# Appendix A

General Order 95 Clearance Requirements

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# General Order 95

## Section III

### Requirements for All Lines

**Table 1: Basic Minimum Allowable Vertical Clearance of Wires above Railroads, Thoroughfares, Ground or Water Surfaces; Also Clearances from Poles, Buildings, Structures or Other Objects ( nn ) (Letter References Denote Modifications of Minimum Clearances as Referred to in Notes Following This Table)**

| Case No. | Nature of Clearance | Wire or Conductor Concerned | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | A Span Wires (Other than TrolleySpan Wires) Overhead Guys and Messengers | B Communication Conductors (IncludingOpen Wire, Cables and Service Drops), Supply Service Drops of 0 - 750 Volts | C Trolley Contact, Feeder and Span Wires, 0 - 5,000 Volts | D Supply Conductors of 0 - 750 Volts and Supply Cables Treated as in Rule 57.8 | E Supply Conductors and Supply Cables, 750 - 22,500 Volts | F Supply Conductors and Supply Cables, 22.5 - 300 kV | G Supply Conductors and Supply Cables, 300 - 550 kV( mm ) |
| 1 | Crossing above tracks of railroads which transport or propose to transport freight cars (maximum height 15 feet, 6 inches) where not operated by overhead contact wires. (a) (b) (c) (d) | 25 Feet | 25 Feet | 22.5 Feet | 25 Feet | 28 Feet | 34 Feet | 34 Feet (kk) |
| 2 | Crossing or paralleling above tracks of railroads operated by overhead trolleys. (b) (c) (d) | 26 Feet (e) | 26 Feet (e) (f) (g) | 22.5 Feet (h) (i) (eee) | 20 Feet (ii) | 25 Feet (o) (ii) | 30 Feet (o) (ii) | 30Feet (o) (ii) (kk) |
| 3 | Crossing or along thoroughfares in urban districts or crossing thoroughfares in rural districts. (c) (d) | 18 Feet (j) (k) (ii) | 18 Feet (j) (l) (m) (ii) (kkk) | 19 Feet (hh) (eee) | 20 Feet (ii) | 25 Feet (o) (ii) | 30 Feet (o) (ii) | 30 Feet (o) (ii) (kk) |
| 4 | Above ground along thoroughfares in rural | 15 Feet (k) | 15 Feet (m) (n) (p) | 19 Feet (eee) | 19 Feet | 25 Feet (o) | 30 Feet (o) (p) | 30 Feet (o) (kk) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | districts or across other areas capable of being traversed by vehicles or agricultural equipment. | | | | | | | |
| **5** | Above ground in areas accessible to pedestrians only | 8 Feet | 10 Feet (m) (q) | 19 Feet (eee) | 12 Feet | 17 Feet | 25 Feet (o) | 25 Feet (o) (kk) |
| **6** | Vertical clearance above walkable surfaces on buildings, (except generating plants or substations) bridges or other structures which do not ordinarily support conductors, whether attached or unattached. | 8 Feet (r) | 8 Feet (r) | 8 Feet | 8 Feet | 12 Feet | 12 Feet | 20 Feet (ll) |
| **6a** | Vertical clearance above non–walkable surfaces on buildings, (except generating plants or substations) bridges or other structures, which do not ordinarily support conductors, whether attached or unattached | 2 Feet | 8 Feet (yy) | 8 Feet | 8 Feet (zz) | 8 Feet | 8 Feet | 20 Feet |
| **7** | Horizontal clearance of conductor at rest from buildings (except generating plants and substations), bridges or other structures (upon which men may work) where such conductor is not attached thereto (s) (t) | - | 3 Feet (u) | 3 Feet | 3 Feet (u) (v) | 6 Feet (v) | 6 Feet (v) | 15 Feet (v) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **8** | Distance of conductor from center line of pole, whether attached or unattached (w) (x) (y) | - | 15 inches (s) (aa) | 15 inches (aa) (bb) (cc) | 15 inches (o) (aa) (dd) | 15 or 18 inches (o) (dd) (ee) (jj) | 18 inches (dd) (ee) | Not Applicable |
| **9** | Distance of conductor from surface of pole, crossarm or other overhead line structure upon which it is supported, providing it complies with case 8 above (x) (ee) | - | 3 inches (aa) (ff) | 3 inches (aa) (cc) (gg) | 3 inches (aa) (dd) (gg) | 3 inches (dd) (gg) (jj) | 1/4 Pin Spacing Shown in Table 2 Case 15 (dd) | 1/2 Pin Spacing Shown in Table 2 Case 15 (dd) |
| **10** | Radial centerline clearance of conductor or cable (unattached) from non–climbable street lighting or traffic signal poles or standards, including mastarms, brackets and lighting fixtures, and from antennas that are not part of the overhead line system. | - | 1 Foot (u) (rr) (ss) | 15 inches (bb) (cc) | 3 Feet (oo) | 6 Feet (pp) | 10 Feet (qq) | 10 Feet (ll) |
| **11** | Water areas not suitable for sailboating (tt) (uu) (ww) (xx) | 15 Feet | 15 Feet | - | 15 Feet | 17 Feet | 25 Feet | 25 Feet (kk) |
| **12** | Water areas suitable for sailboating, surface area of: (tt) (vv) (ww) (xx)<br>(A) Less than 20 acres<br>(B) 20 to 200 acres<br>(C) Over 200 to 2,000 acres<br>(D) Over 2,000 acres | 18 Feet<br>26 Feet<br>32 Feet<br>38 Feet | 18 Feet<br>26 Feet<br>32 Feet<br>38 Feet | -<br>-<br>-<br>- | 18 Feet<br>26 Feet<br>32 Feet<br>38 Feet | 20 Feet<br>28 Feet<br>34 Feet<br>40 Feet | 27 Feet<br>35 Feet<br>41 Feet<br>47 Feet | 27 Feet (kk)<br>35 Feet (kk)<br>41 Feet (kk)<br>47 Feet (kk) |
| **13** | Radial clearance of bare line conductors from tree | - | - | 18 inches (bbb) | - | 18 inches (bbb) | 1/4 pin spacing shown in Table 2, Case 15 (bbb) (ccc) | 1/2 pin spacing shown in Table 2, Case 15 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | branches or foliage (aaa) (ddd) | | | | | | | |
| **14** | Radial clearance of bare line conductors from vegetation in Extreme and Very High Fire Threat Zones in Southern California (aaa) (ddd) (hhh) (jjj) | - | - | 18 inches (bbb) | - | 48 inches (bbb) (iii) | 48 inches (fff) | 120 inches (ggg) |

