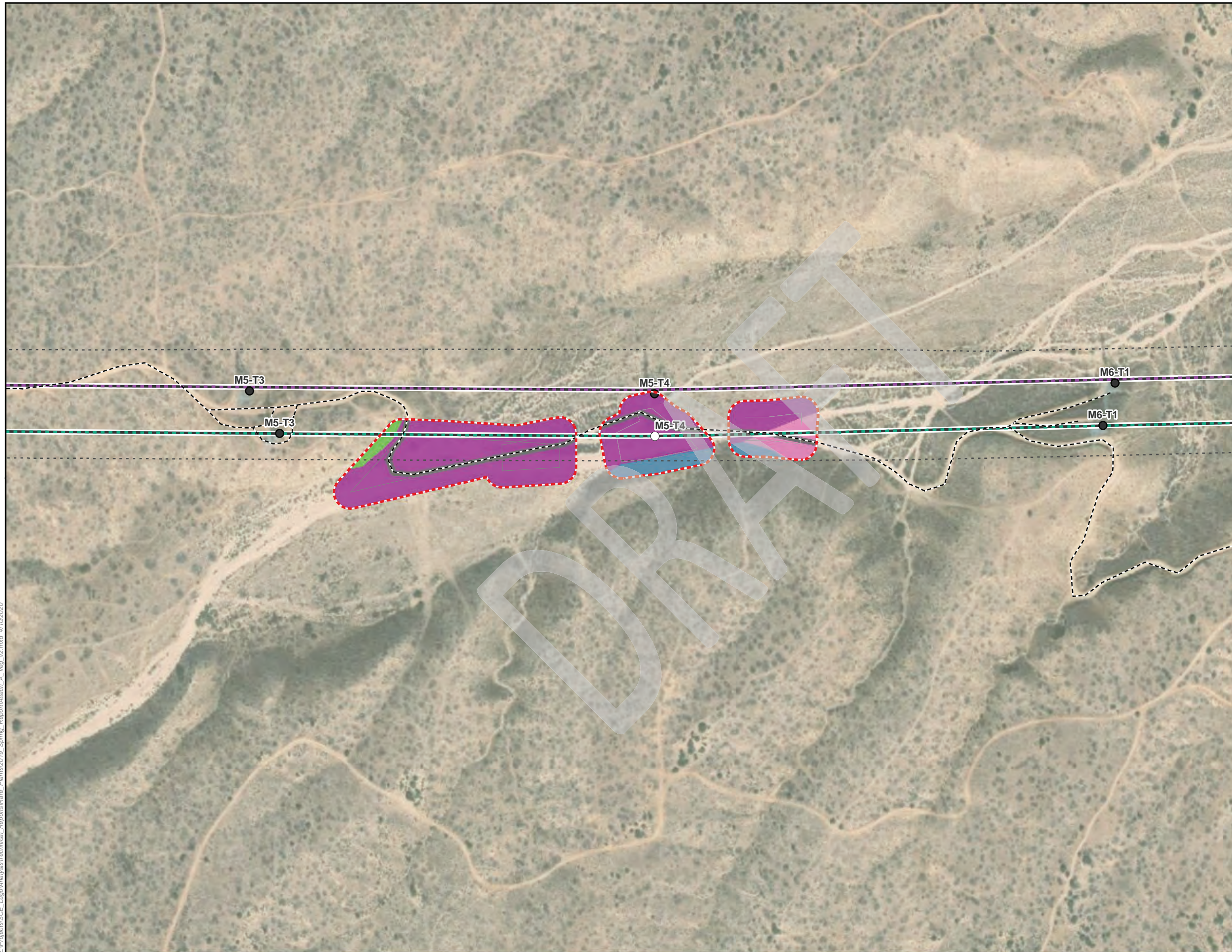


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 7 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**












-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Ephedra viridis* Shrubland Alliance
-  *Ericameria cooperi* Provisional Shrubland Alliance
-  *Ericameria nauseosa* Shrubland Alliance
-  *Juniperus californica* Woodland Alliance

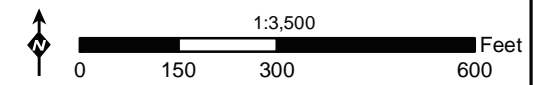
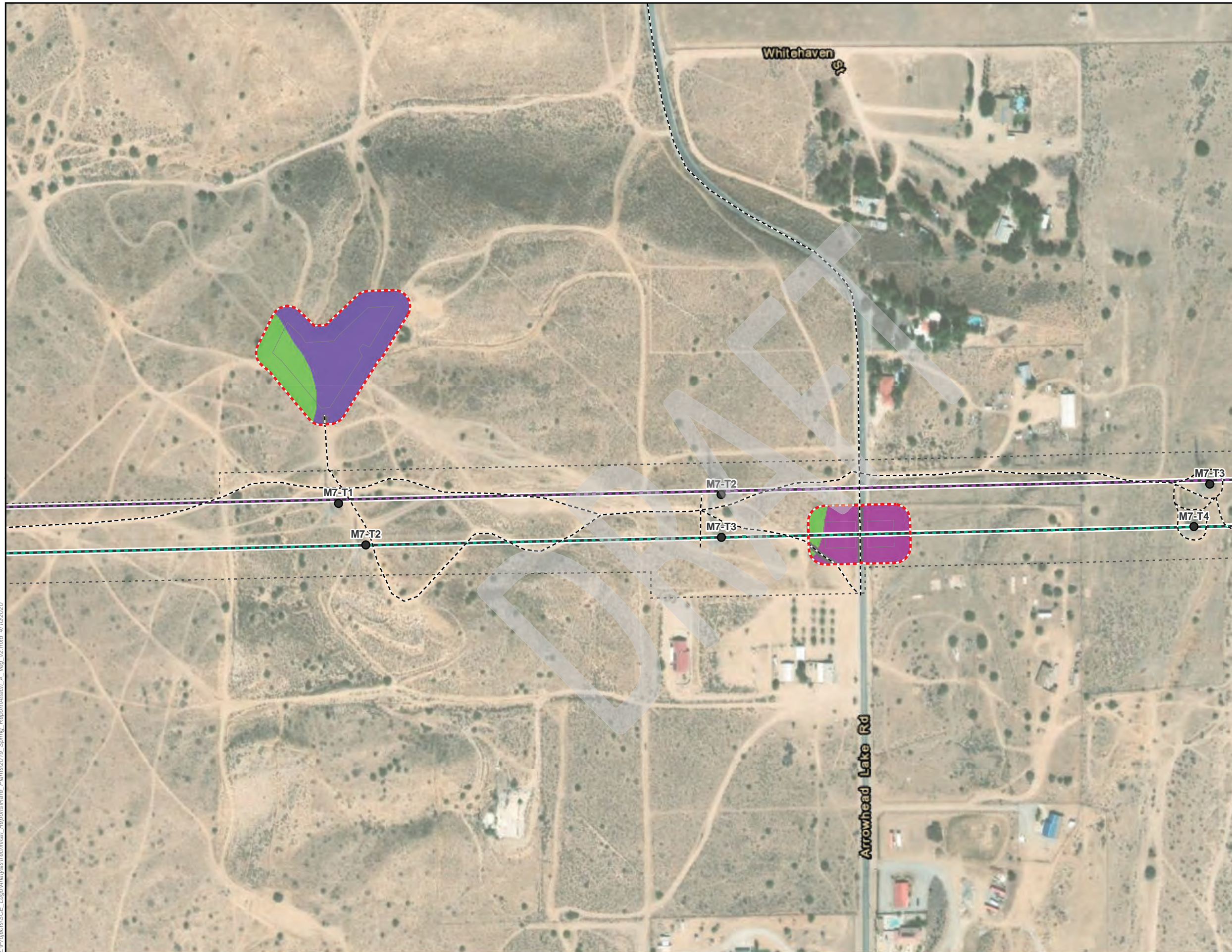


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 8 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Ericameria nauseosa* Shrubland Alliance
-  *Eriogonum fasciculatum* Shrubland Alliance
-  *Juniperus californica* Woodland Alliance



Source: Insignia, 2019; SCE, 2019




Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Repe..._Plants\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

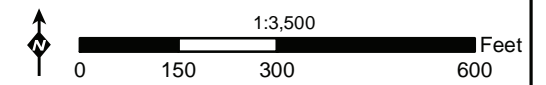
Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Rare_Plants\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020



**Attachment A:
Vegetation Communities and Land Covers
Map 9 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

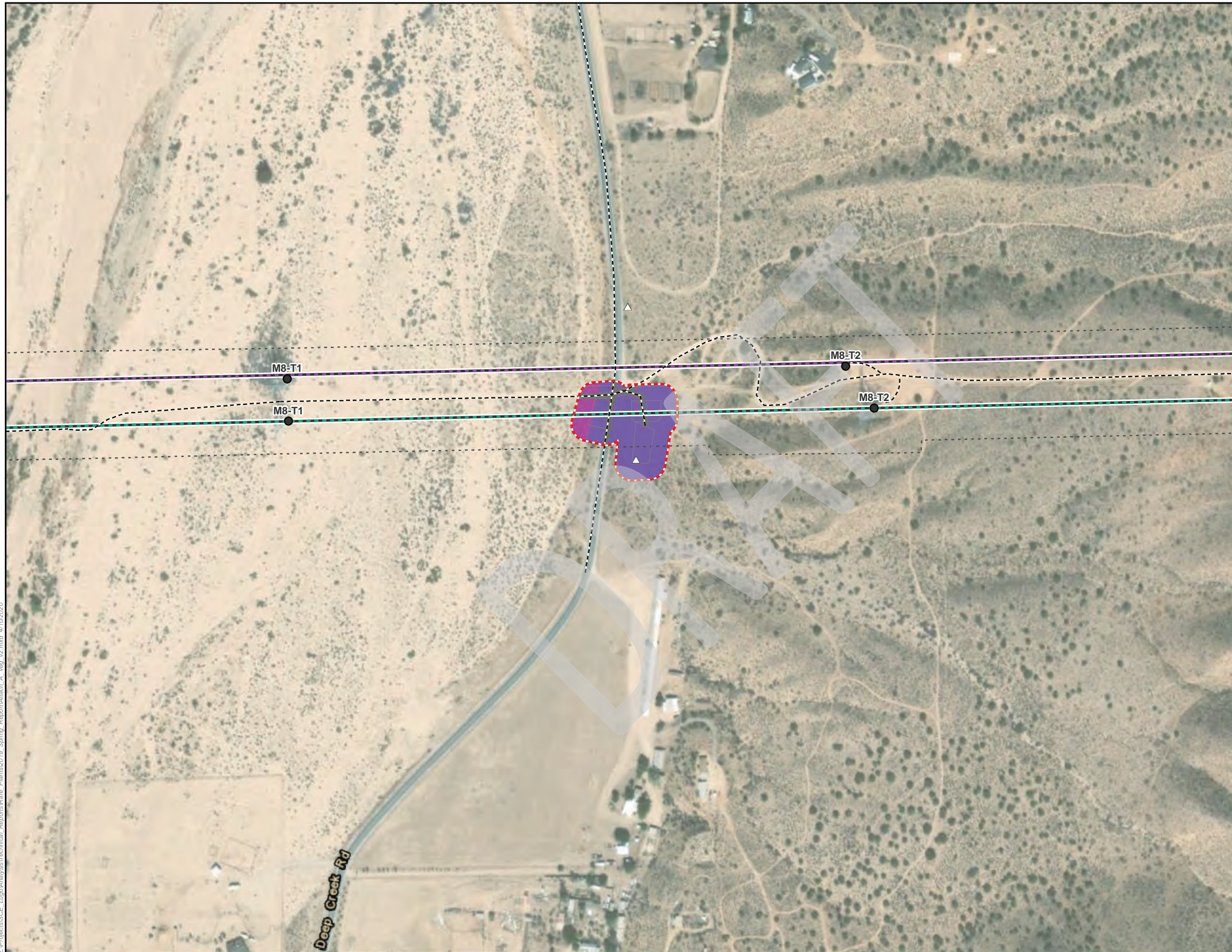
-  Survey Area
-  Access Road
- Vegetation Community/Land Cover**
-  Developed



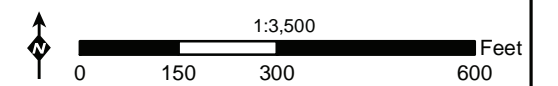
Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 10 of 191**

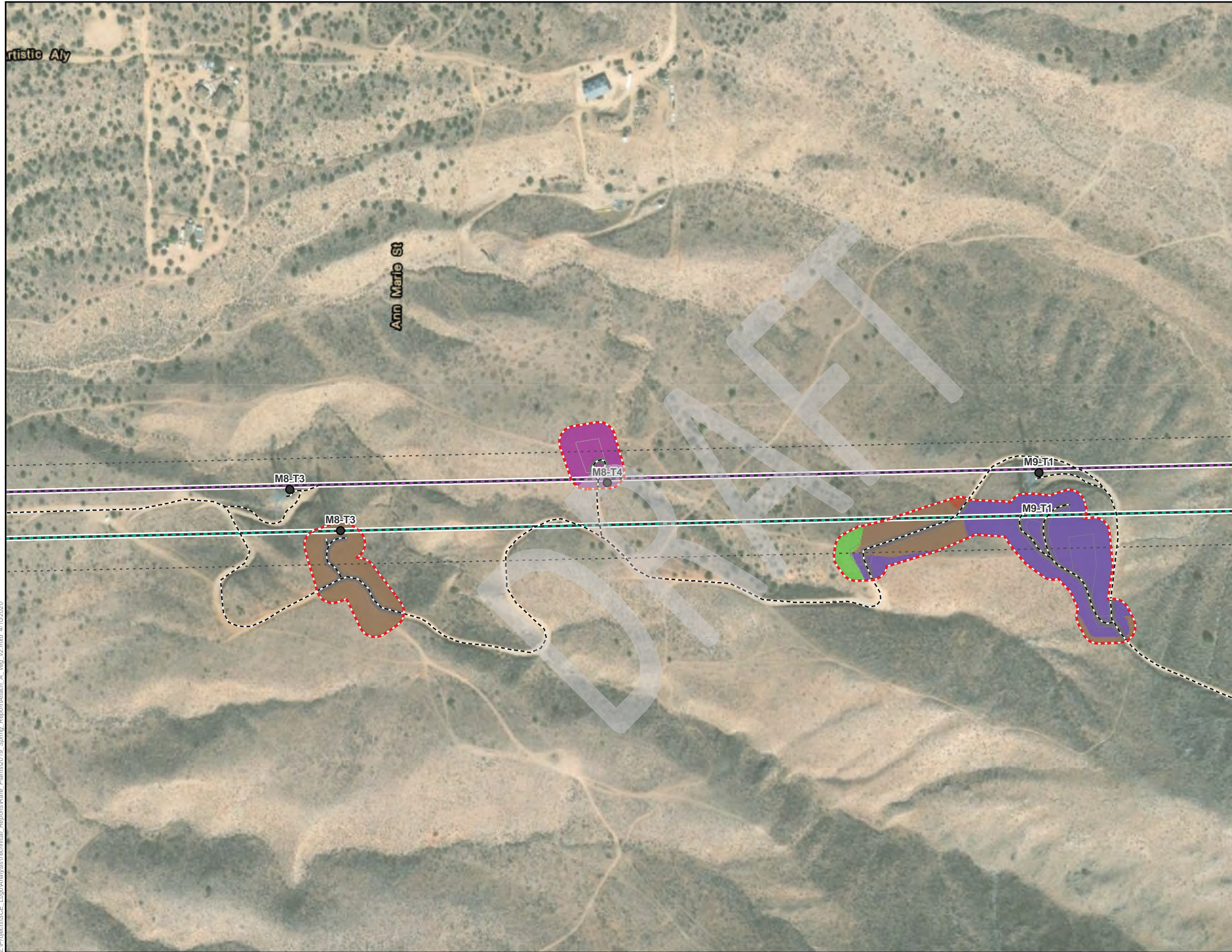
**Eldorado-Lugo-Mohave
Series Capacitor Project**



- Survey Area
- Project Components**
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Existing Transmission Structure
- Modified Distribution Structure
- Construction Area
- Right-of-Way
- Access Road
- Vegetation Community/Land Cover**
- Developed
- Ericameria nauseosa* Shrubland Alliance
- Eriogonum fasciculatum* Shrubland Alliance



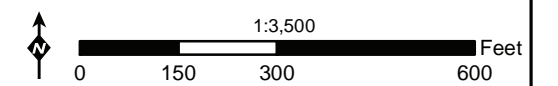
Source: Insignia, 2019; SCE, 2019



**Attachment A:
Vegetation Communities and Land Covers
Map 11 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











- Survey Area
- Project Components**
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Existing Transmission Structure
- Construction Area
- Right-of-Way
- Access Road
- Vegetation Community/Land Cover**
- Developed
- Ephedra nevadensis* - *Lycium andersonii* - *Grayia spinosa* Shrubland Alliance
- Ericameria nauseosa* Shrubland Alliance
- Eriogonum fasciculatum* Shrubland Alliance
- Juniperus californica* Woodland Alliance
- Prunus fasciculata* - *Salazaria mexicana* Shrubland Alliance

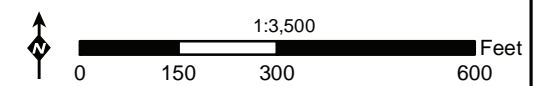
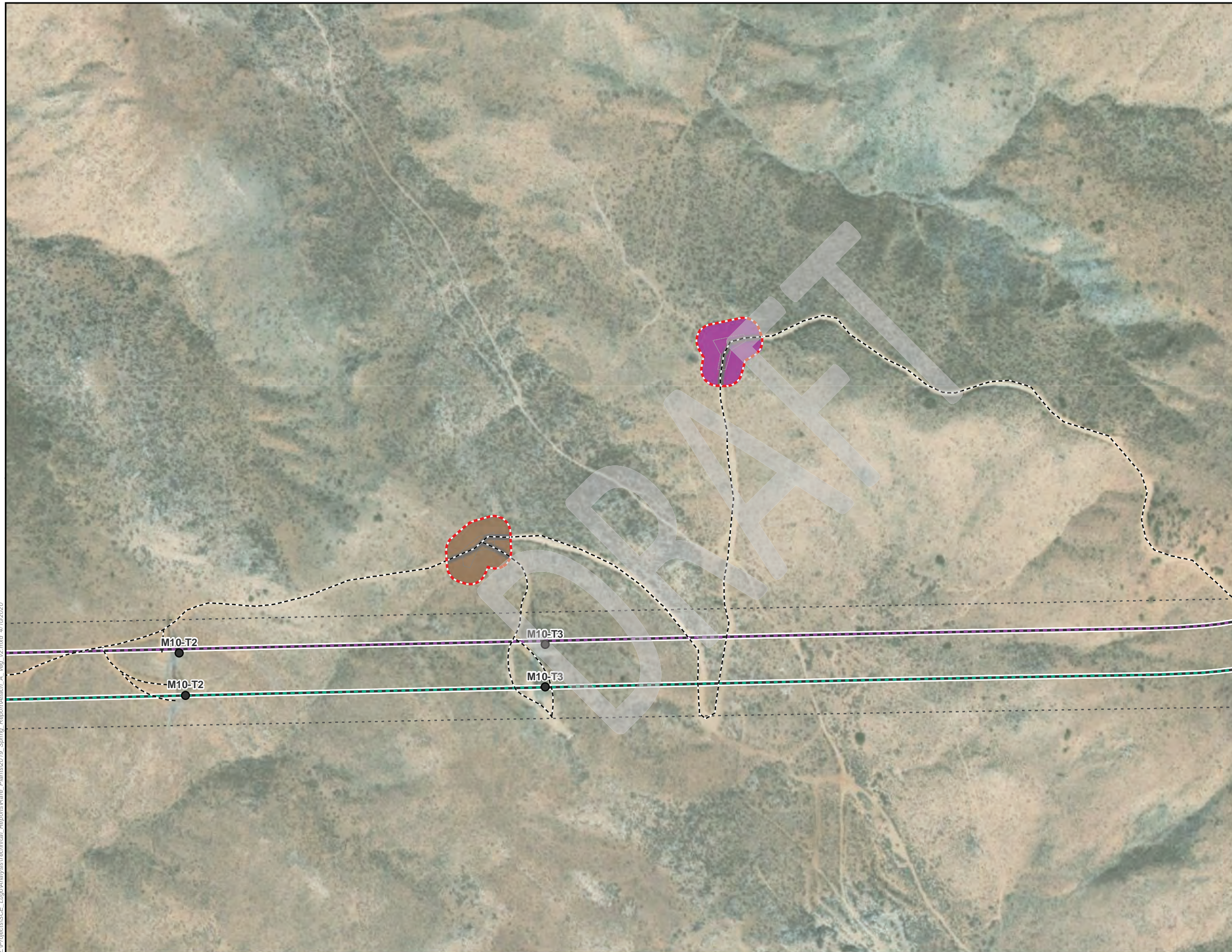


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 12 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**












-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Ericameria nauseosa* Shrubland Alliance
-  *Prunus fasciculata* - *Salazaria mexicana* Shrubland Alliance

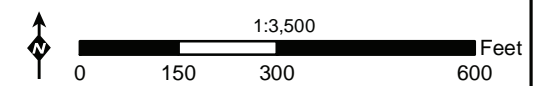


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 13 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Juniperus californica* Woodland Alliance
-  *Prunus fasciculata* - *Salazaria mexicana* Shrubland Alliance

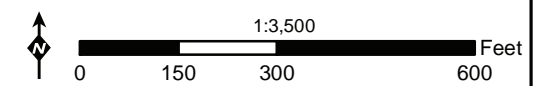


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 14 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**














-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Prunus fasciculata* - *Salazaria mexicana* Shrubland Alliance

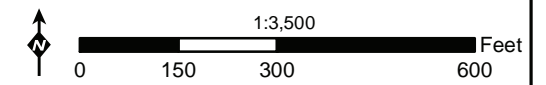


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 15 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Eriogonum fasciculatum* Shrubland Alliance
-  *Juniperus californica* Woodland Alliance
-  *Prunus fasciculata* - *Salazaria mexicana* Shrubland Alliance
-  *Yucca brevifolia* Woodland Alliance

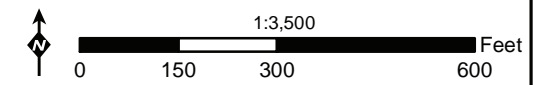
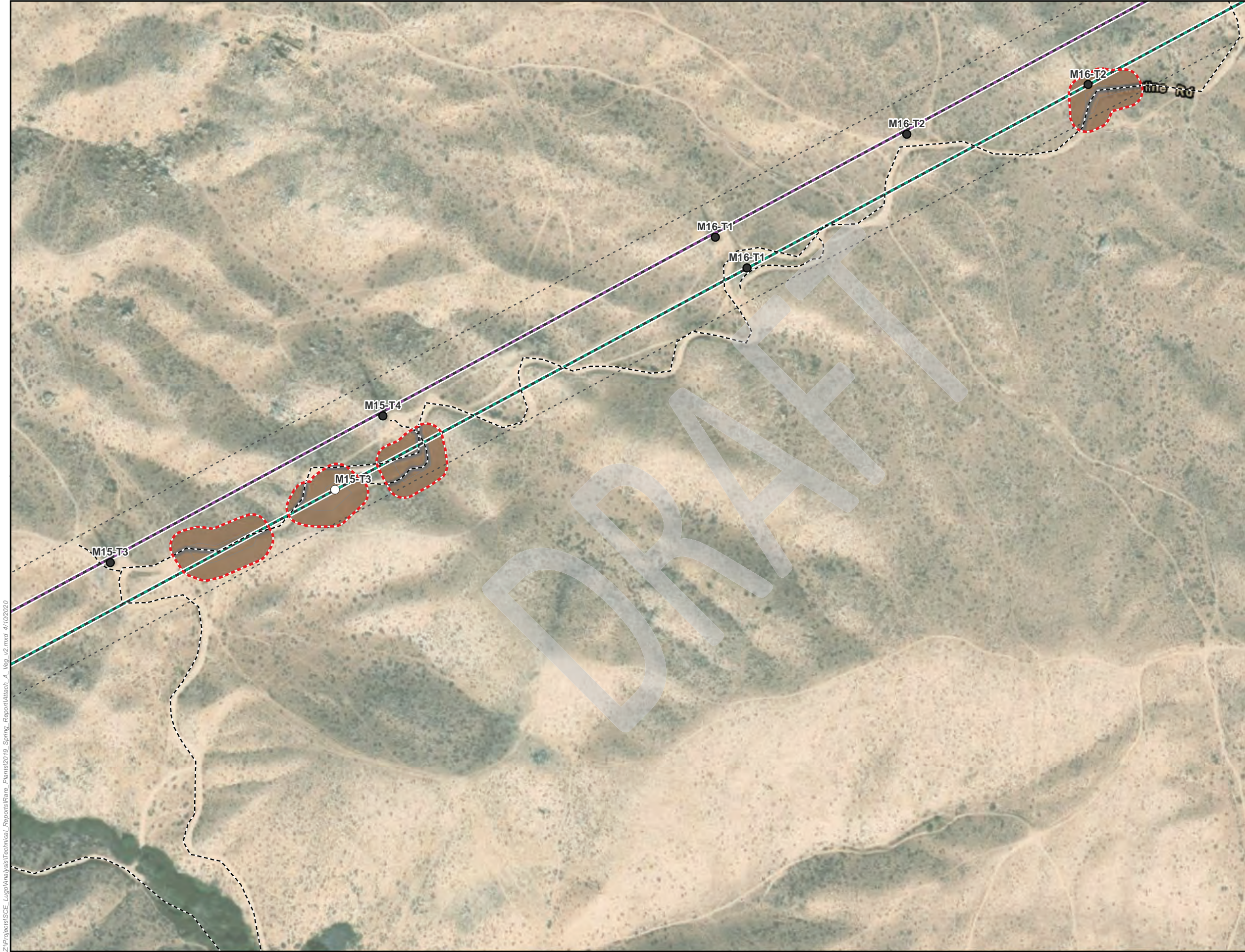


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 16 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Prunus fasciculata* - *Salazaria mexicana* Shrubland Alliance













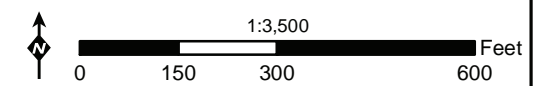
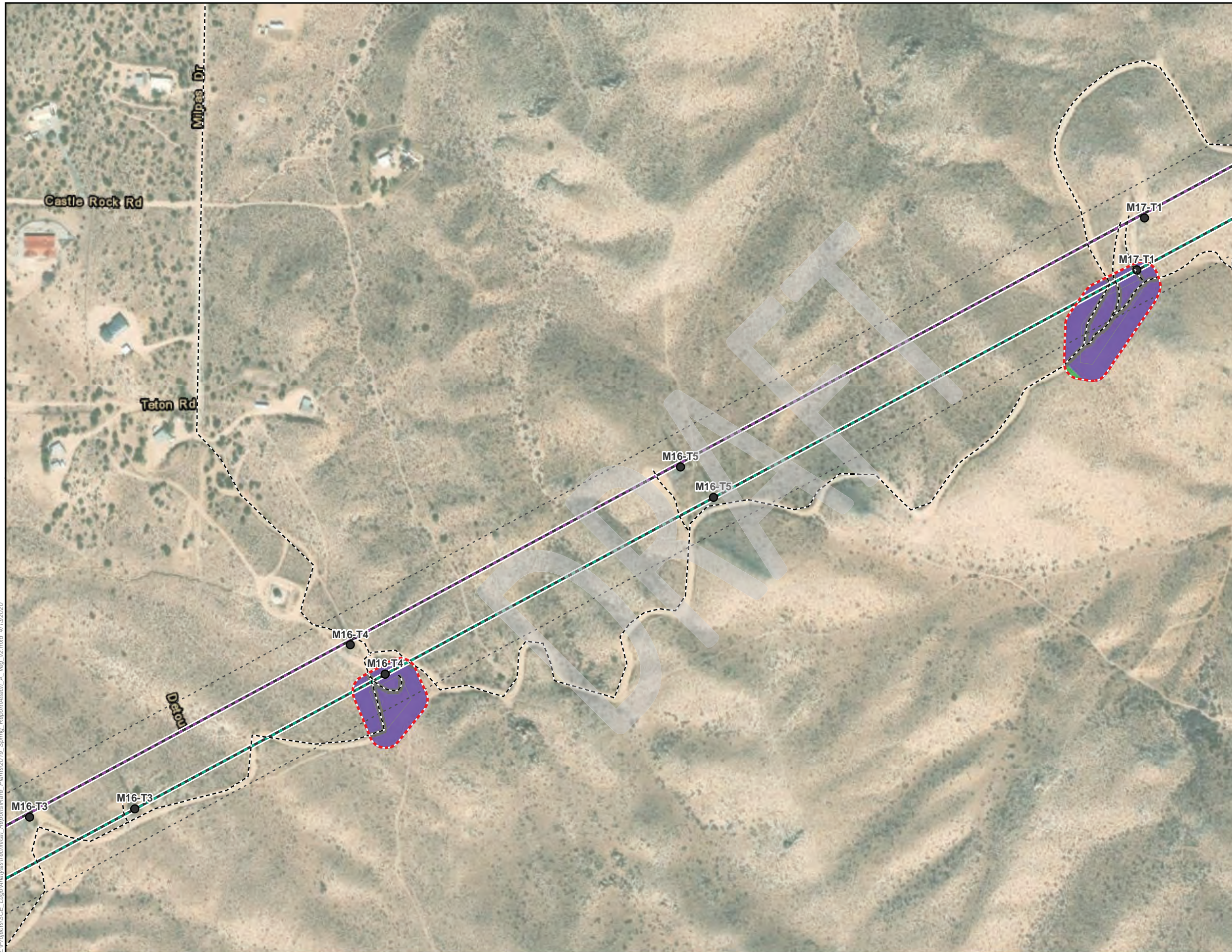
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Rare_Plants\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

**Attachment A:
Vegetation Communities and Land Covers
Map 17 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Eriogonum fasciculatum* Shrubland Alliance
-  *Purshia tridentata* - *Artemisia tridentata* Shrubland Alliance

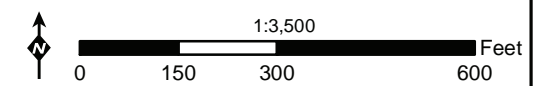
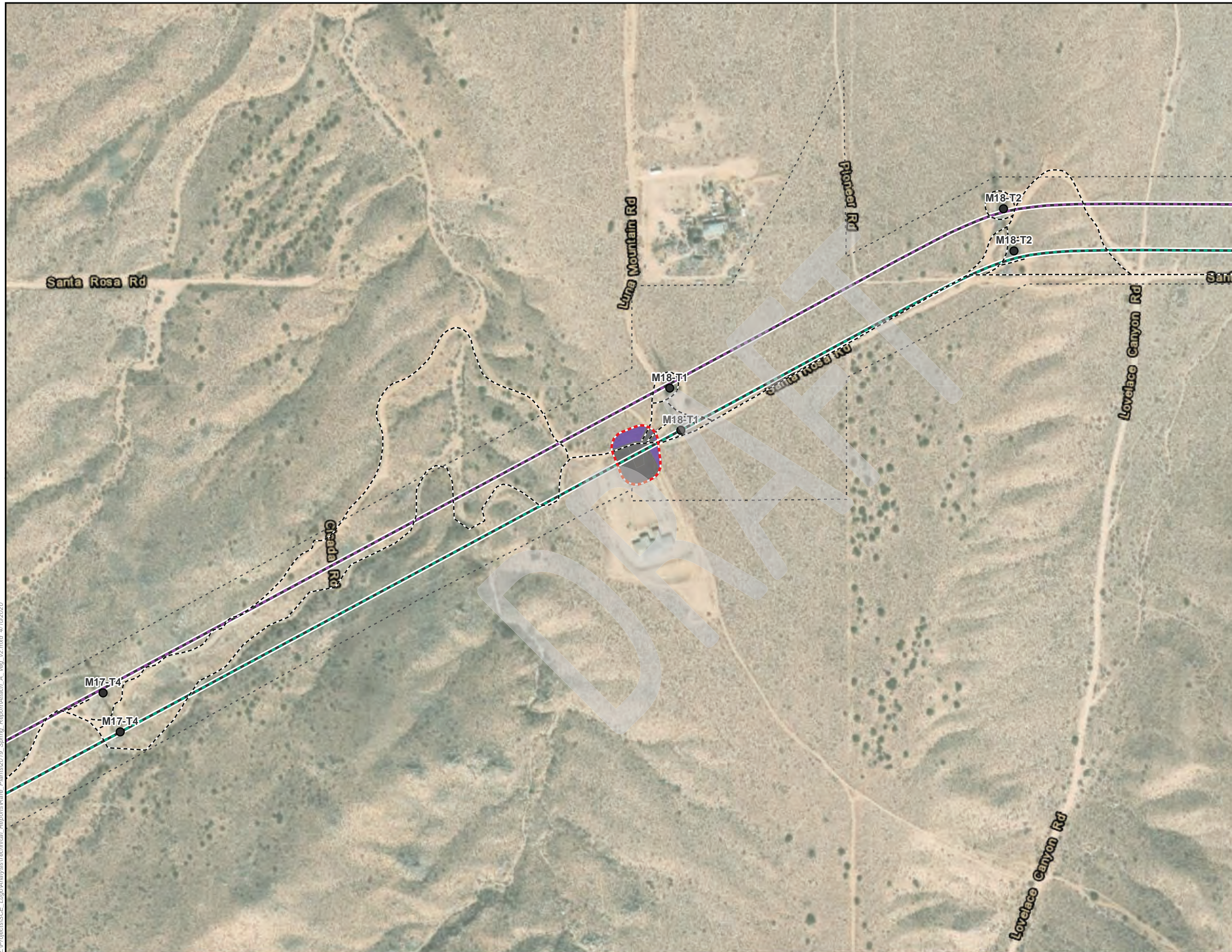


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 18 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Eriogonum fasciculatum* Shrubland Alliance

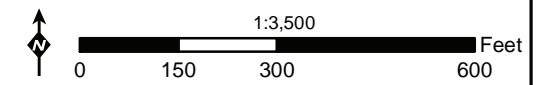
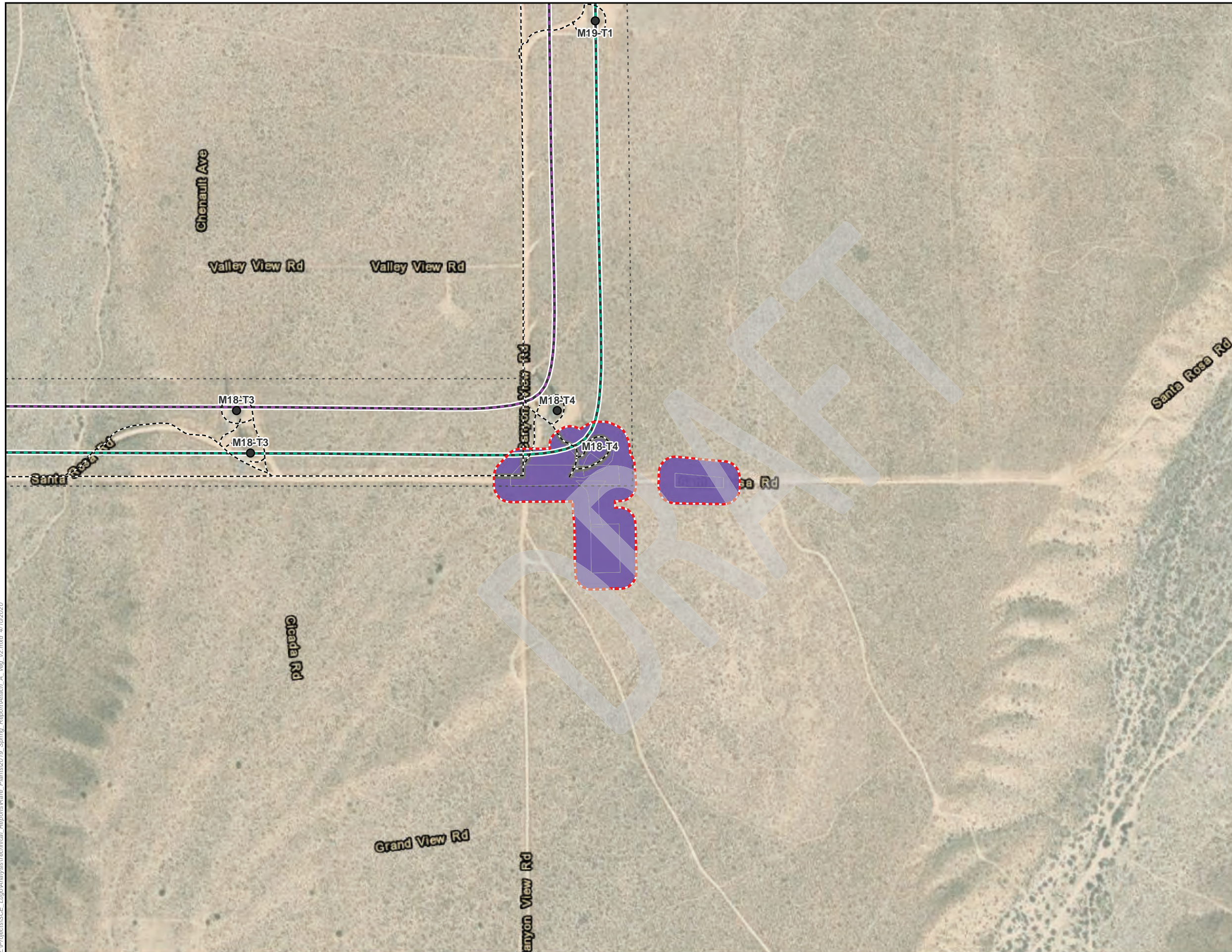


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 19 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Eriogonum fasciculatum* Shrubland Alliance

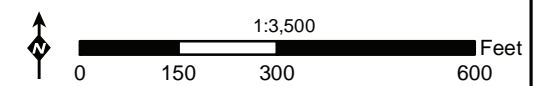
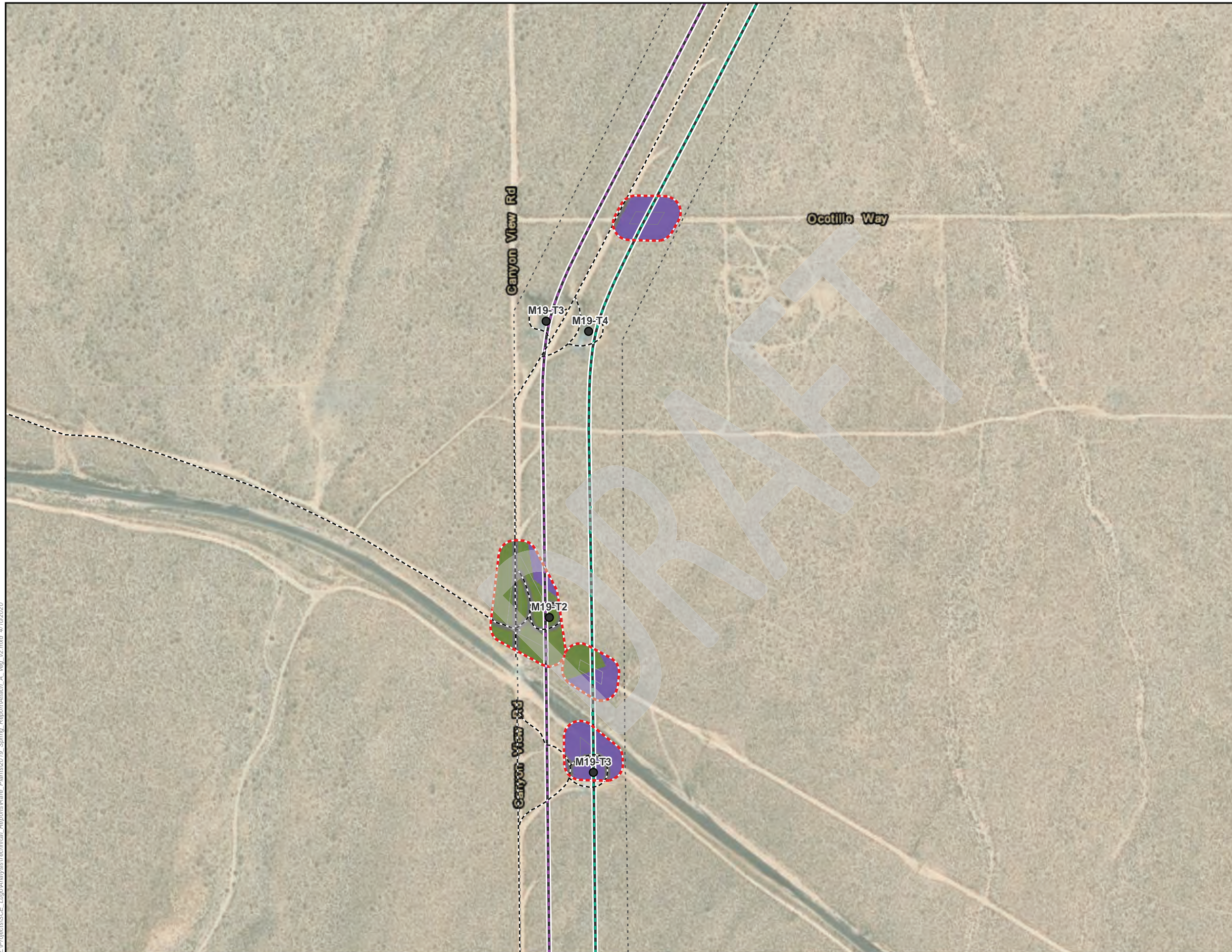


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 20 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**













-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Eriogonum fasciculatum* Shrubland Alliance
-  *Yucca brevifolia* Woodland Alliance

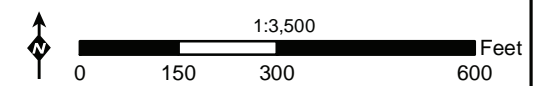


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 21 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Existing Distribution Structure
-  Existing Subtransmission Structure
-  Modified Subtransmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Yucca brevifolia* Woodland Alliance

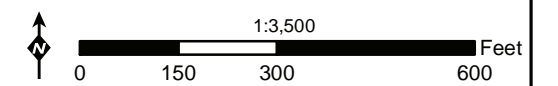


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 22 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Atriplex polycarpa* Shrubland Alliance
-  Developed
-  *Yucca brevifolia* Woodland Alliance

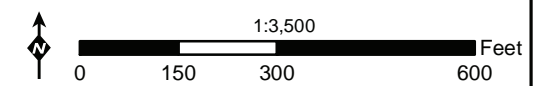
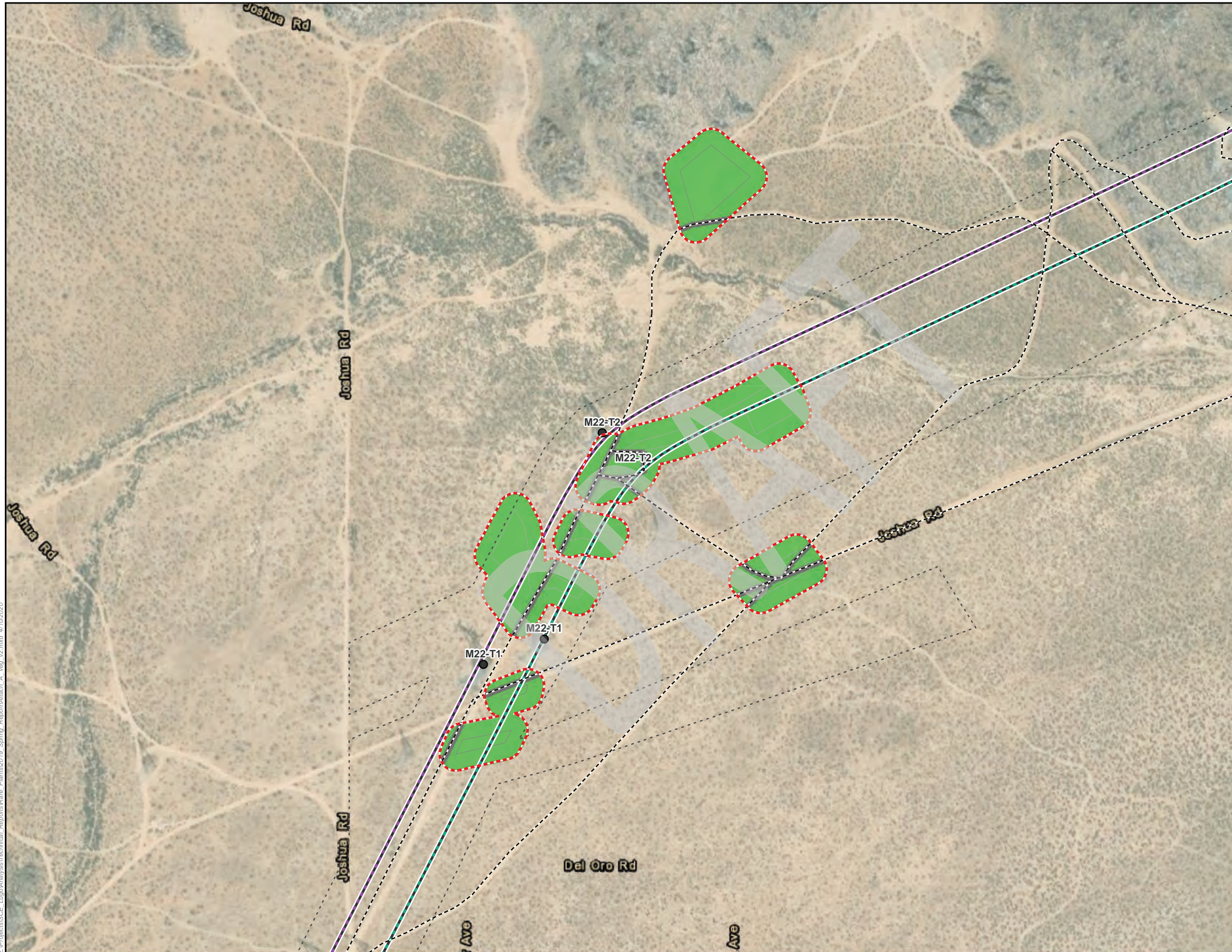


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 23 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**













-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Ambrosia dumosa* Shrubland Alliance
-  *Atriplex polycarpa* Shrubland Alliance
-  Developed