**References to Rules Modifying Minimum Clearances in Table 1**

(a) Shall not be reduced more than 5% because of temperature or loading - Rule 37
1. Supply lines - Rule 54.4–B1
2. Communication lines - Rule 84.4–B1

(b) Shall be increased for supply conductors on suspension insulators, under certain conditions - Rule 37

(c) Special clearances are provided for traffic signal equipment - Rule 58.4–C

(d) Special clearances are provided for street lighting equipment - Rule 58.5–B

(e) Based on trolley pole throw of 26 feet. may be reduced where suitably protected - Rule 56.4–B2
1. Supply guys - Rule 56.4–B2
2. Supply cables and messengers - Rule 57.4–B2
3. Communication guys - Rule 86.4–B2
4. Communication cables and messengers - Rule 87.4–B2

(f) May be reduced depending on height of trolley contact conductors
1. Supply service drops - Rule 54.8–C5
2. Communication service drops - Rule 84.8–D5

(g) May be reduced and shall be increased depending on trolley throw
1. Supply conductors (except service drops) - Rule 54.4–B2
2. Communication conductors (except service drops) - Rule 84.4–B2

(h) May be decreased where freight cars are not transported.
1. Trolley contact and feeder conductors - Rule 74.4–B1
2. Trolley span wires - Rule 77.4–A

(i) May be reduced for trolley contact and span wires in subways, tunnels, under bridges and in fenced areas
1. Trolley contact conductors - Rule 74.4–E
2. Trolley span wires - Rule 77.4–B

(j) May be reduced at crossings over private thoroughfares and entrances to private property and over private property
1. Supply service drops - Rule 54.8–B2
2. Supply guys - Rule 56.4–A
3. Communication service drops - Rule 84.8–C2
4. Communication guys - Rule 86.4–A

(k) May be reduced along thoroughfares where not normally accessible to vehicles
1. Supply guys - Rule 56.4–A1
2. Communication guys - Rule 86.4–A1

(l) May be reduced where within 12 feet of curb line of public thoroughfares
1. Supply service drops - Rule 54.8–B1
2. Communication service drops - Rule 84.8–C1

(m) May be reduced for railway signal cables under special conditions - Rule 84.4–A4

(n) May be reduced in rural districts
1. Intentionally left blank
2. Intentionally left blank
3. Communication conductors along roads - Rule 84.4–A2

(o) May be reduced for transformer, regulator or capacitor leads
1. Transformer leads - Rule 58.1–B
2. Regulator or capacitor leads - Rule 58.1–B

(p) May be reduced across arid or mountainous areas
1. Supply conductors of more than 22,500 volts - Rule 54.4–A1
2. Communications conductors - Rule 84.4–A1

(q) Shall be increased or may be reduced under special conditions
1. Intentionally left blank
2. Intentionally left blank
3. Communications conductors - Rule 84.4–A3
4. Increased for communication service drops on industrial or commercial premises - Rule 84.8–C3a
5. Communication service drops on residential premises - Rule 84.8–C3b

(r) May be reduced above roofs of buildings under special conditions
1. Supply overhead guys - Rule 56.4–G
2. Supply service drops - Rule54.8–B4
3. Communication overhead guys - Rule 86.4–F
4. Communication conductors and cables- Rule 84.4–E
5. Communication service drops- Rule 84.8–C4

(s) Also applies at fire escapes, etc.
1. Supply conductors- Rule 54.4–H1
2. Vertical clearances- Rule 54.8B4a
3. Horizontal clearance- Rule 54.8–B4b
4. Communication conductors- Rule 84.4–E

(t) Special clearances where attached to buildings, bridges or other structures
1. Supply conductors of 750 - 22,500 volts- Rule 54.4–H2
2. Trolley contact conductors- Rule 74.4–E
3. Communication conductors- Rule 84.4–F

(u) Reduced clearances permitted under special conditions
1. Supply service drops on industrial or commercial premises- Rule 54.8–B4a
2. Supply cables, grounded - Rule 57.4–G
3. Communication cables beside buildings, etc.- Rule84.4–E
4. Communication conductors under bridges, etc.- Rule84.4–F
5. Communication service drops- Rule 84.8–C4

6. Communication cables passing nonclimbable street light poles, etc.- Rule 84.4–D4a

(v) May be reduced under special conditions
1. Supply conductors of 750 - 7,500 volts- Rule 54.4–H1
2. Supply transformer lead and bus wires, where guarded- Rule 58.1

(w) May be reduced at angles in lines and transposition points
1. Supply conductors- Rule 54.4–D1
2. Communication conductors- Rule 84.4–D5

(x) May be reduced for suitably protected lateral or vertical runs
1 Supply bond wires- Rule 53.4
.
2. Supply ground wires- Rule 54.6–B
3. Supply lateral conductors- Rule54.6–C
4. Supply vertical runs- Rule 54.6–D
5. Supply risers- Rule 54.6–E
6. Communication ground wires- Rule 84.6–B
7. Communication lateral conductors- Rule 84.6–C
8. Communication vertical runs- Rule84.6–D
9. Communication risers - Rule 84.6–E

(y) Increased clearances required for certain conductors
1. Unattached conductors on colinear and crossing lines- Rule 32.3
2. Unattached supply conductors- Rule 54.4–D3
3. Supply service drops on clearance crossarms - Rule 54.8–C2
4. Supply service drops on pole top extensions- Rule 54.8–C3
5. Unattached supply service drops - Rule 54.8–D
6. Communication lines, colinear, conflicting or crossing - Rule 84.4–D3
7. Communication conductors passing supply poles and unattached thereto- Rule 84.4–D4
8. Communication service drops on clearance crossarms - Rule84.8–D2
9. Communication service drops on pole top extensions - Rule84.8–D3
10. Unattached communication service drops- Rule 84.8–E