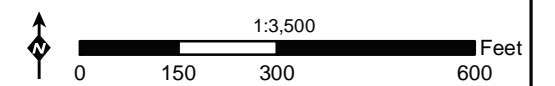
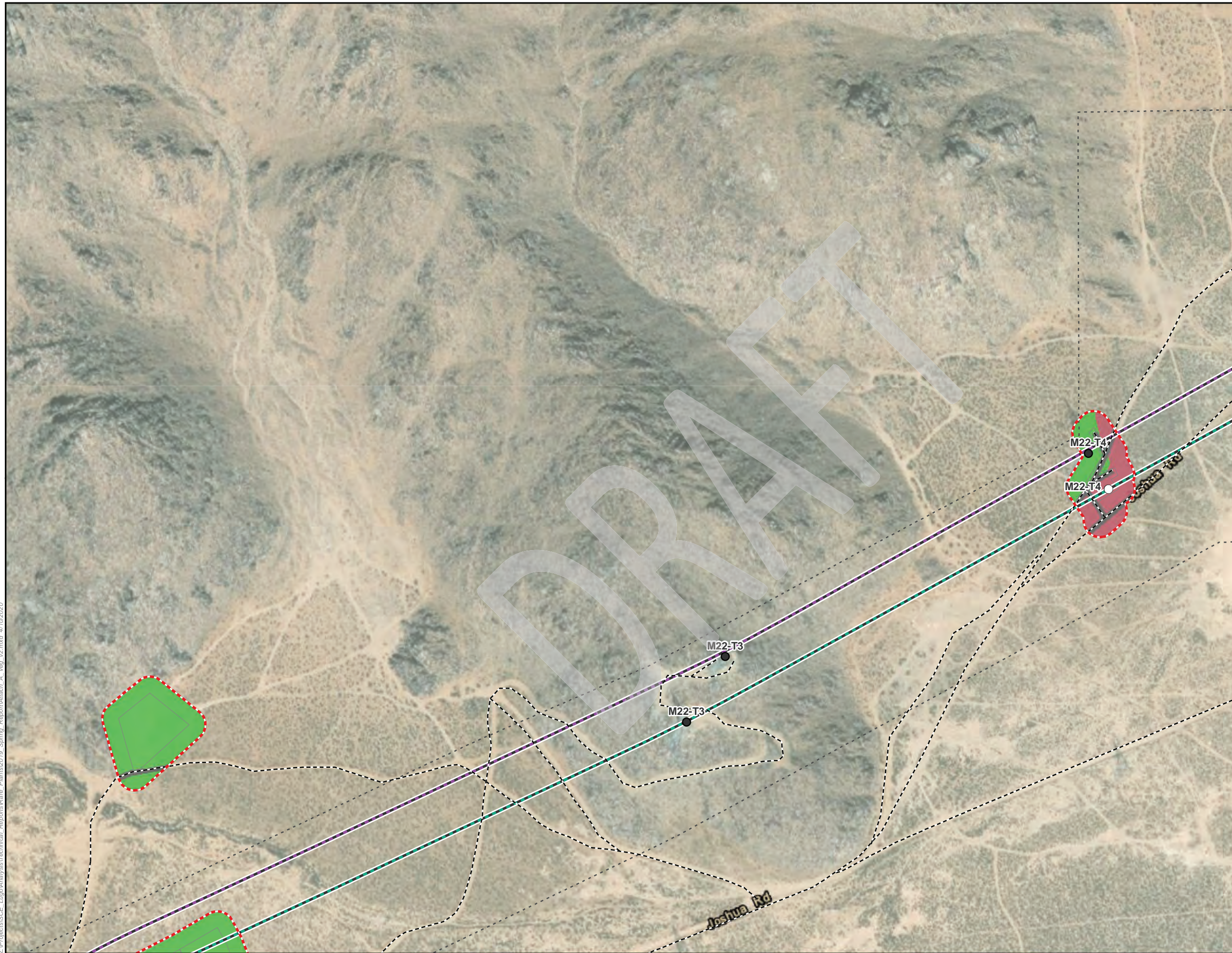


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 24 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**













-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Ambrosia dumosa* Shrubland Alliance
-  *Atriplex polycarpa* Shrubland Alliance
-  Developed
-  *Suaeda moquinii* Shrubland Alliance

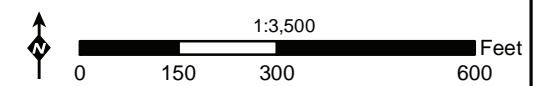
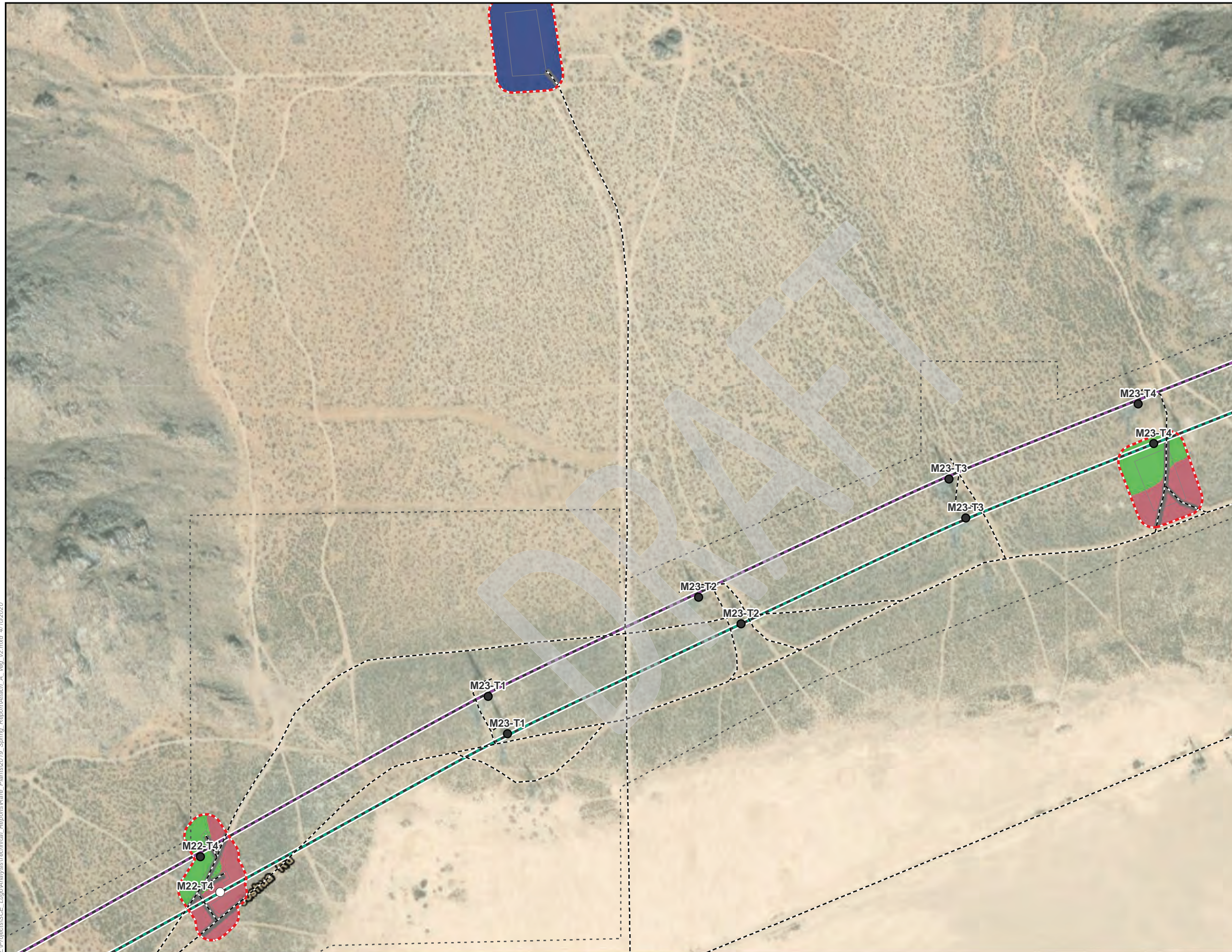


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 25 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Atriplex polycarpa* Shrubland Alliance
-  Developed
-  *Larrea tridentata* Shrubland Alliance
-  *Suaeda moquinii* Shrubland Alliance

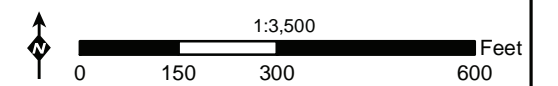
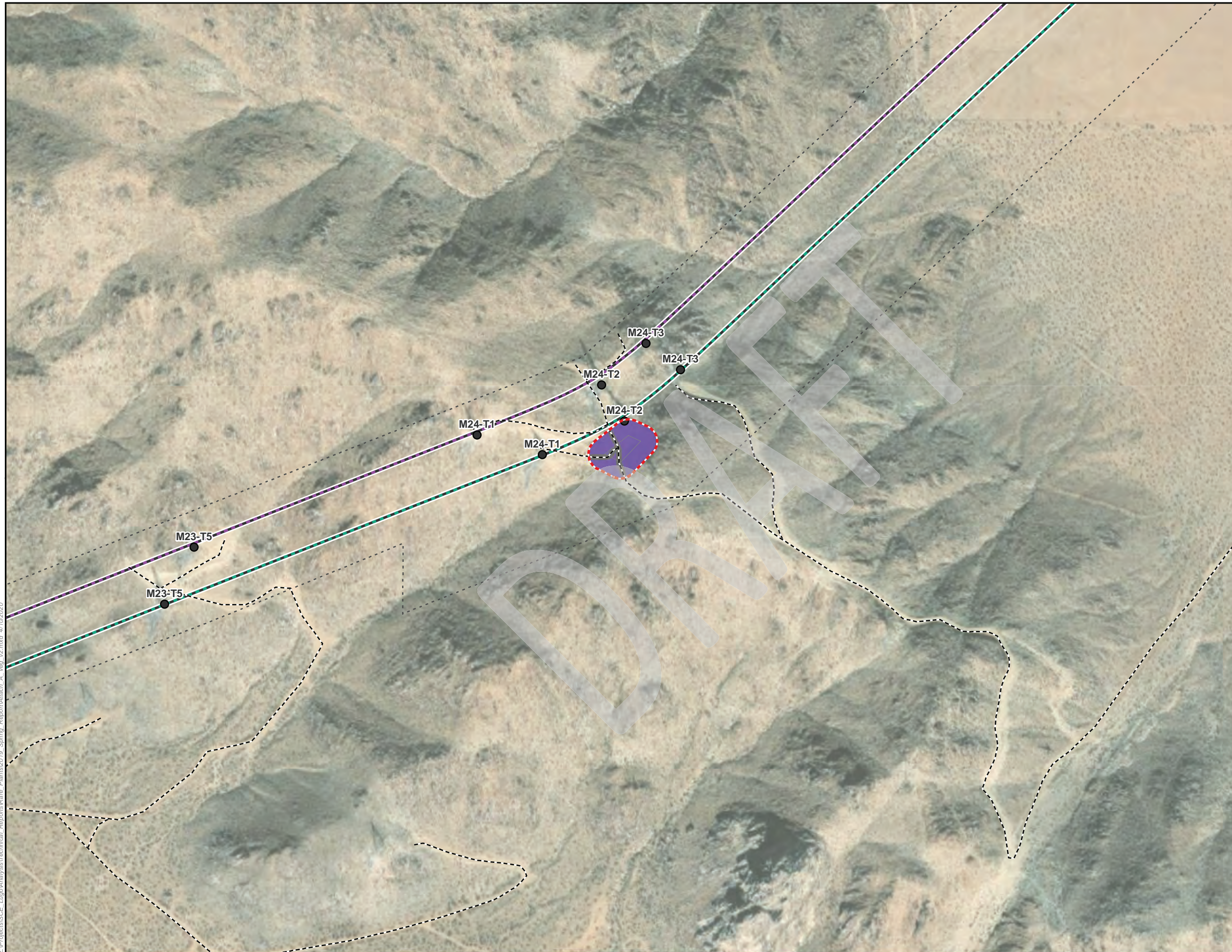


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 26 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Eriogonum fasciculatum* Shrubland Alliance

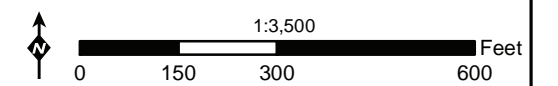
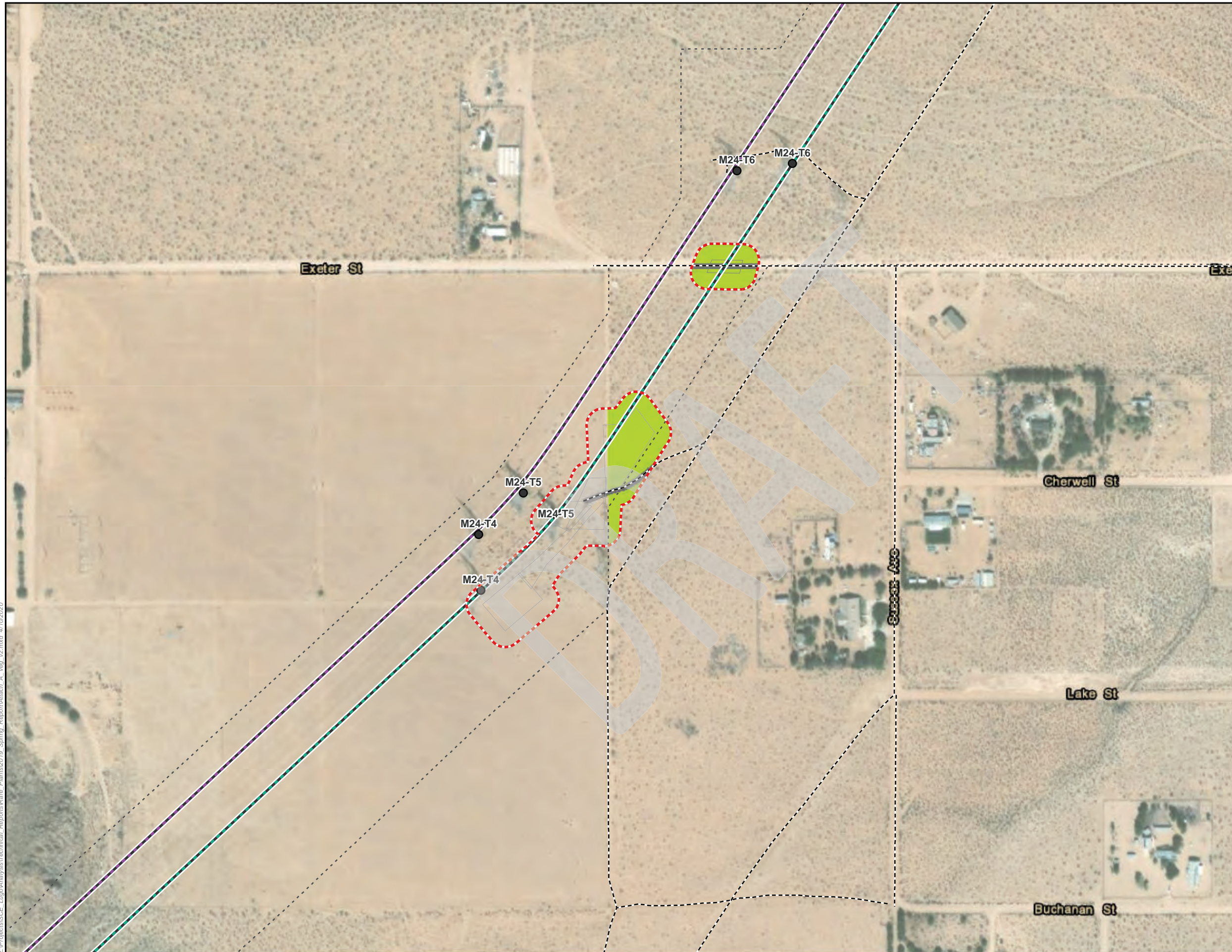


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 27 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**









-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

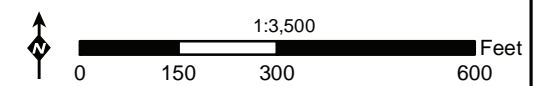
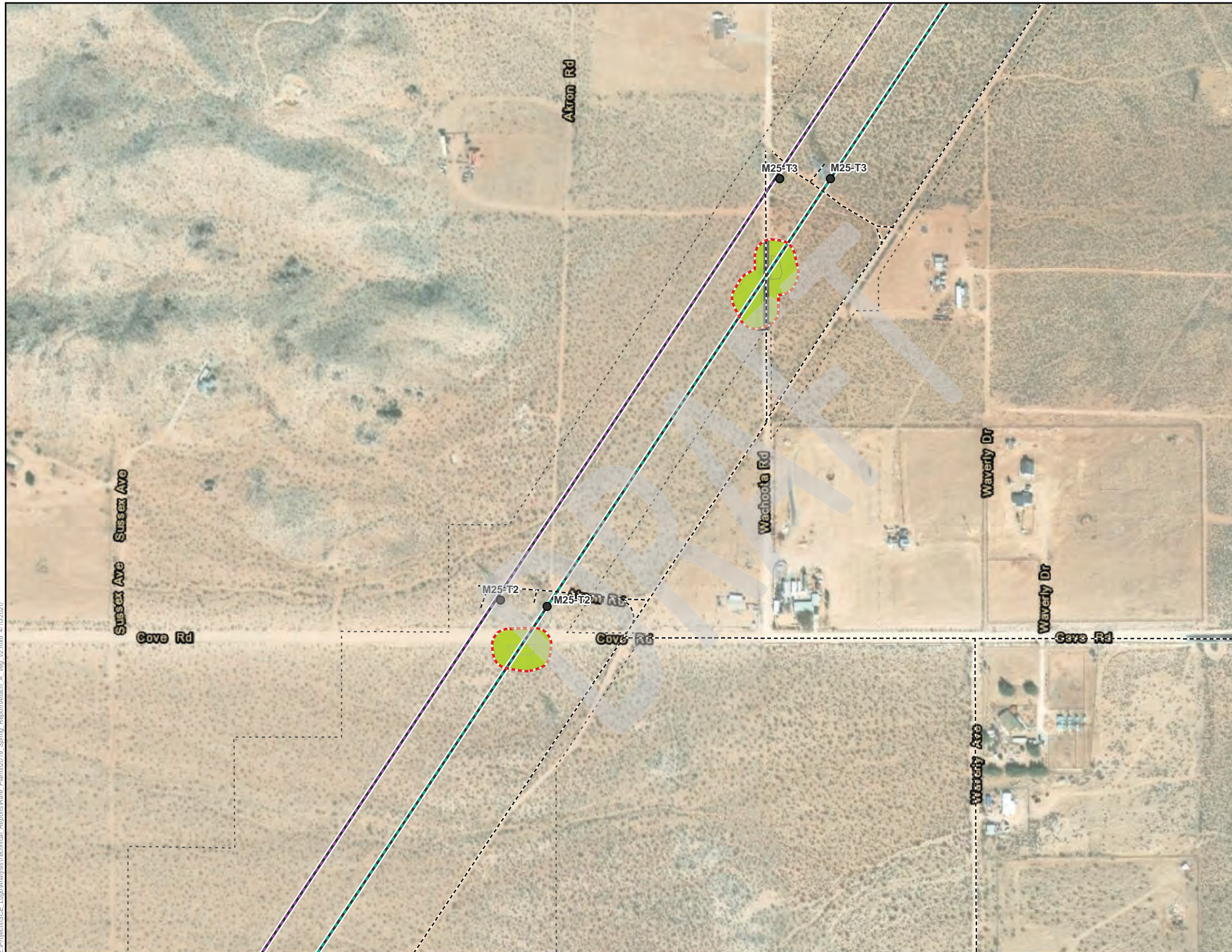


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 28 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

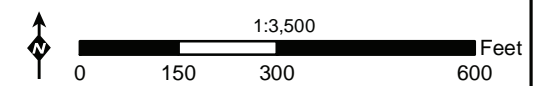


Source: Insignia, 2019; SCE, 2019

Attachment A:
Vegetation Communities and Land Covers
Map 29 of 191

Eldorado-Lugo-Mohave
Series Capacitor Project











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Atriplex polycarpa* Shrubland Alliance
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

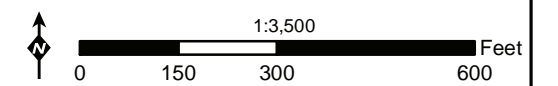


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 30 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance











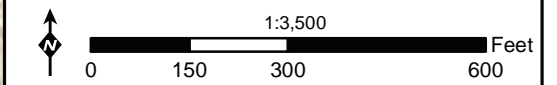
Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 31 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**



-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance














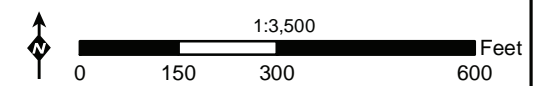
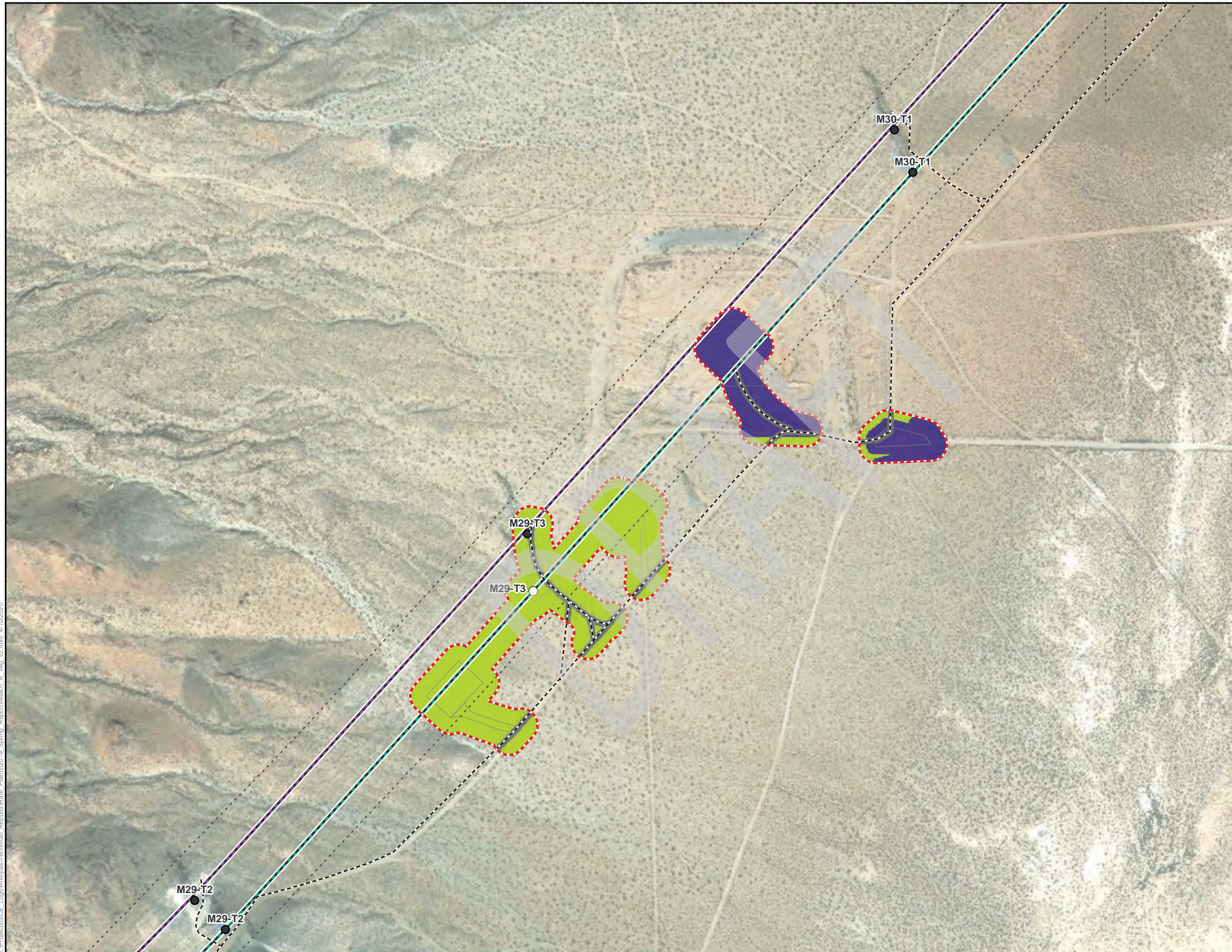
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Rare_Plants\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