(z) Special provisions for police and fire alarm conductors require increased clearances- Rule 92.2

(aa) May be reduced under special provisions
1. Supply conductors of 0 - 750 volts in rack configuration - Rule 54.4–D5
2. Service supply drops from racks - Rule 54.8–F
3. Supply cables and messengers attached to poles - Rule 57.4–F
4. Communication conductors on communication poles - Rule 84.4–D
5. Communication conductors on crossarms - Rule 84.4–D1
6. Communication conductors attached to poles - Rule 84.4–D2
7. Communication service drops attached to poles - Rule 84.8–B
8. Communication cables and messengers - Rule 87.4–D
9. Supply or communication cables and messengers on jointly used poles - Rule 92.1–B
10. Communication open wire on jointly used poles - Rule 92.1–C
11. Multiconductor cable with bare neutral - Rule 54.10–B1

(bb) May be reduced for class t conductors of not more than 750 volts and of the same potential and polarity - Rule 74.4–D

(cc) Not applicable to trolley span wires - Rule 77.4–E

(dd) Special clearances for pole–top and deadend construction

1. Conductors deadended in vertical configuration on poles - Rule 54.4–C4
2. Conductors deadended in horizontal configuration - Rule 54.4–D8

(ee) Clearance requirements for certain voltage classifications - Rule 54.4–D2

(ff) Not applicable to communication conductors - Rule 84.4–D

(gg) Clearance from crossarms may be reduced for certain conductors
1. Suitable insulated leads to protect runs - Rule 54.4–E
2. Leads of 0 - 5,000 volts to equipment - Rule 54.4–E
3. Leads of 0 - 5,000 volts to cutouts or switches - Rule 58.3–A2

(hh) Reduced clearance permitted from temporary fixtures and lighting circuits 0 - 300 volts - Rule 78.3–A1

(ii) Special Clearances Required Above Public and Private Swimming Pools
1. Supply line conductors - Rule 54.4–A3
2. Supply service drops - Rule 54.8–B5
3. Communication line conductors - Rule 84.4–A5
4. Communication service drops - Rule 84.8–C5
5. Supply guys, span wires - Rule56.4–A3
6. Communication guys - Rule 86.4–A3

(jj) May be decreased in partial underground distribution 54.4–D2

(kk) Shall be increased by 0.025 feet per kV in excess of 300 kV

(ll) Shall be increased by 0.04 feet per KV in excess of 300 kV

(mm) Proposed clearances to be submitted to the cpuc prior to construction for circuits in excess of 550 kV.

(nn) Voltage shown in the table shall mean line–to–ground voltage for direct current (DC) systems

(oo) May Be reduced for grounded or multi–conductor cables
1. Grounded cables - Rule 57.4–H
2. Multi–Conductor cables - Rule 54.10–B2

(pp) May be reduced to 4 feet for voltages below 7,500 volts - Rule 54.4–D3

(qq) May be reduced to 6 feet for voltages below 75 kV

(rr) May be reduced for supply service drops - Rule 54.8–D1

(ss) May be reduced for communications service drops- Rule 84.8–E1

(tt) Where a federal agency or surrogate thereof has issued a crossing permit, clearances of that permit shall govern.

(uu) Or Where sailboating is prohibited and where other boating activities are allowed

(vv) Clearance above contiguous ground shall be 5 feet greater than in cases 11 or 12 for the type of water area served for boat launch facilities and for area contiguous thereto, that are posted, designated or specifically prepared for rigging of sailboats or other watercraft.