**Attachment A:
Vegetation Communities and Land Covers
Map 32 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**













-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Ambrosia dumosa* Shrubland Alliance
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

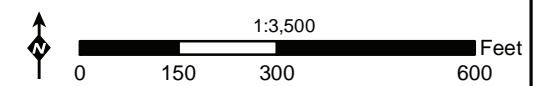
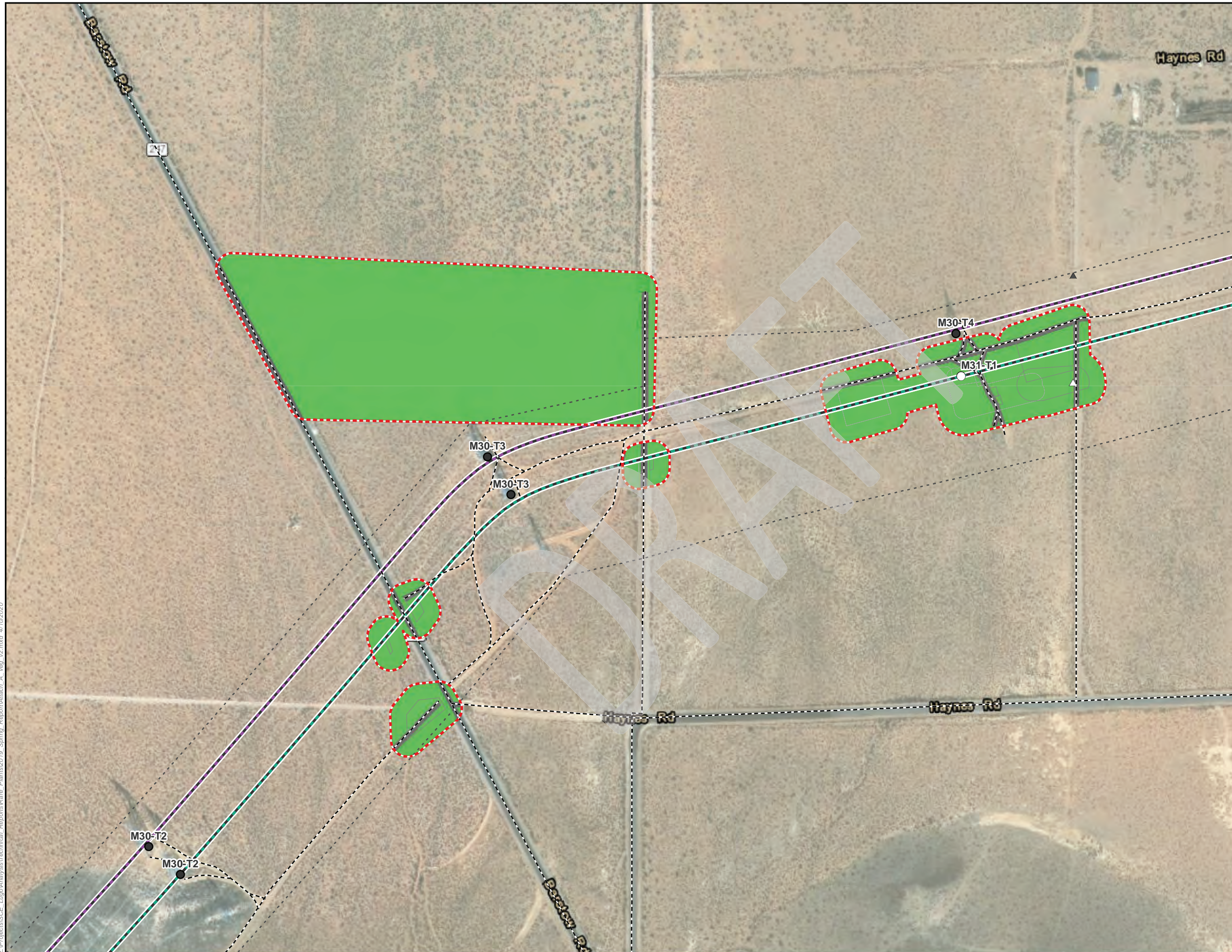


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 33 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

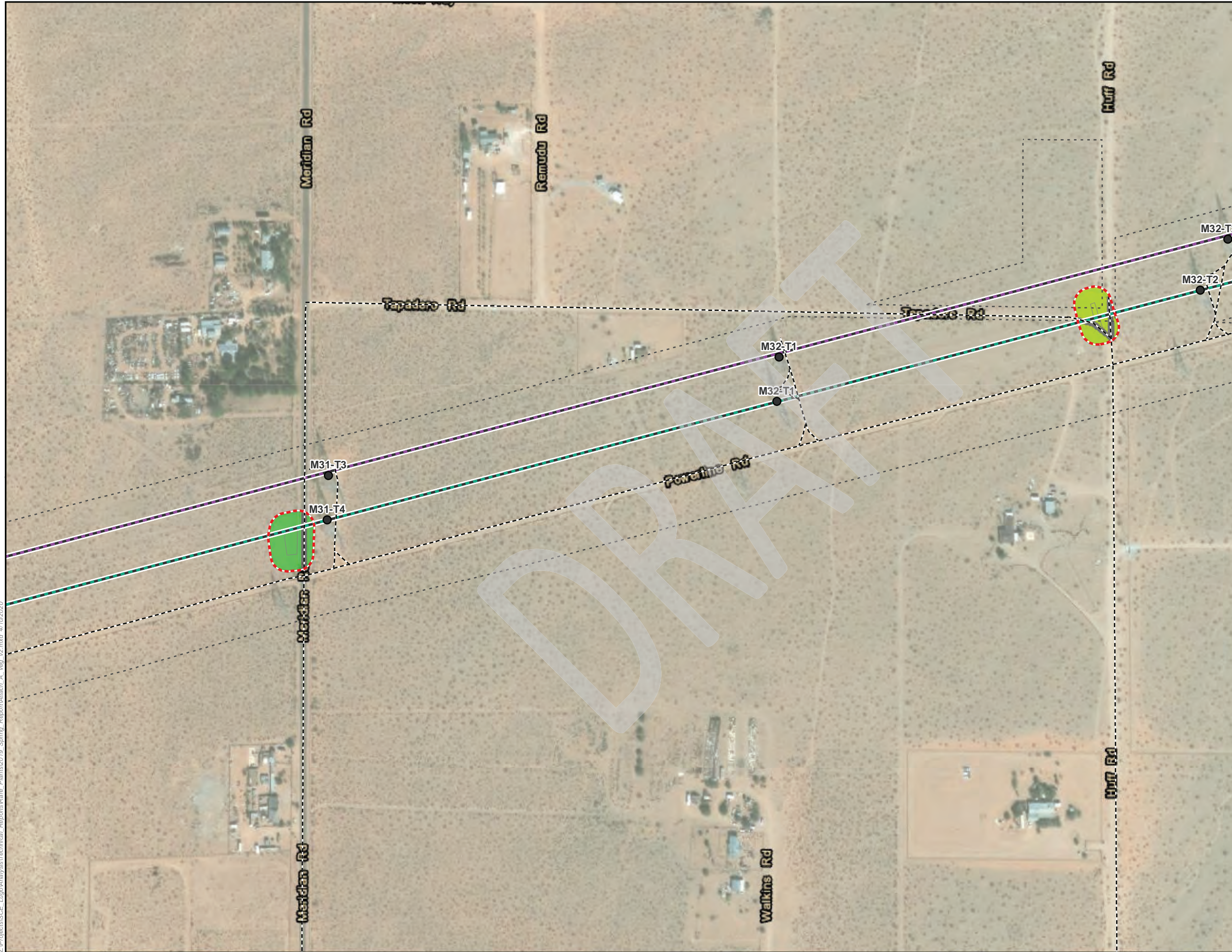
-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Existing Distribution Structure
-  Modified Distribution Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Atriplex polycarpa* Shrubland Alliance
-  Developed



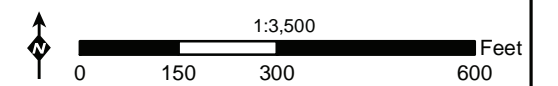
Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 34 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**














- Survey Area
- Project Components**
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Existing Transmission Structure
- Construction Area
- Right-of-Way
- Access Road
- Vegetation Community/Land Cover**
- Atriplex polycarpa* Shrubland Alliance
- Developed
- Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

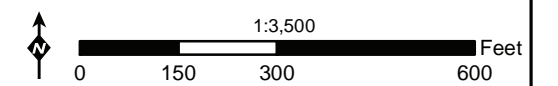


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 35 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* - *Encelia farinosa* Shrubland Alliance

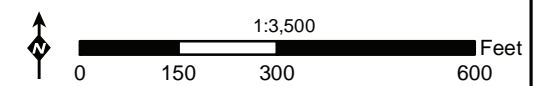


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 36 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**













-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

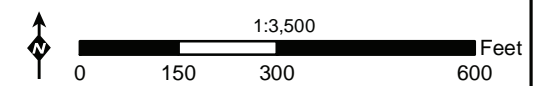
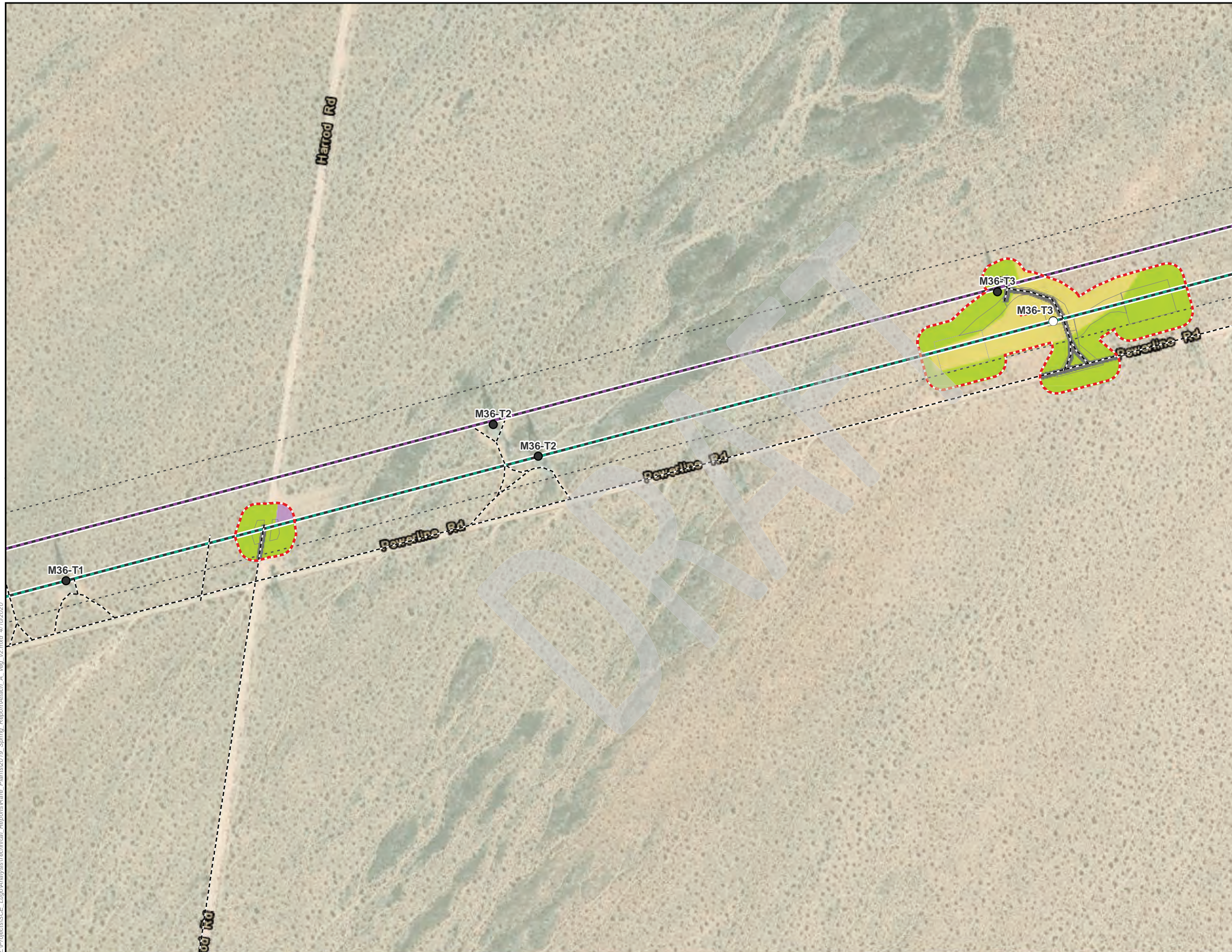


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 37 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Barren - Not Developed
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Yucca schidigera* Shrubland Alliance

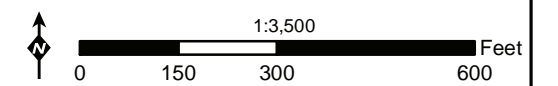


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 38 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

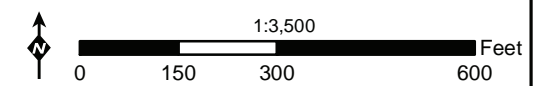


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 39 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**









-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

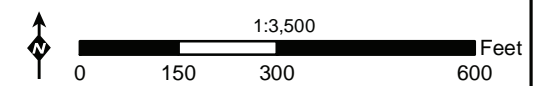


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 40 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

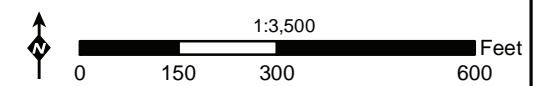
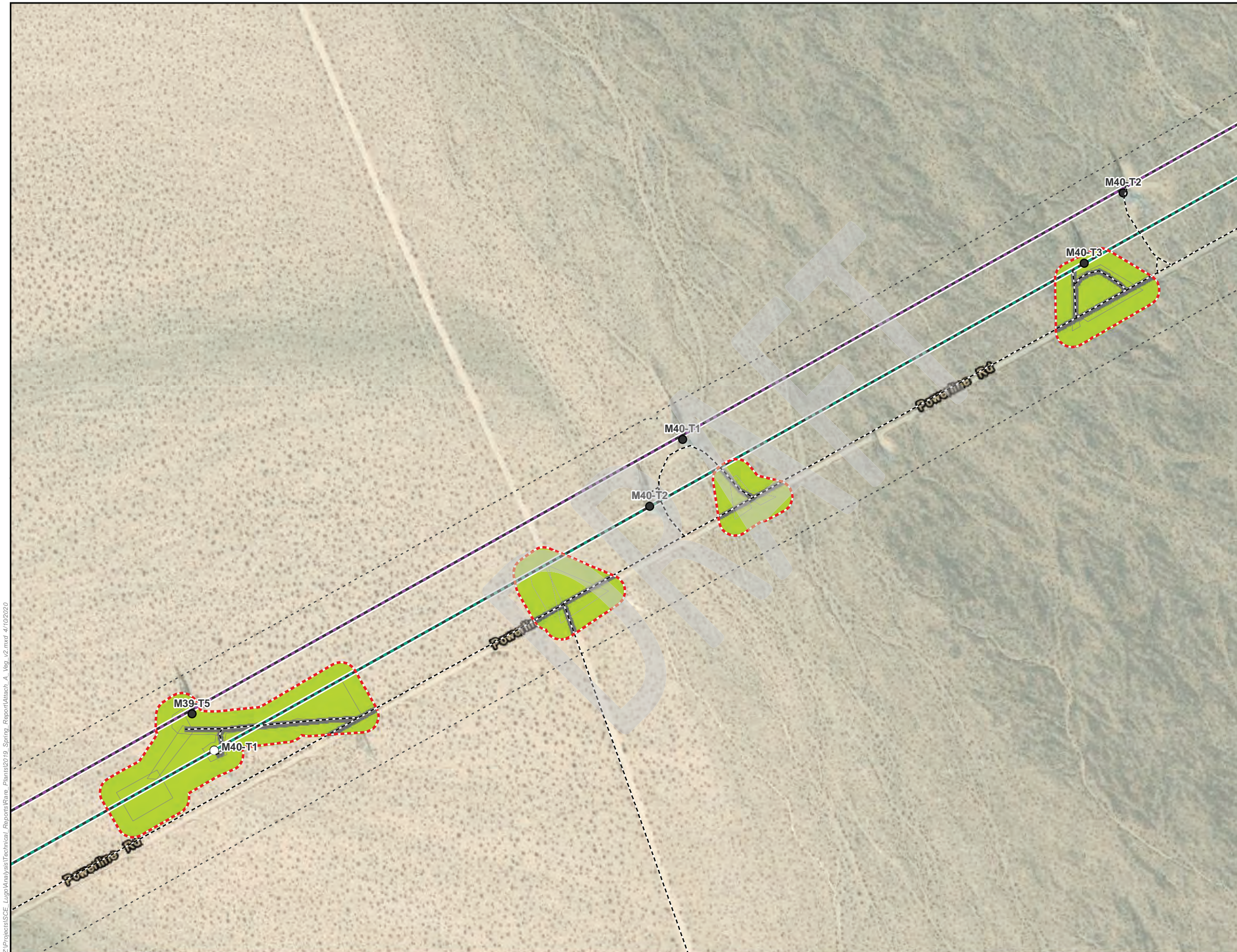


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 41 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

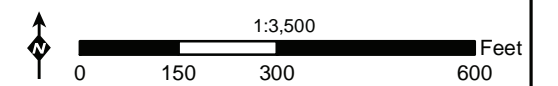
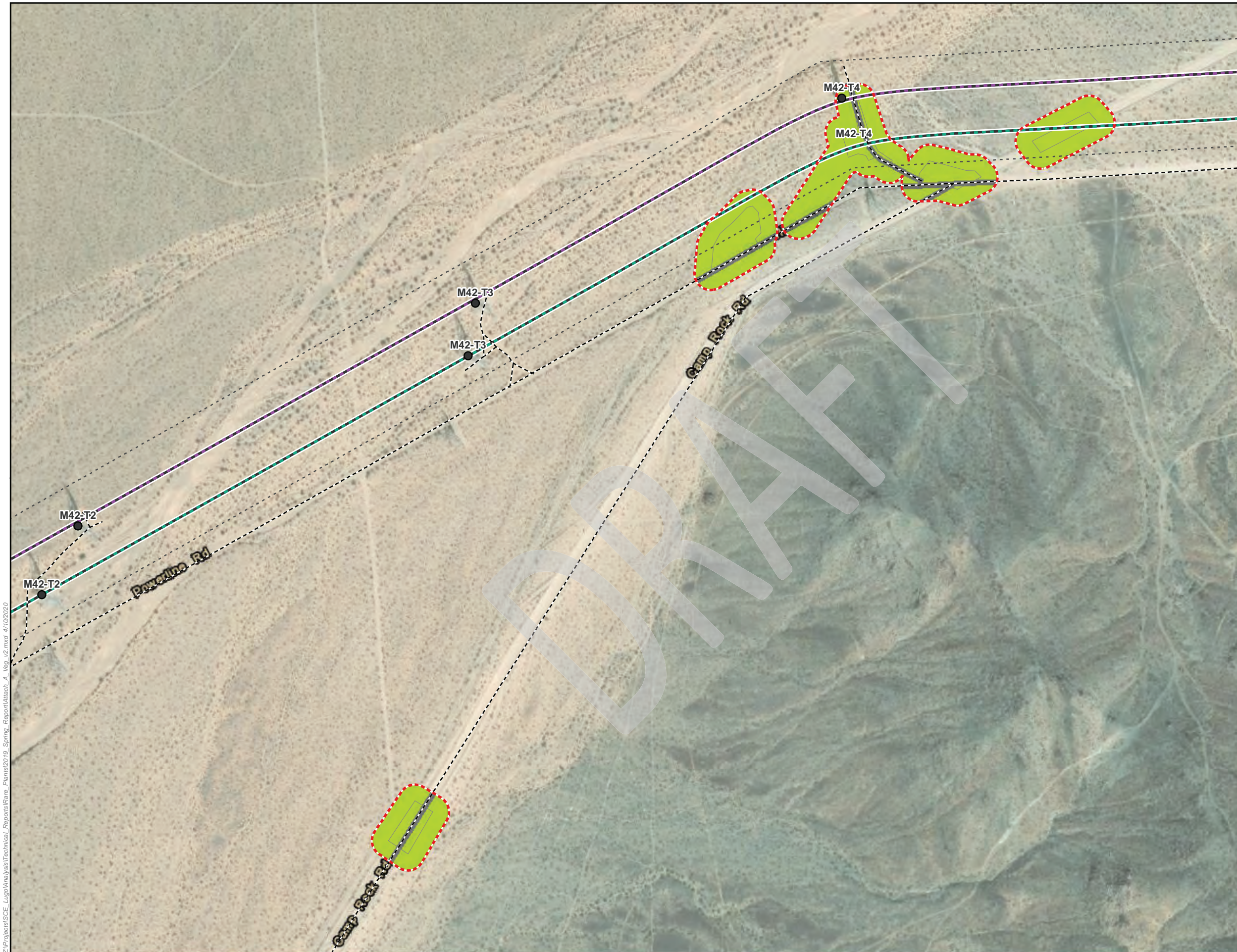


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 42 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**





-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

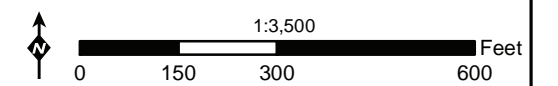
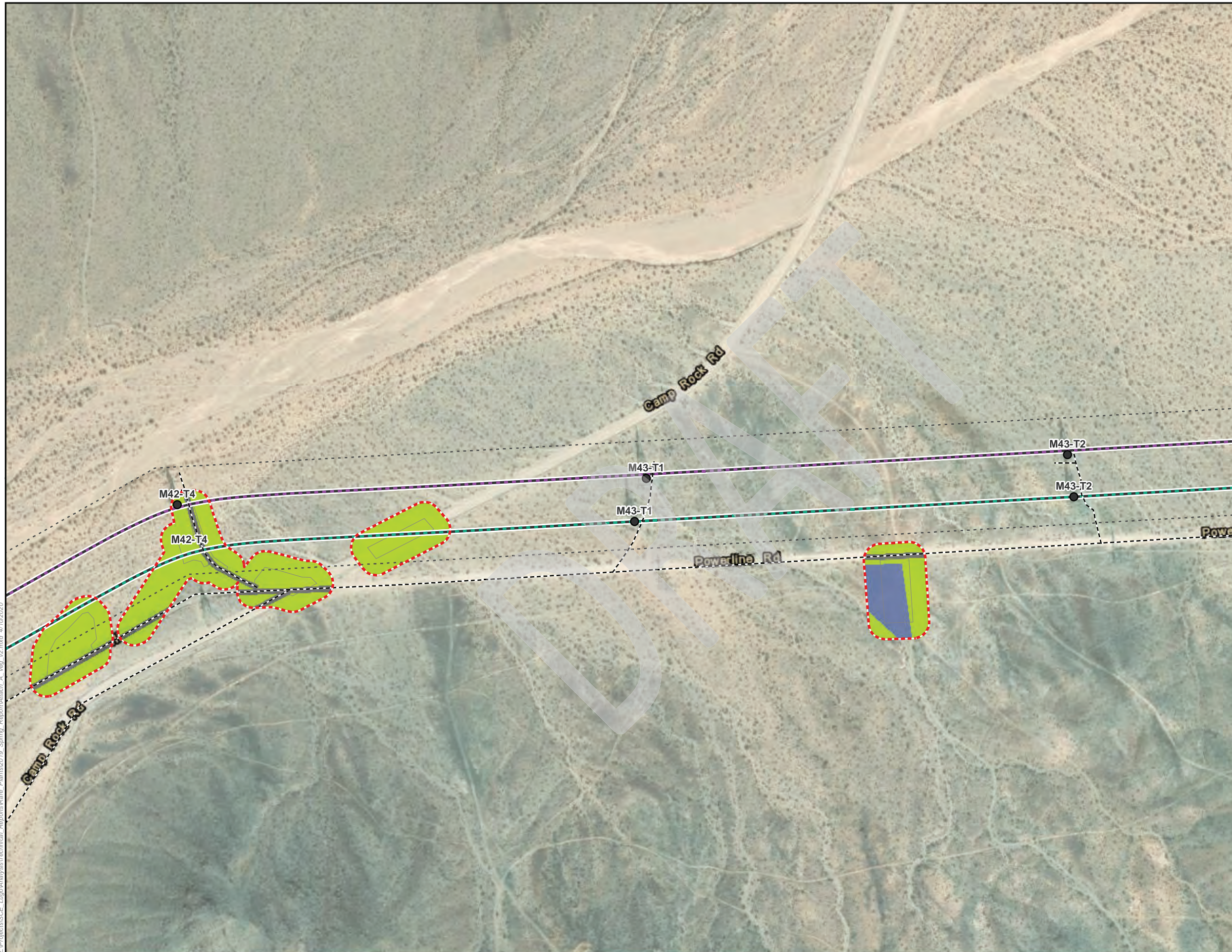


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 43 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**












-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Chorizanthe rigida* – *Geraea canescens*
Desert Pavement Sparsely Vegetated Alliance
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

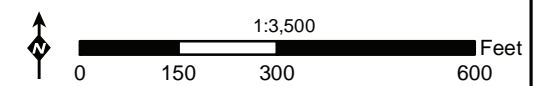


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 44 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Barren - Not Developed
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance

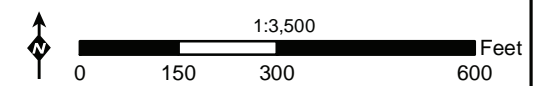
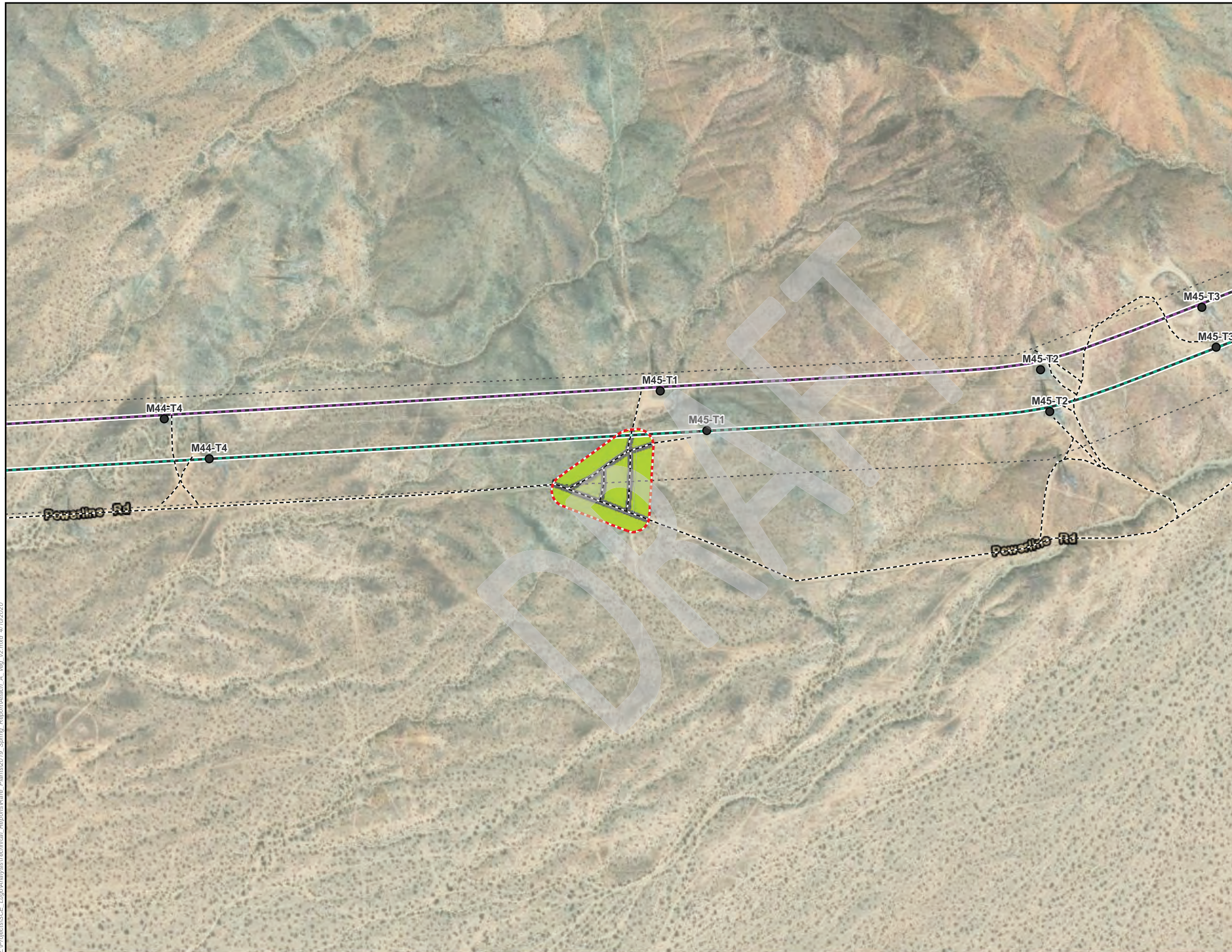


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 45 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**





-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

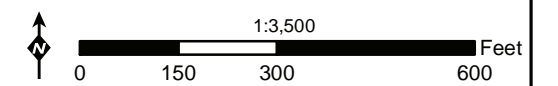
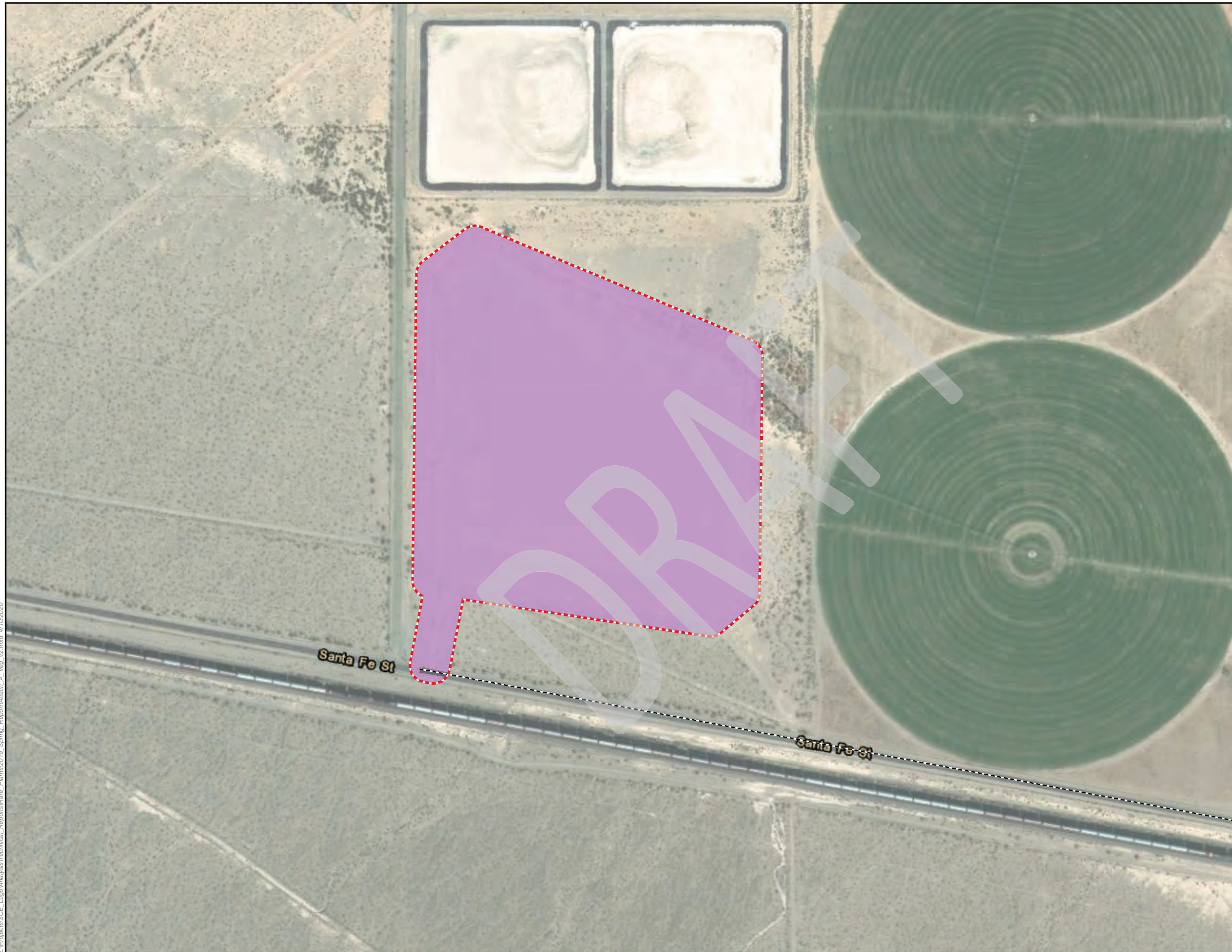


Source: Insignia, 2019; SCE, 2019

Attachment A:
Vegetation Communities and Land Covers
Map 46 of 191

Eldorado-Lugo-Mohave
Series Capacitor Project












-  Survey Area
-  Access Road
- Vegetation Community/Land Cover**
-  Barren - Not Developed
-  Developed

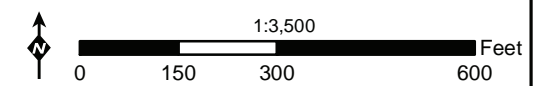
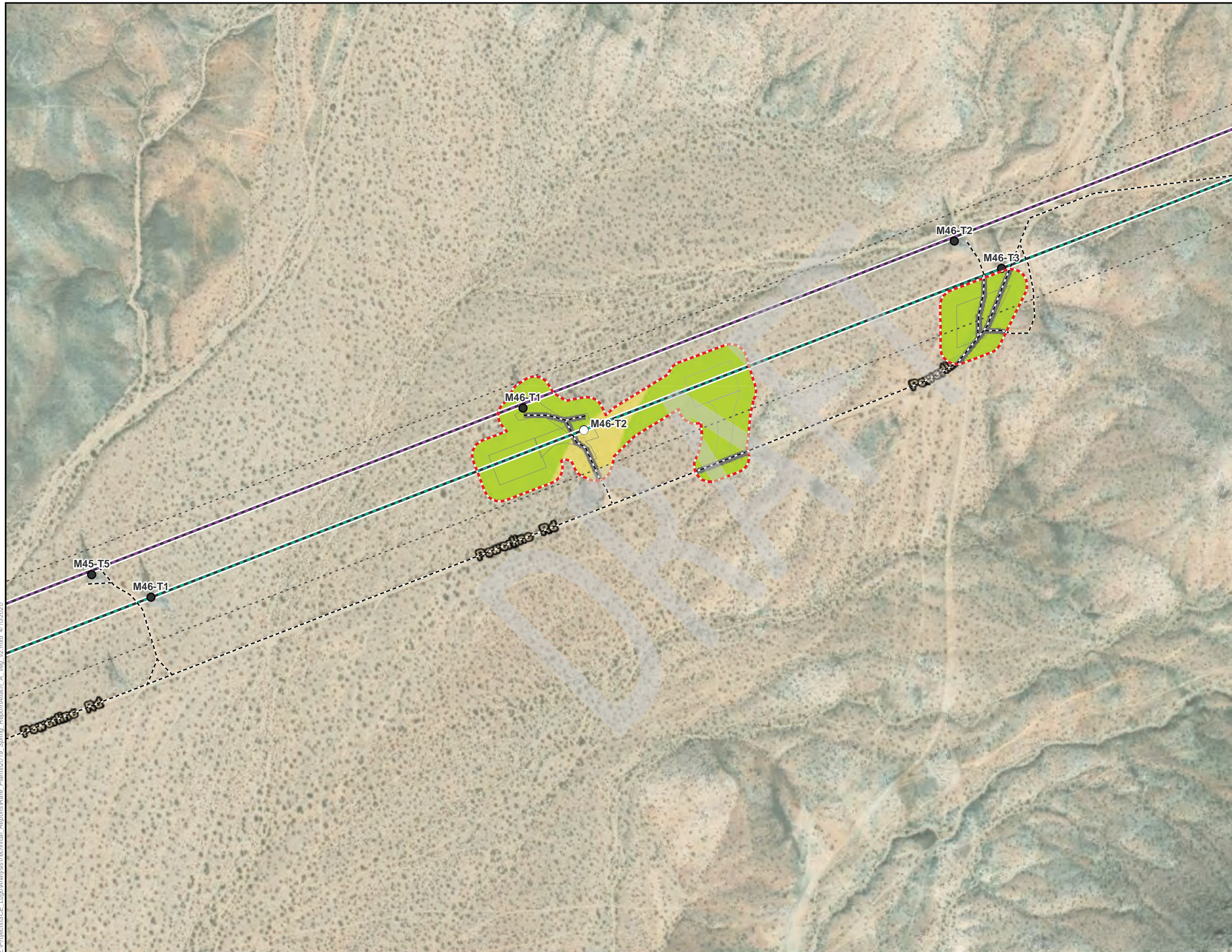


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 47 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Yucca schidigera* Shrubland Alliance

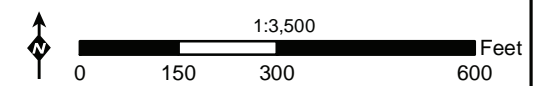
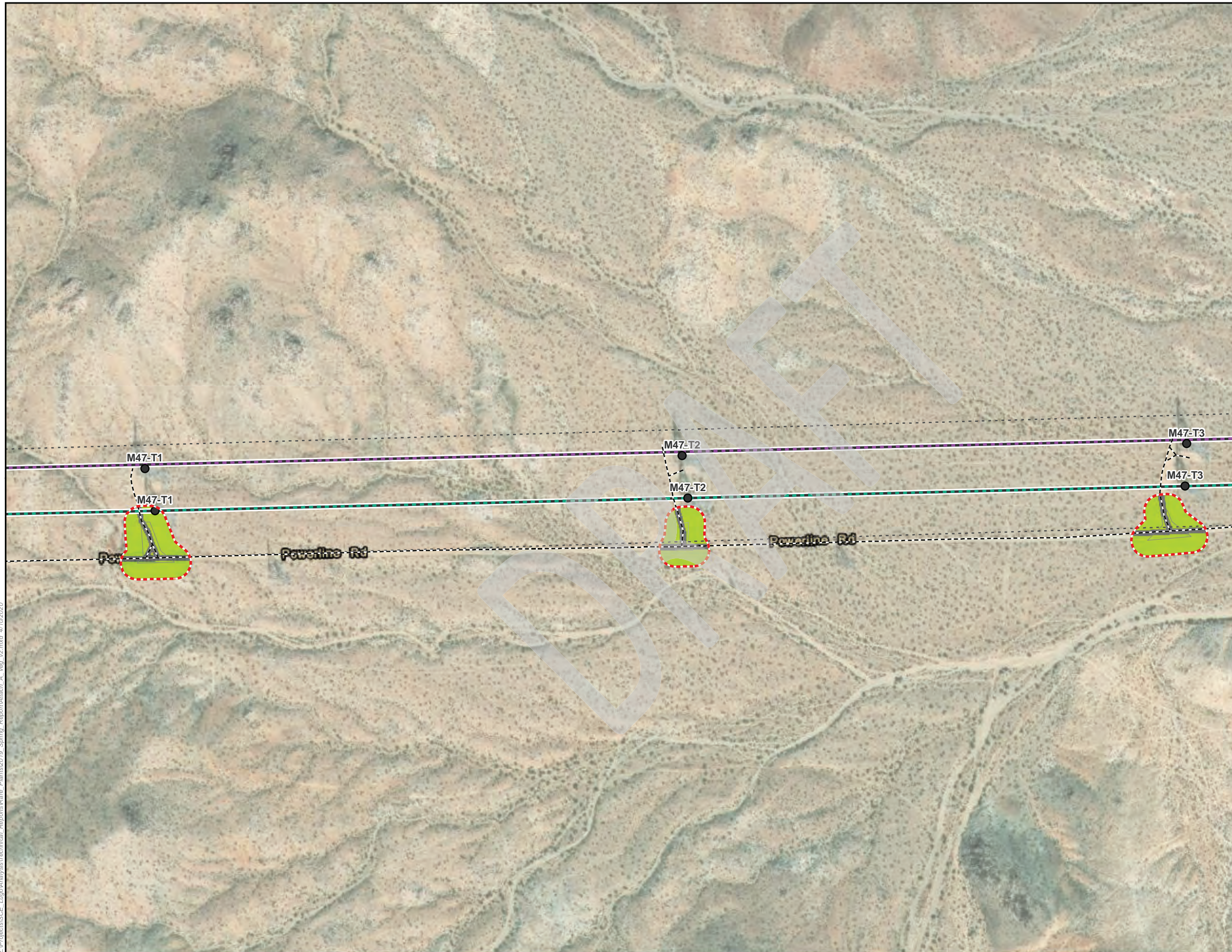


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 48 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

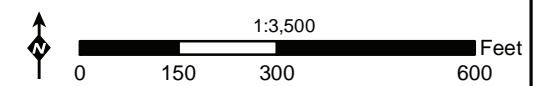
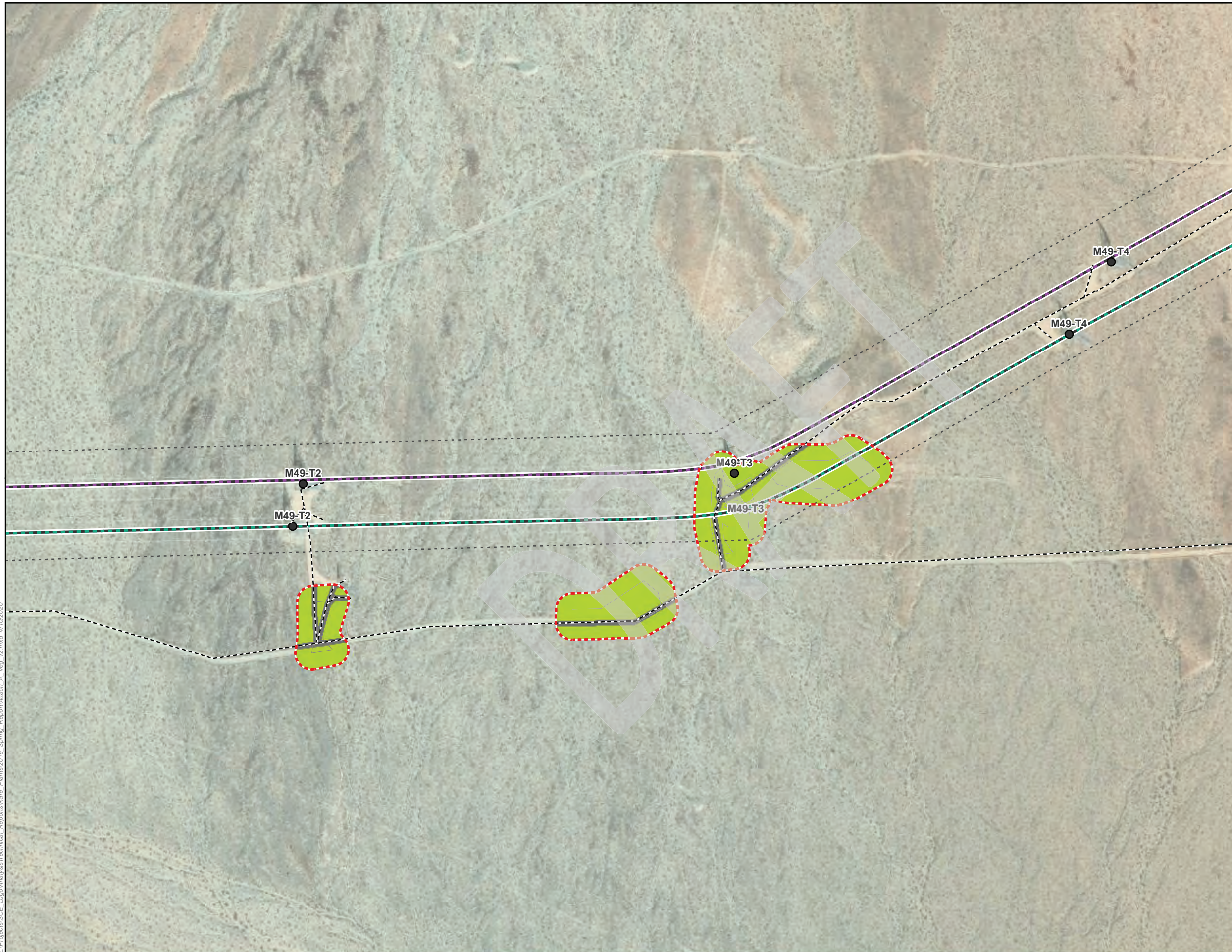


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 49 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

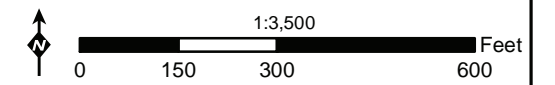


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 50 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Yucca schidigera* Shrubland Alliance

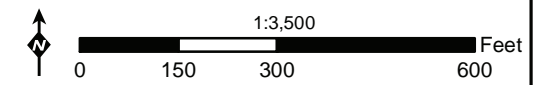


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 51 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance












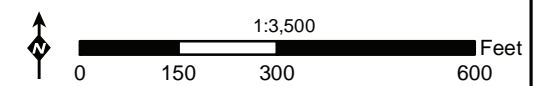
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Repe_Planets\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

**Attachment A:
Vegetation Communities and Land Covers
Map 52 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

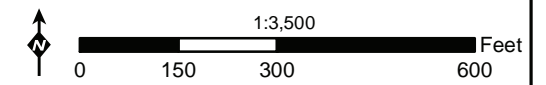
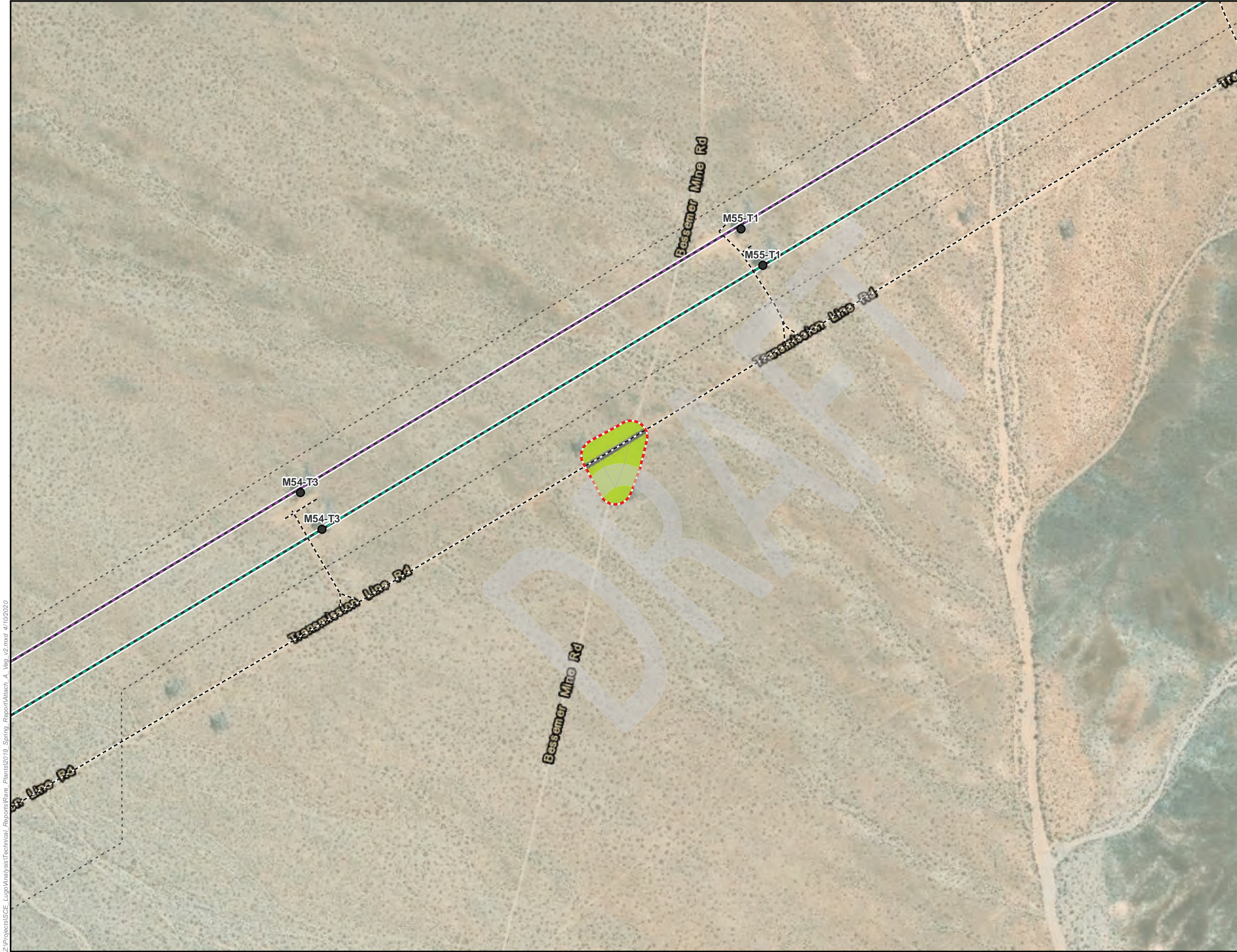


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 53 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance










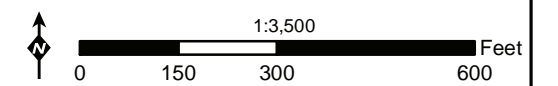
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Revised_Plants\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

Attachment A:
Vegetation Communities and Land Covers
Map 54 of 191

Eldorado-Lugo-Mohave
Series Capacitor Project











-  Survey Area
-  Construction Area
-  Access Road
- Vegetation Community/Land Cover**
-  *Atriplex confertifolia* Shrubland Alliance
-  Barren - Not Developed
-  Developed
-  *Larrea tridentata* Shrubland Alliance

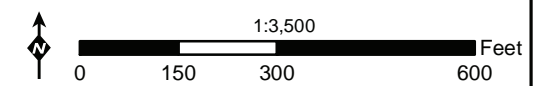


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 55 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**












-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

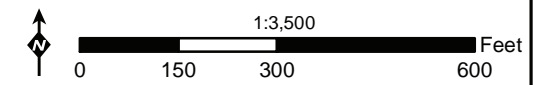
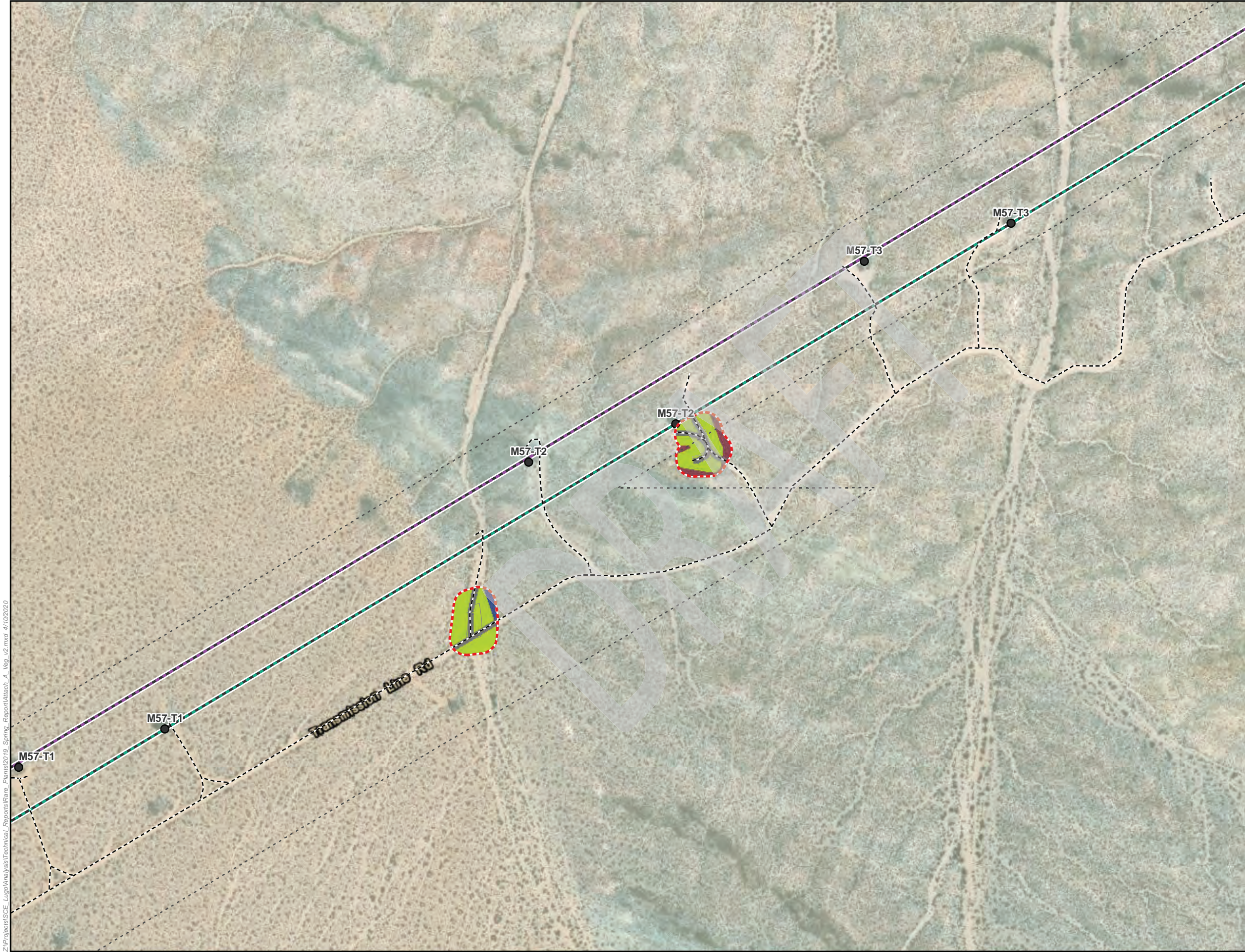


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 56 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Coleogyne ramosissima* Shrubland Alliance
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance












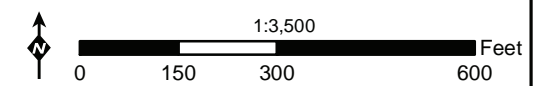
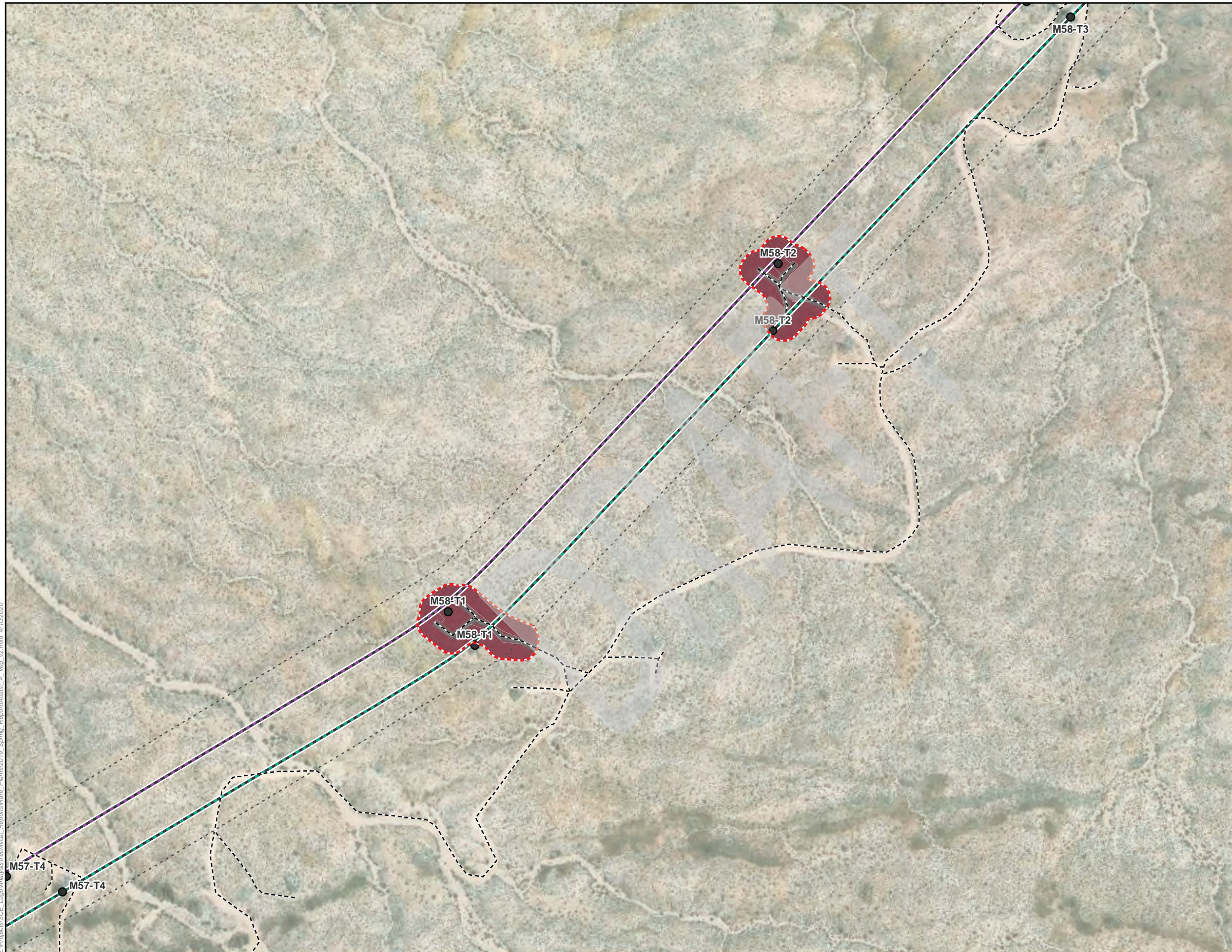
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Repe_Planets\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

**Attachment A:
Vegetation Communities and Land Covers
Map 57 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Coleogyne ramosissima* Shrubland Alliance
-  Developed

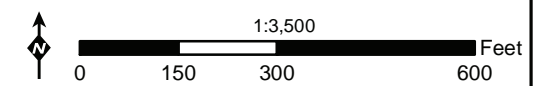
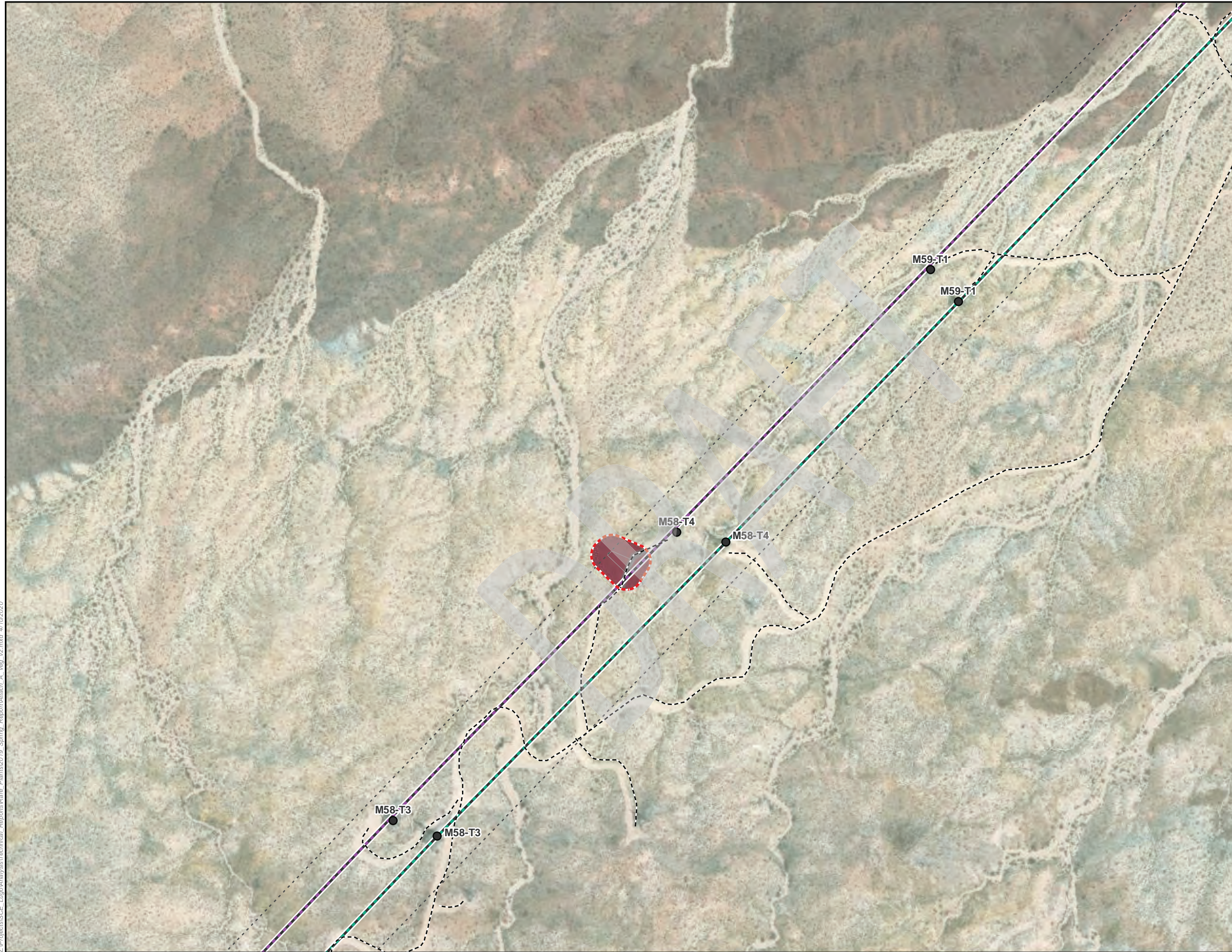


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 58 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Coleogyne ramosissima* Shrubland Alliance
-  Developed

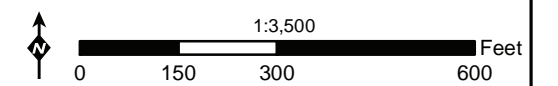
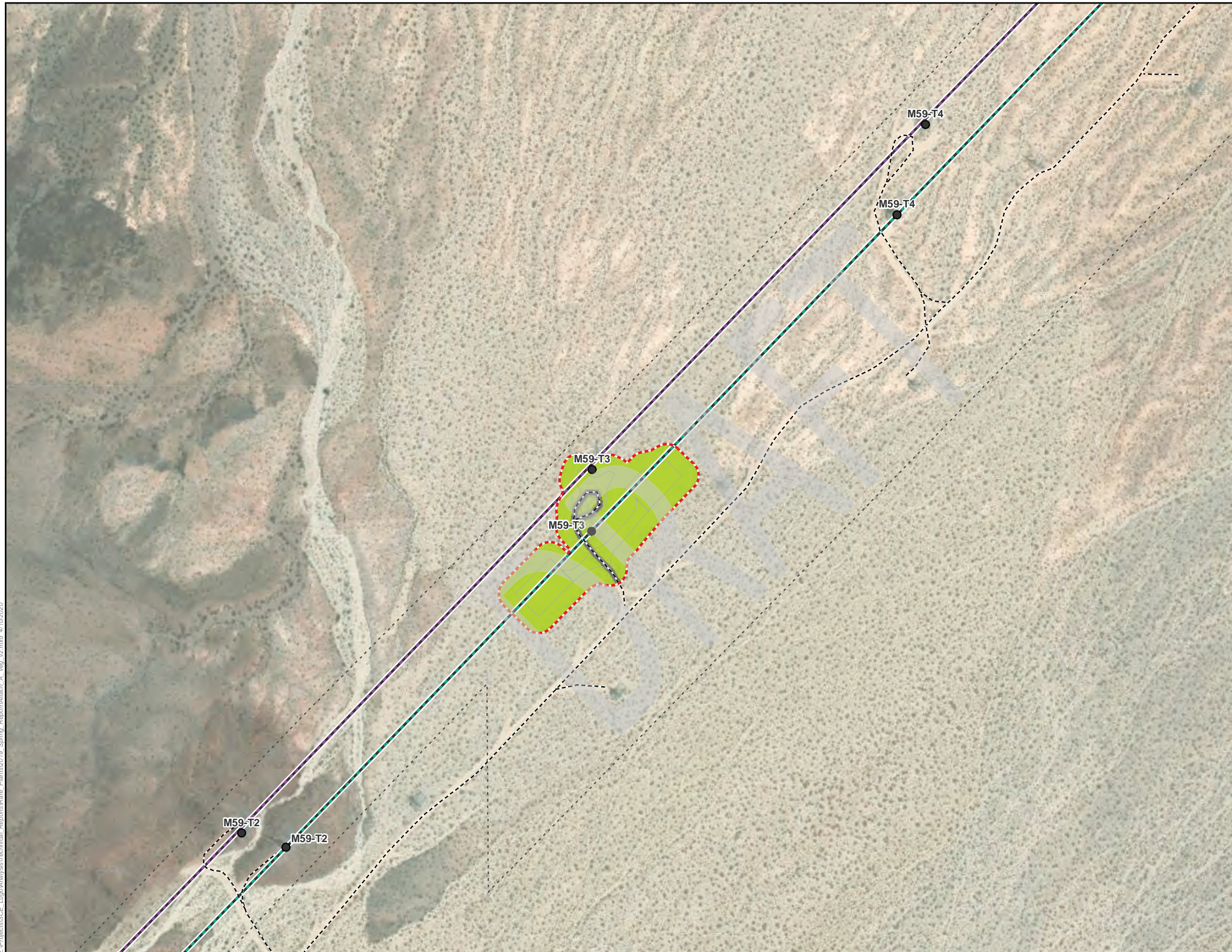


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 59 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance



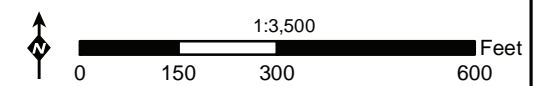
Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 60 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**














- Survey Area
- Project Components**
- Eldorado - Lugo 500 kV Transmission Line
- Lugo - Mohave 500 kV Transmission Line
- Existing Transmission Structure
- Modified Transmission Structure
- Construction Area
- Right-of-Way
- Access Road
- Vegetation Community/Land Cover**
- Developed
- Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

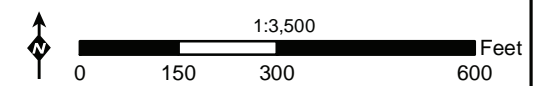


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 61 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance















Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Revised_Plants\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

Attachment A: Vegetation Communities and Land Covers Map 62 of 191

Eldorado-Lugo-Mohave Series Capacitor Project

-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Barren - Not Developed
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance













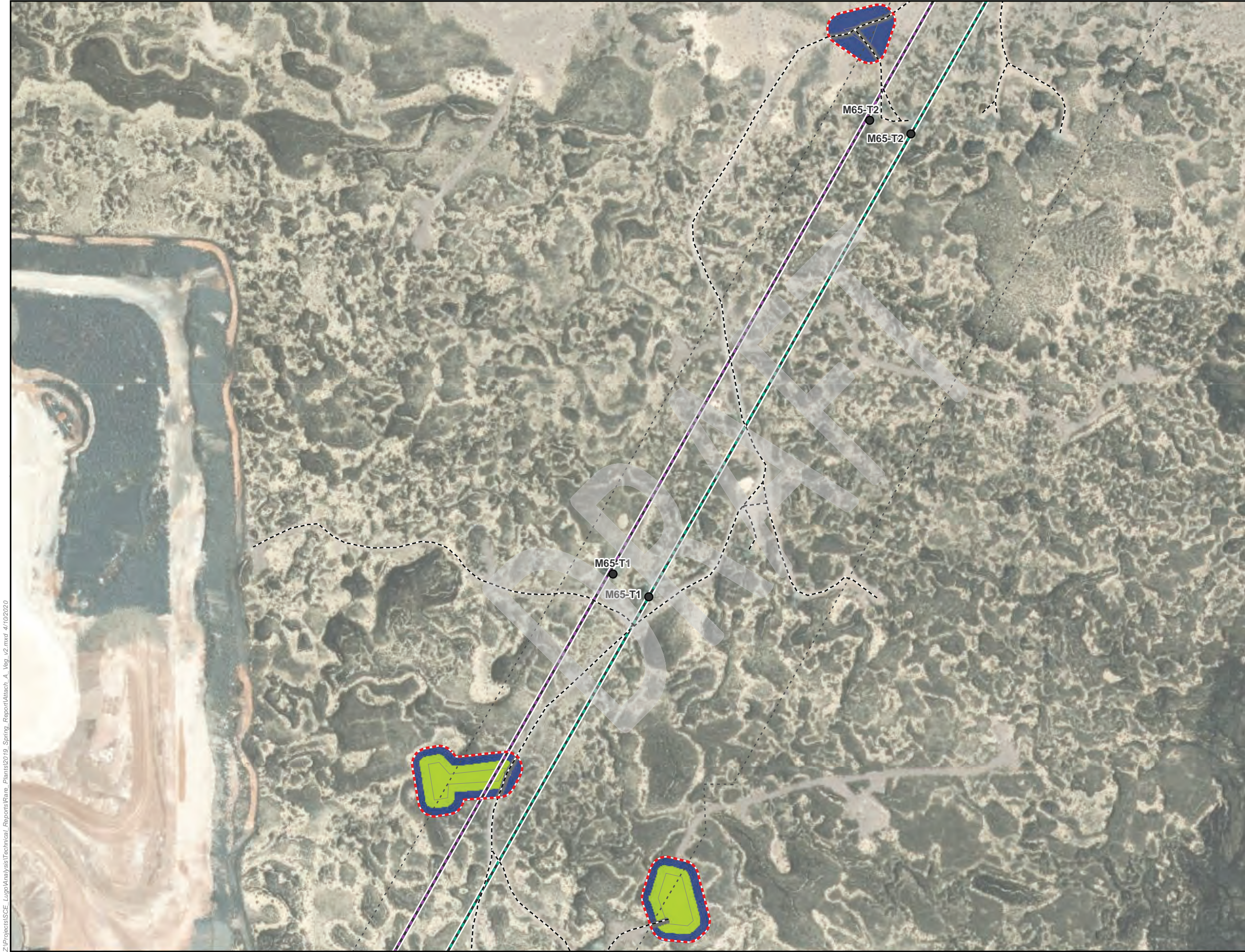
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Repe_Planets\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

Attachment A: Vegetation Communities and Land Covers Map 63 of 191

Eldorado-Lugo-Mohave Series Capacitor Project











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance

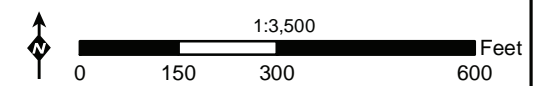


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 64 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance

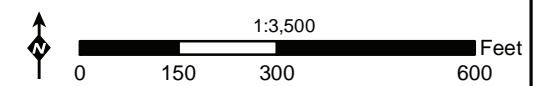


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 65 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance

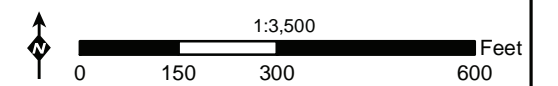
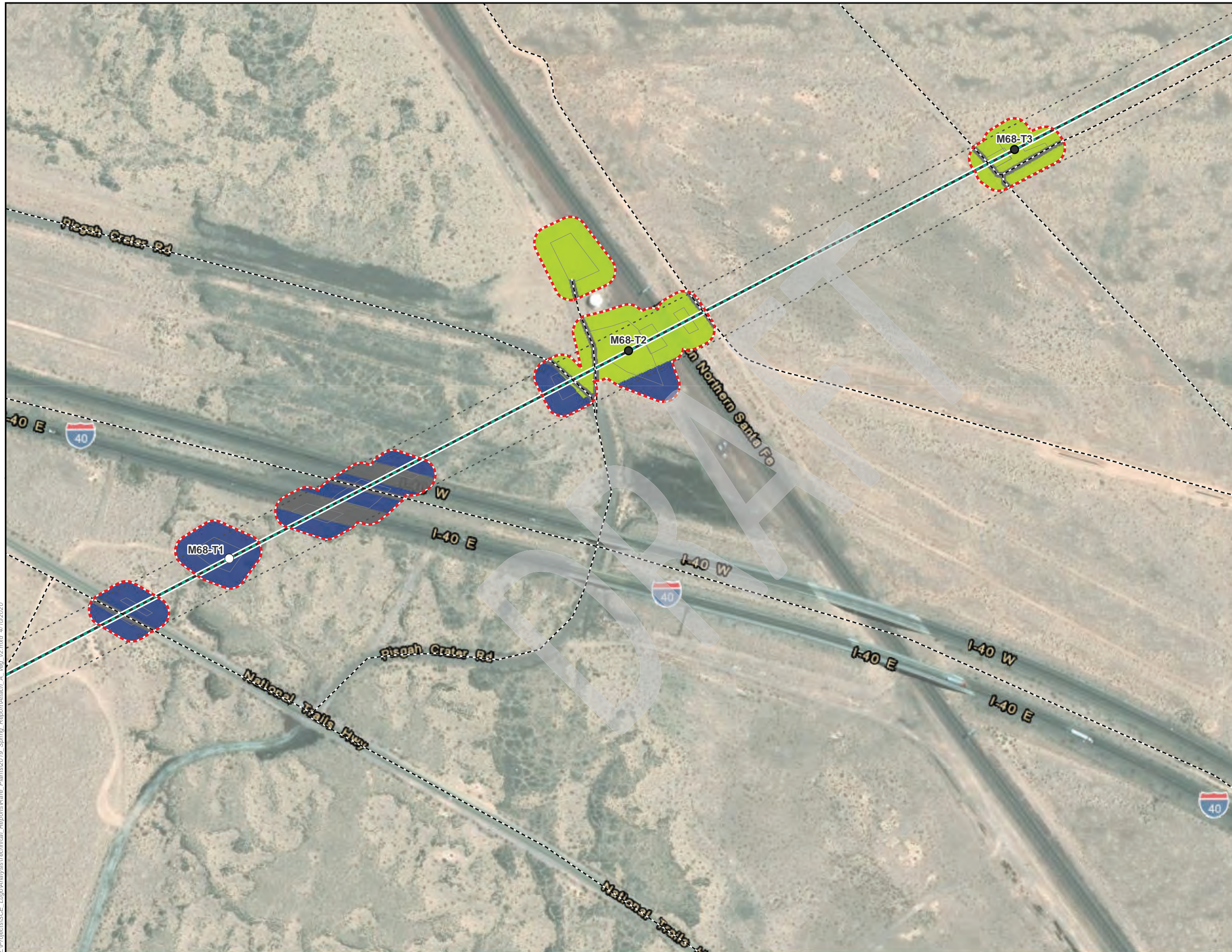


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 66 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance

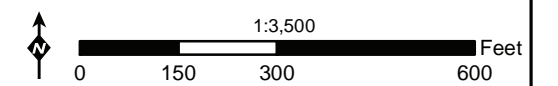
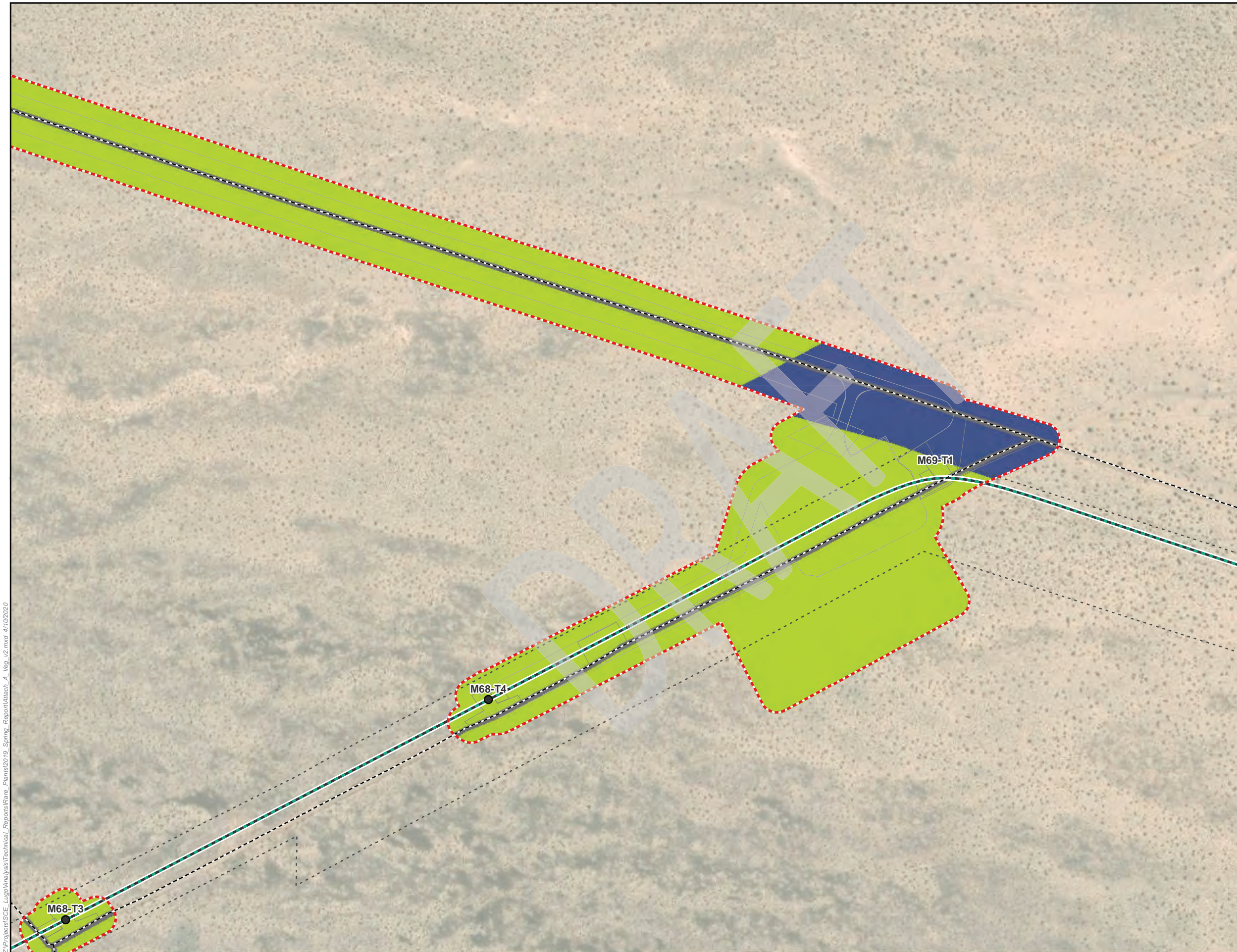


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 67 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**













-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance

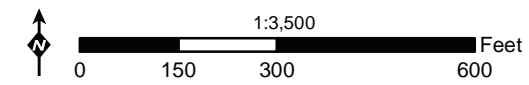
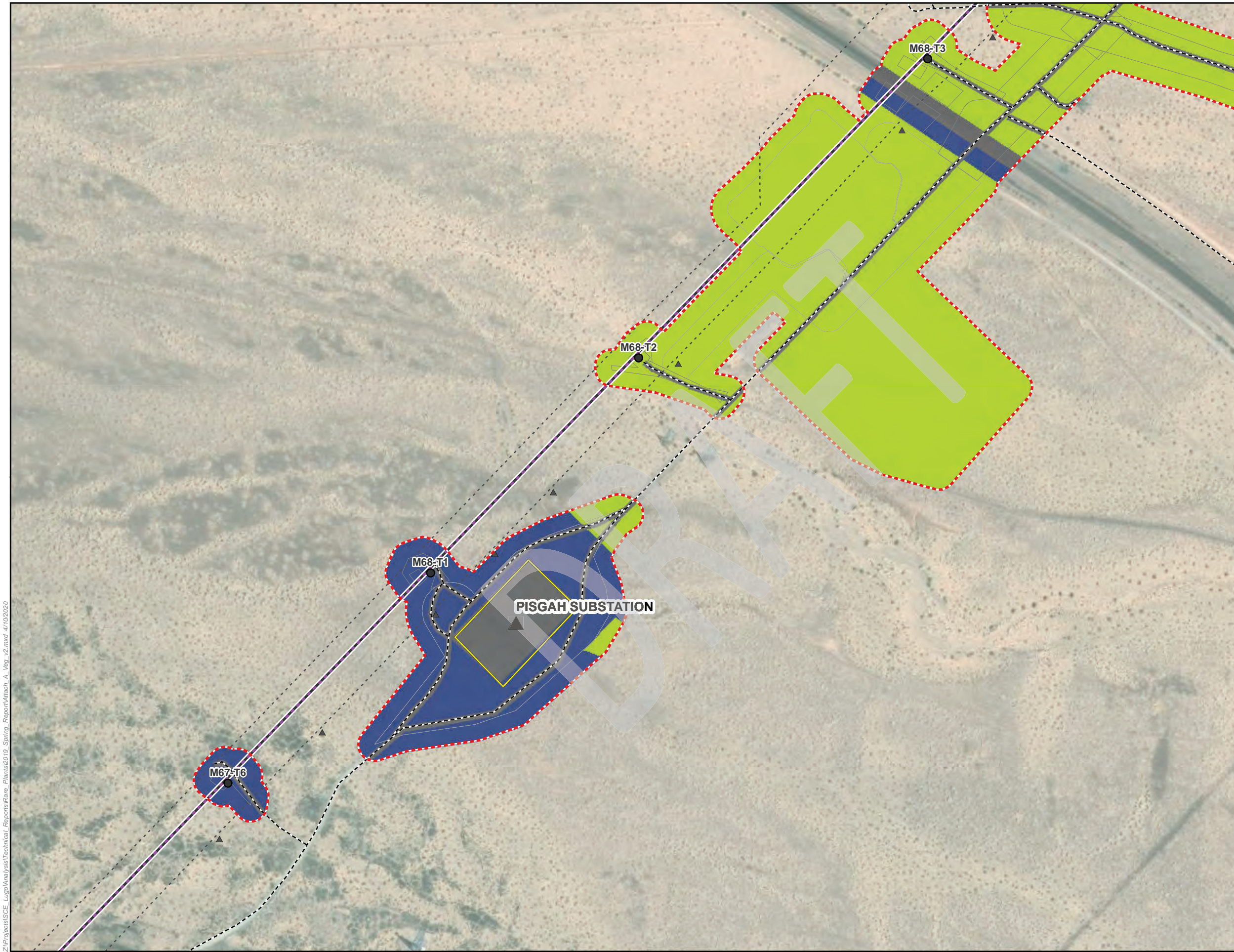


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 68 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Existing Substation
-  Existing Transmission Structure
-  Existing Distribution Structure
-  Existing Substation Boundary
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance














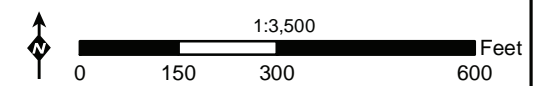
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Revised_Plans\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

**Attachment A:
Vegetation Communities and Land Covers
Map 69 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**








-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Transmission Line not part of Project
-  Existing Transmission Structure
-  Existing Distribution Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance

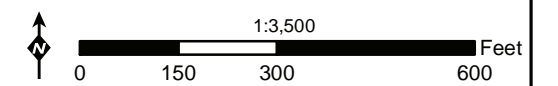


Source: Insignia, 2019; SCE, 2019

Attachment A:
Vegetation Communities and Land Covers
Map 70 of 191










Eldorado-Lugo-Mohave
Series Capacitor Project

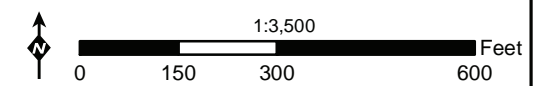
-  Survey Area
 -  Construction Area
 -  Right-of-Way
 -  Access Road
- Vegetation Community/Land Cover**
-  Developed
 -  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
 -  *Larrea tridentata* Shrubland Alliance



**Attachment A:
Vegetation Communities and Land Covers
Map 71 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**









-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* Shrubland Alliance

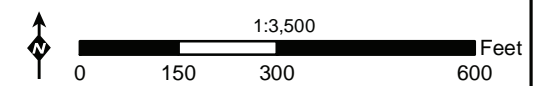


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 72 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* Shrubland Alliance

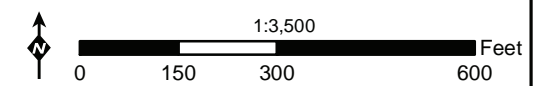
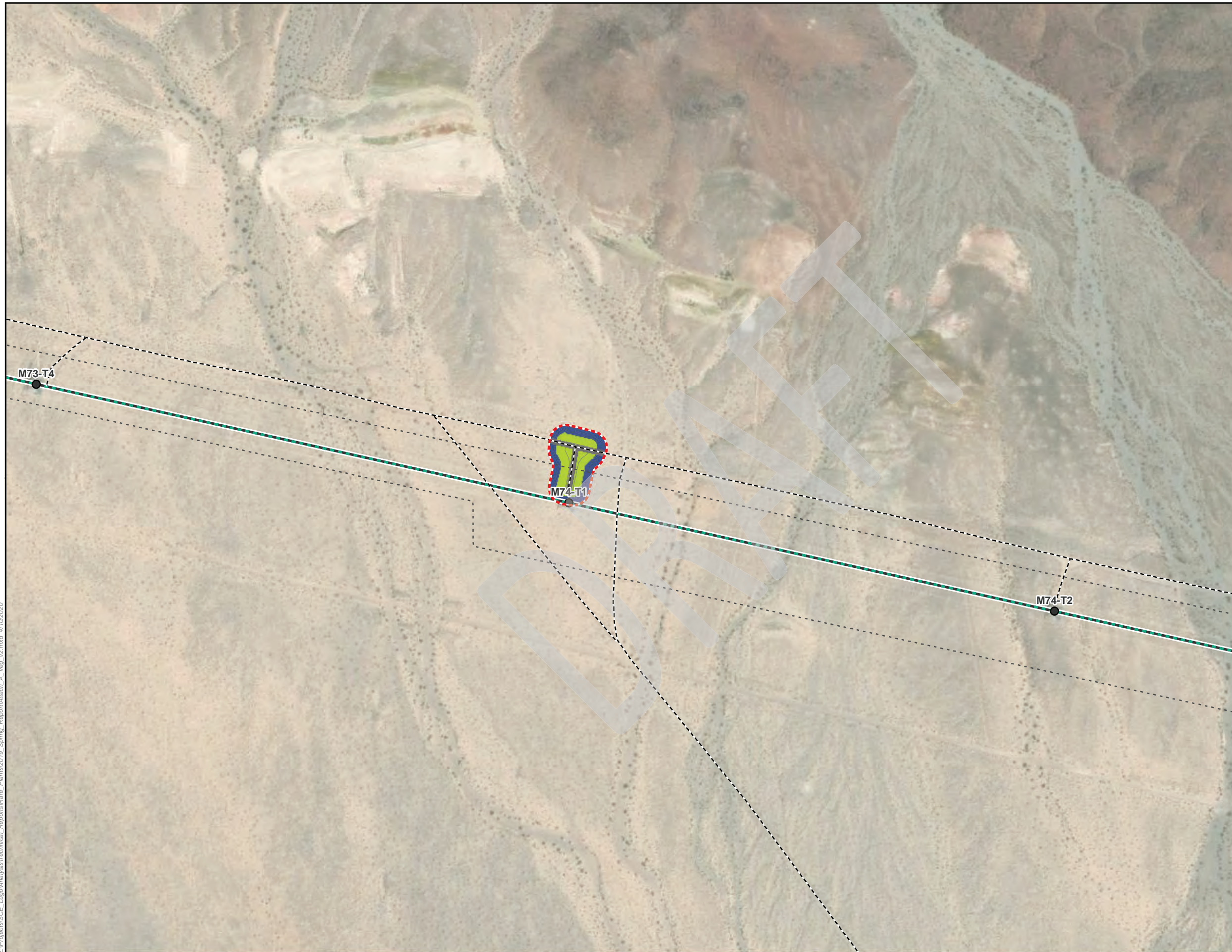


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 73 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance

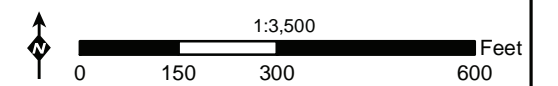


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 74 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Chorizanthe rigida* – *Geraea canescens*
Desert Pavement Sparsely Vegetated Alliance
-  Developed
-  *Larrea tridentata* Shrubland Alliance

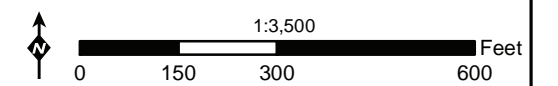


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 75 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Chorizanthe rigida* – *Geraea canescens*
Desert Pavement Sparsely Vegetated Alliance
-  Developed
-  *Larrea tridentata* Shrubland Alliance



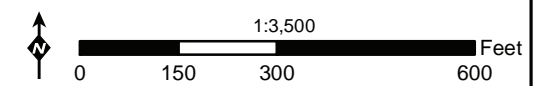
Source: Insignia, 2019; SCE, 2019



**Attachment A:
Vegetation Communities and Land Covers
Map 76 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**









-  Survey Area
-  Construction Area
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

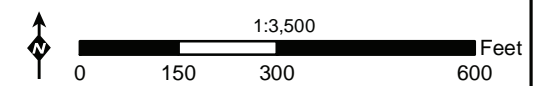


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 77 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**









-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* Shrubland Alliance

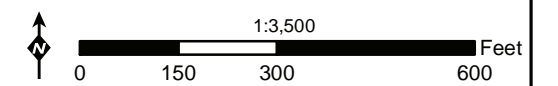
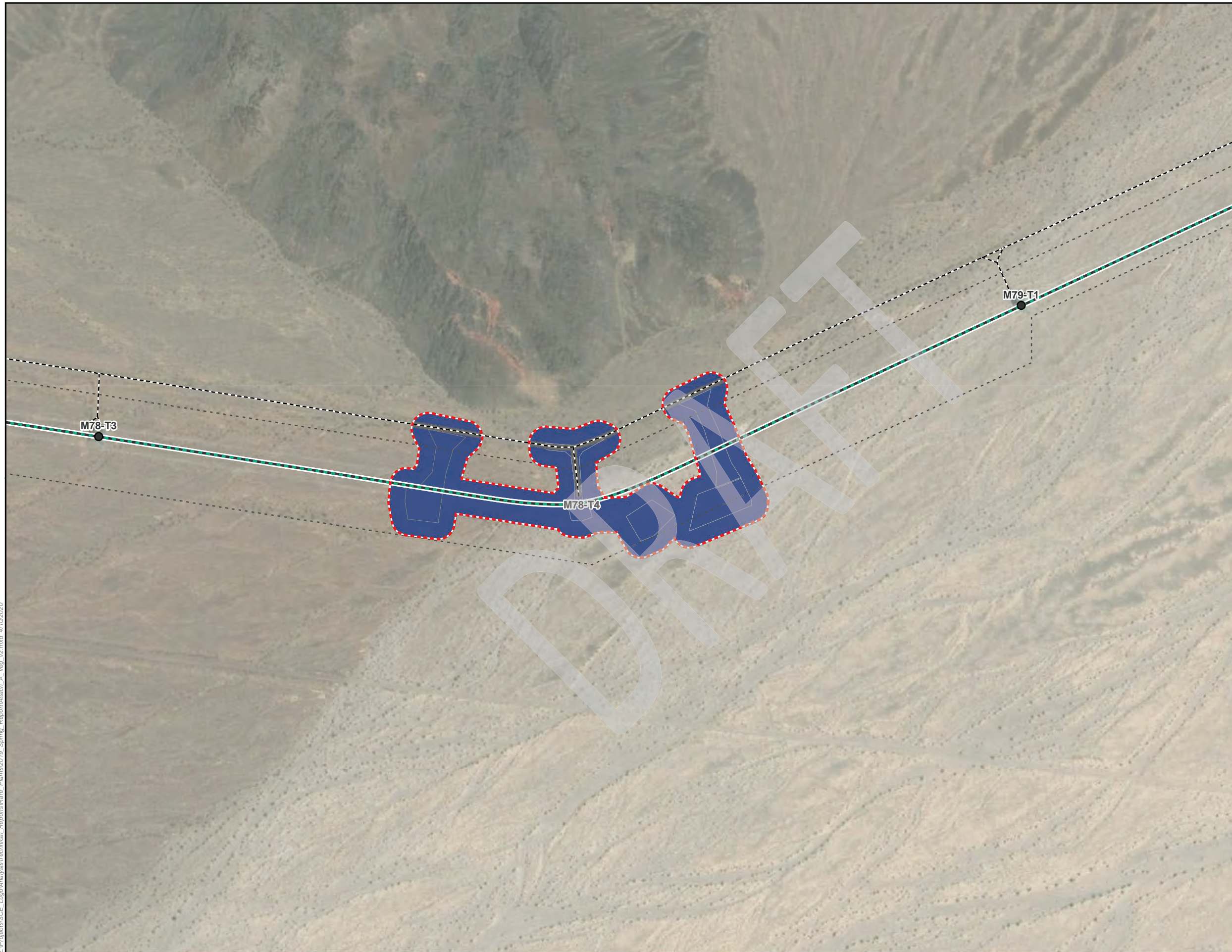


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 78 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* Shrubland Alliance

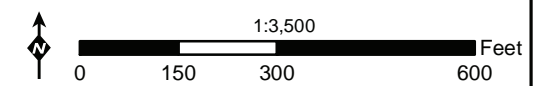


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 79 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
-  Construction Area
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

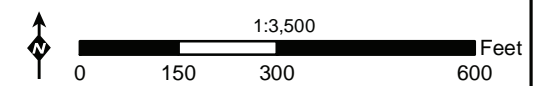


Source: Insignia, 2019; SCE, 2019

Attachment A:
Vegetation Communities and Land Covers
Map 80 of 191

Eldorado-Lugo-Mohave
Series Capacitor Project










- Survey Area
- Project Components**
 - Lugo - Mohave 500 kV Transmission Line
 - Existing Transmission Structure
 - Construction Area
 - Right-of-Way
 - Access Road
- Vegetation Community/Land Cover**
 - Developed
 - Larrea tridentata* Shrubland Alliance

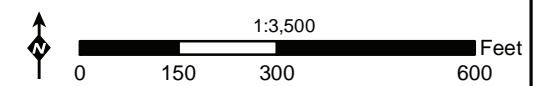


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 81 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**









-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* Shrubland Alliance



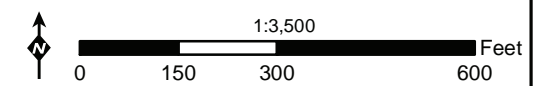
Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 82 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* Shrubland Alliance










DRAFT

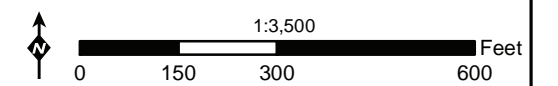


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 83 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance











Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Rare_Plants\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

Attachment A: Vegetation Communities and Land Covers Map 84 of 191

Eldorado-Lugo-Mohave Series Capacitor Project

-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance













DRAFT

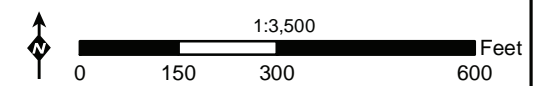


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 85 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance



Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 86 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Chilopsis linearis* - *Psoralea argemone* Woodland Alliance
-  Developed
-  *Larrea tridentata* Shrubland Alliance

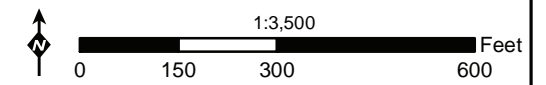
M89-T2

M89-T3

M89-T2

M89-T3










Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Rare_Plants\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

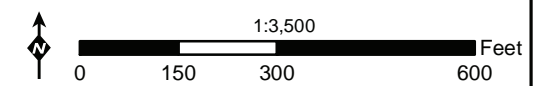


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 87 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance

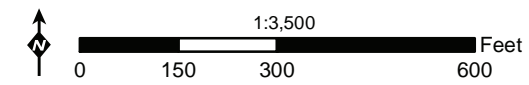


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 88 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Chorizanthe rigida* – *Geraea canescens*
Desert Pavement Sparsely Vegetated Alliance
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance













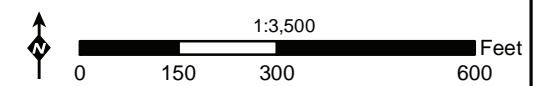
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Repe_Planets\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

**Attachment A:
Vegetation Communities and Land Covers
Map 89 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**









-  Survey Area
- Project Components**
-  Eldorado - Lugo 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* Shrubland Alliance
-  *Tamarix spp.* Shrubland Semi-Natural Alliance

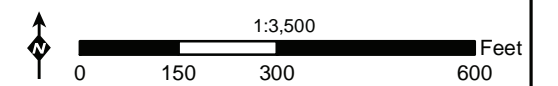


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 90 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

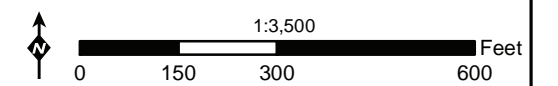


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 91 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**











-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

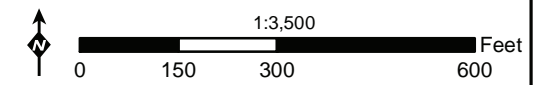
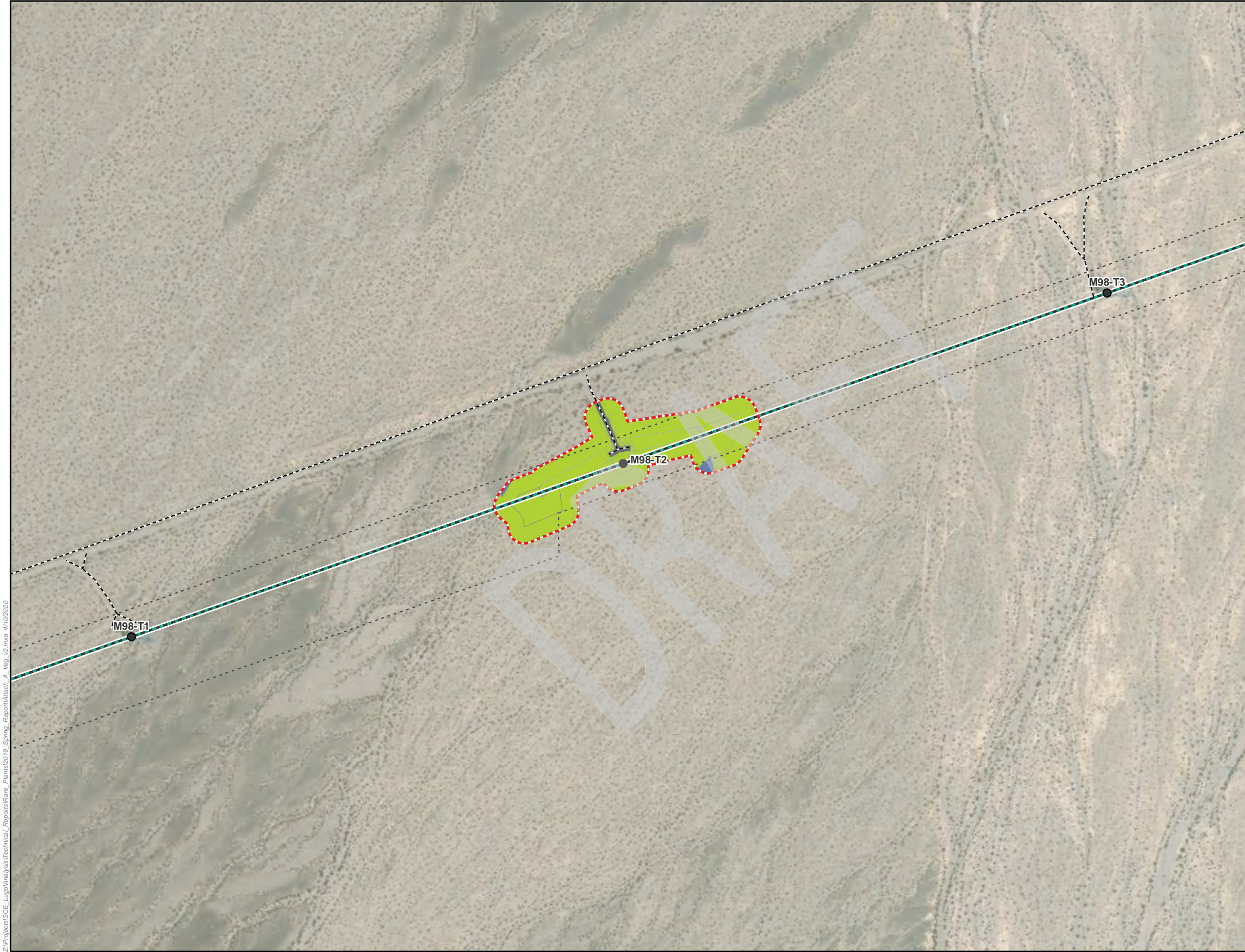


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 92 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  *Chorizanthe rigida* - *Geraea canescens*
Desert Pavement Sparsely Vegetated Alliance
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance











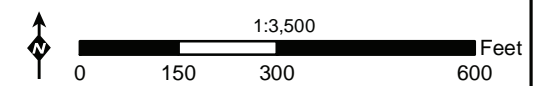
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Rare_Plants\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

**Attachment A:
Vegetation Communities and Land Covers
Map 93 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

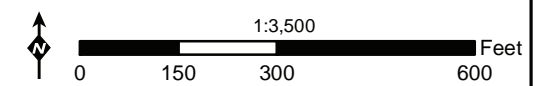


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 94 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance



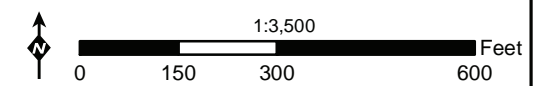
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Rare_Plants\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

Attachment A:
Vegetation Communities and Land Covers
Map 95 of 191

Eldorado-Lugo-Mohave
Series Capacitor Project

- Survey Area
- Project Components**
 - Lugo - Mohave 500 kV Transmission Line
 - Existing Transmission Structure
 - Modified Transmission Structure
 - Construction Area
 - Right-of-Way
 - Access Road
- Vegetation Community/Land Cover**
 - Developed
 - Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

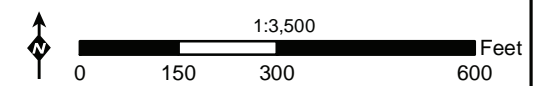
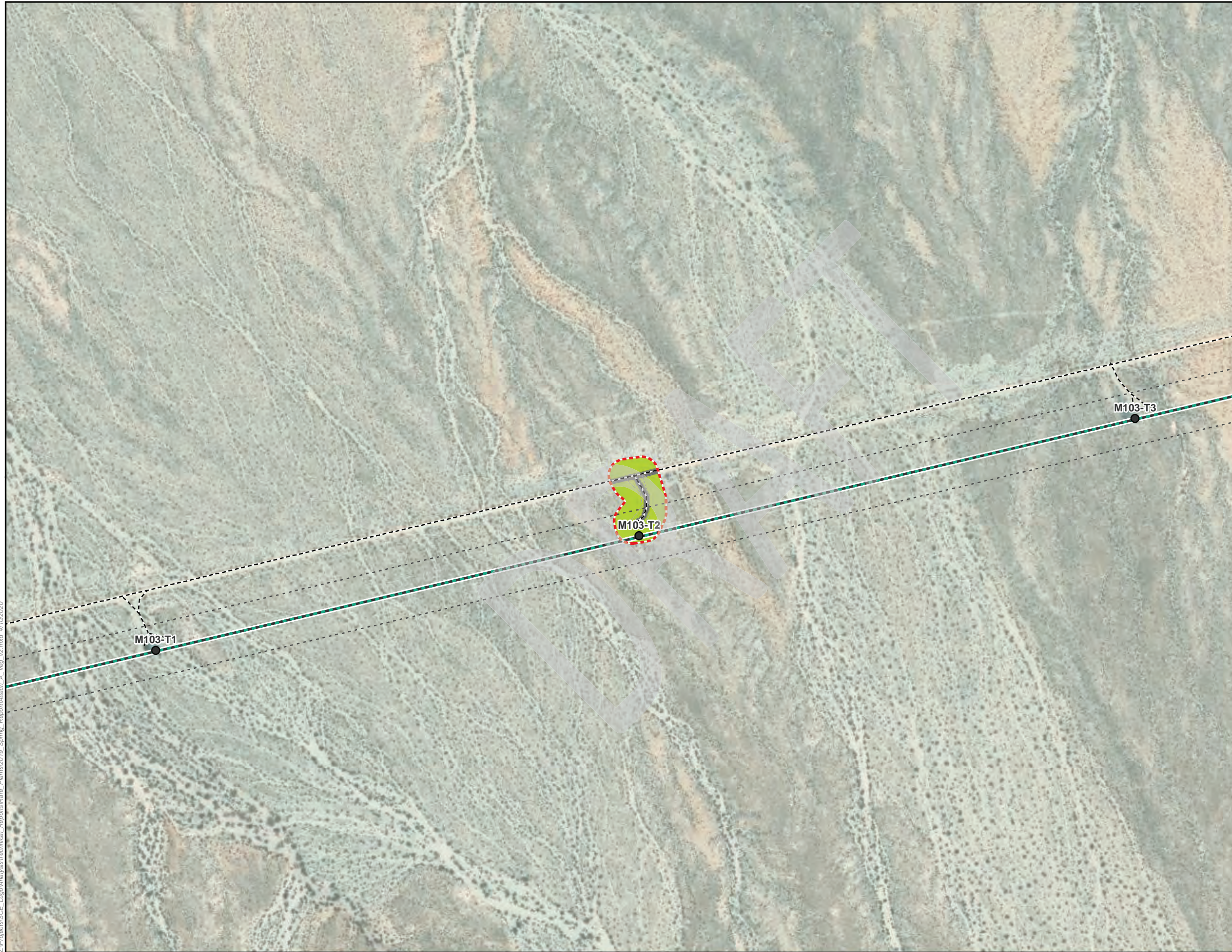


Source: Insignia, 2019; SCE, 2019

Attachment A:
Vegetation Communities and Land Covers
Map 96 of 191

Eldorado-Lugo-Mohave
Series Capacitor Project

- Survey Area
- Project Components**
 - Lugo - Mohave 500 kV Transmission Line
 - Existing Transmission Structure
 - Construction Area
 - Right-of-Way
 - Access Road
- Vegetation Community/Land Cover**
 - Developed
 - Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance











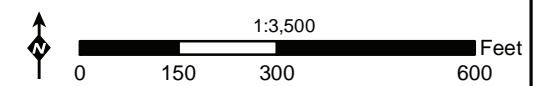
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Rare_Plants\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

**Attachment A:
Vegetation Communities and Land Covers
Map 97 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**










-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

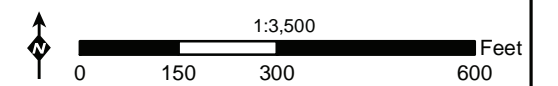


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 98 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance












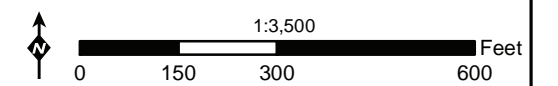
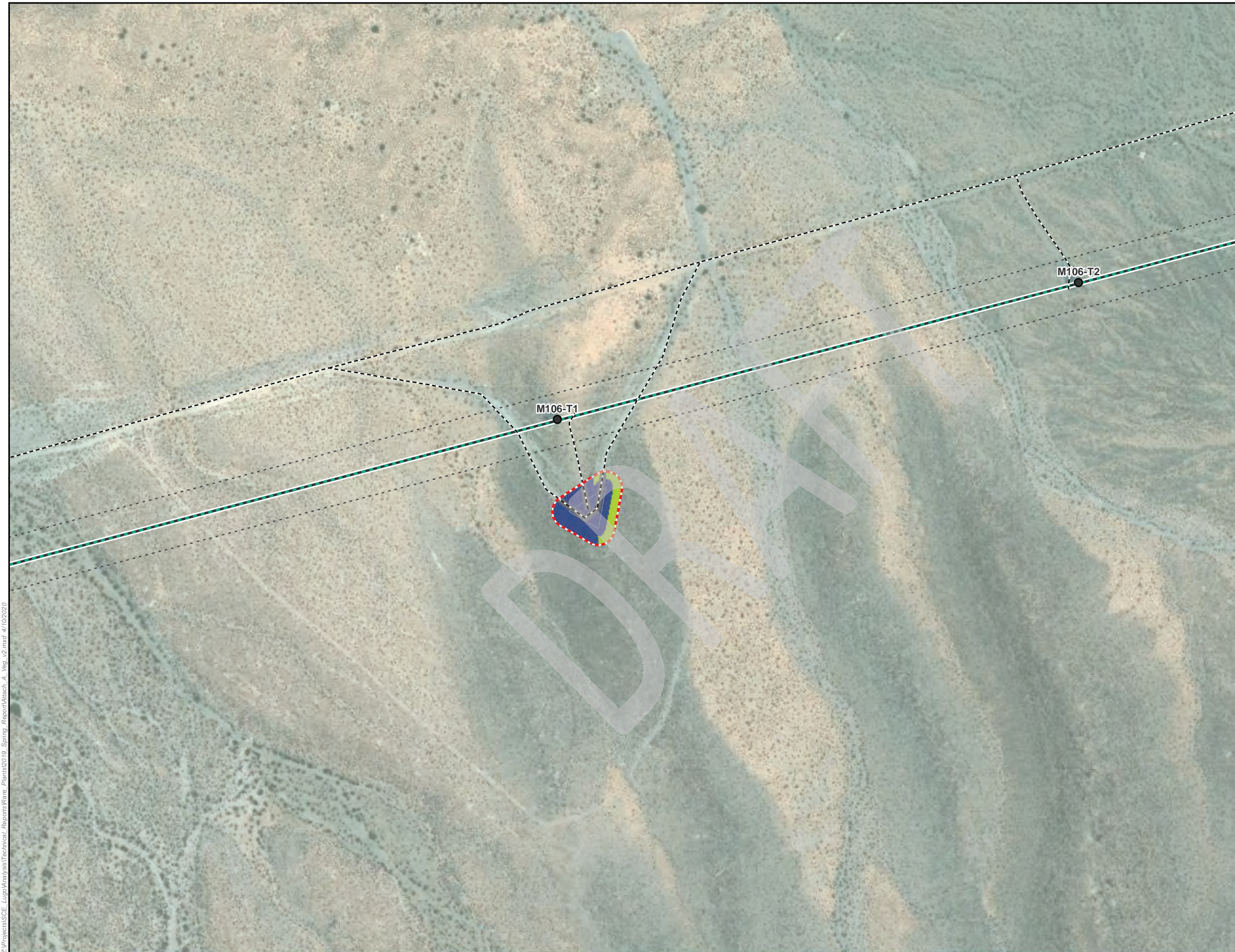
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Rare_Plants\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

**Attachment A:
Vegetation Communities and Land Covers
Map 99 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**









-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance
-  *Larrea tridentata* Shrubland Alliance

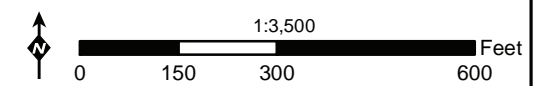
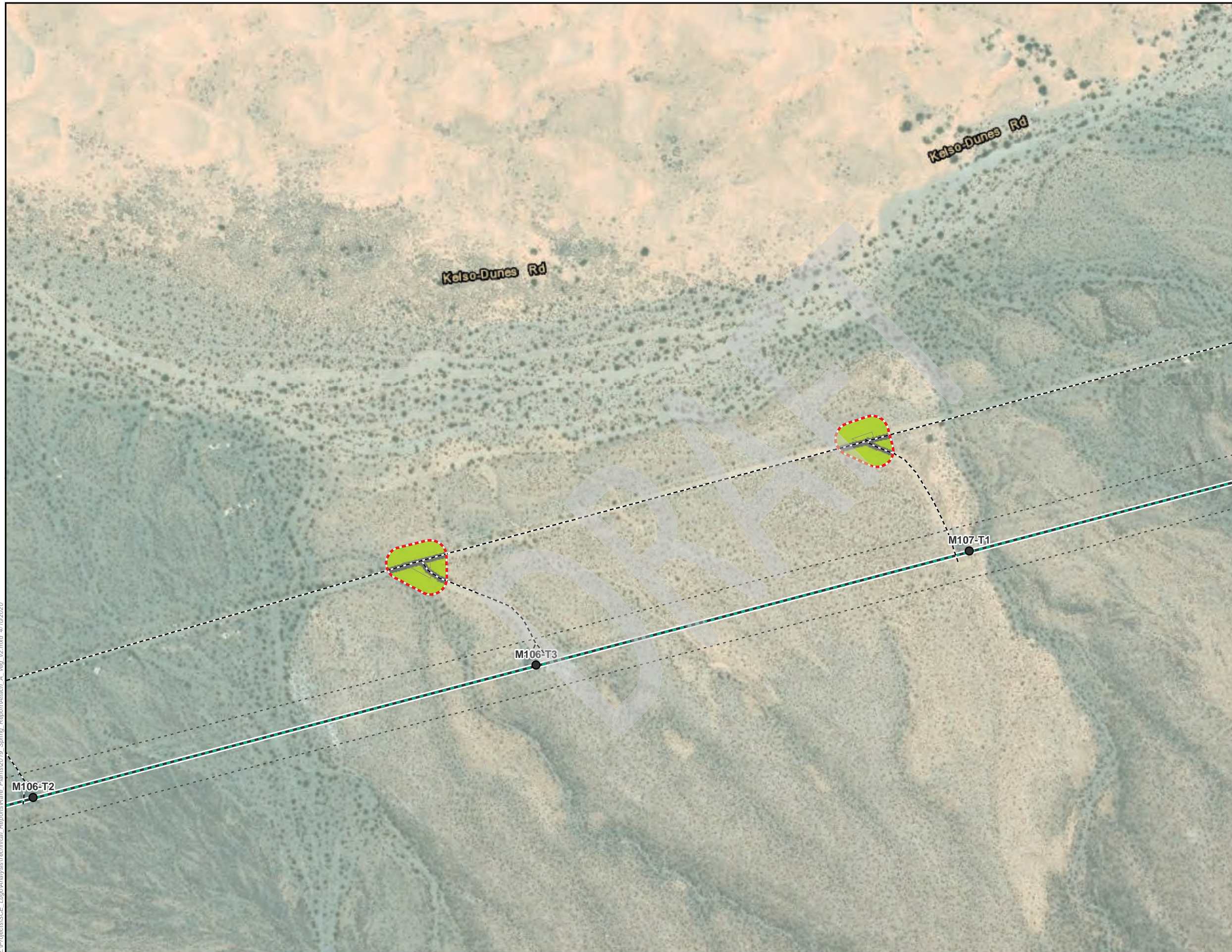


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 100 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance












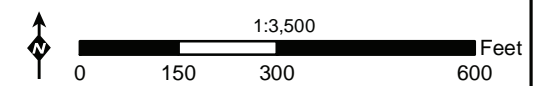
Source: Insignia, 2019; SCE, 2019

Z:\Projects\SCE_Lugo\Analysis\Technical_Reports\Repe_Planets\2019_Spring_Report\Attach_A_Veg_V2.mxd 4/10/2020

**Attachment A:
Vegetation Communities and Land Covers
Map 101 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**









-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Modified Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance

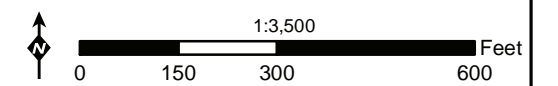


Source: Insignia, 2019; SCE, 2019

**Attachment A:
Vegetation Communities and Land Covers
Map 102 of 191**

**Eldorado-Lugo-Mohave
Series Capacitor Project**

-  Survey Area
- Project Components**
-  Lugo - Mohave 500 kV Transmission Line
-  Existing Transmission Structure
-  Construction Area
-  Right-of-Way
-  Access Road
- Vegetation Community/Land Cover**
-  Developed
-  *Larrea tridentata* - *Ambrosia dumosa* Shrubland Alliance



Source: Insignia, 2019; SCE, 2019