(ww) For controlled impoundments, the surface areas and corresponding clearances shall be based upon the high water level. for other waters, the surface areashall be that enclosed by its annual flood level. the clearance over rivers, streams and canals shall be based upon the largest surface areas of any one–mile long segment

which includes the crossing. the clearance over a canal, river or stream normally used to provide access for sailboats to a larger body of water shall be the same as that required for the larger body of water

(xx) Water areas are lakes, ponds, reservoirs, tidal waters, rivers, streams and canals without surface obstructions

(yy) May be reduced over non–walkable structures - Rule 54.8 (Table 10 )

(zz) May be reduced to 2 feet for conductors insulated in accordance with - Rule 20.9–G

(aaa) Special requirements for communication and supply circuits energized at 0 - 750 volts - Rule 35

(bbb) May be reduced for conductor of less than 60,000 volts when protected from abrasion and grounding by contact with tree - Rule 35

(ccc) For 22.5 kV to 105 kV, minimum clearance shall be 18 inches.

(ddd) Clearances in this case shall be maintained for normal annual weather variations, rather than at 60 degrees, no wind.

(eee) May be reduced to 18 feet if the voltage does not exceed 1000 volts and the clearance is not reduced to more than 5% below the reduced value of 18 feet because of temperature and loading as specified in Rules 37 and 43 .

(fff) Clearances in this case shall be increased for conductors operating above 72 kV, to the following:

1. Conductors operating between 72kV and a 110 kV shall maintain a 72 inch clearance
2. Conductors operating above 110 kV shall maintain a 120 inch clearance

(ggg) Shall be increased by 0.40 inch per kV in excess of 500 kV

(hhh) The High Fire-Threat District is defined in GO 95, Rule 21.2-D.

(iii) May be reduced to 18 inches for conductors operating less than 2.4 kV.

(jjj) Clearances in this case shall not apply to orchards of fruit, nut or citrus trees that are plowed or cultivated. In those areas Case 13 clearances shall apply.

(kkk) For communication conductors across or along public thoroughfares see 84.4–A(6).

Note: Revised February 1, 1948 by Supplement No. 1 (Decision No. 41134, Case No. 4324) ; January 2, 1962 by Resolution E–1109 ; February 7, 1964 by Decision No. 66707 ; March 29, 1966 by Decision No. 70489; August 9, 1966 by Decision No. 71094; September 18, 1967 by Decision No. 72984; March 30, 1968 by Decision No. 73813; January 8, 1980 by Decision No. 91186; March 9, 1988 by Resolution E–3076; November 21, 1990 by Resolution SU–6; January 21, 1992 by Resolution SU–10; November 6, 1992 by Resolution SU–15, September 20, 1996 by Decision 96–09–097, October 9, 1996 by Resolution SU–40; January 23, 1997 by Decision 97–01–044 , January 13, 2006 by Decision No. 05-01-030, August 20, 2009 by Decision No. 09-08-029, January 12, 2012 by Decision No. 12-01-032, December 21, 2017 by Decision 17-12-024.

# Appendix B

Air Quality and Greenhouse Gas Model Runs

# ADL-RIN-L1 v2 Detailed Report

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# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | ADL-RIN-L1 v2 |
| Construction Start Date | 1/2/2024 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 4.50 |
| Precipitation (days) | 13.0 |
| Location | 34.51017464307691, -117.99393077978922 |
| County | Los Angeles-Mojave Desert |
| City | Unincorporated |
| Air District | Antelope Valley AQMD |
| Air Basin | Mojave Desert |
| TAZ | 3755 |
| EDFZ | 7 |
| Electric Utility | Southern California Edison |
| Gas Utility | Southern California Gas |
| App Version | 2022.1.1.29 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|
| Other Non-Asphalt Surfaces | 3.74 | Acre | 3.74 | 0.00 | 0.00 | 0.00 | — | — |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

| Sector | # | Measure Title |
|---|---|---|
| Construction | C-10-A | Water Exposed Surfaces |
| Construction | C-10-C | Water Unpaved Construction Roads |
| Construction | C-11 | Limit Vehicle Speeds on Unpaved Roads |

## 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 2.93 | 2.48 | 23.7 | 28.6 | 0.05 | 1.00 | 8.15 | 8.83 | 0.92 | 3.69 | 4.48 | — | 5,853 | 5,853 | 0.20 | 0.22 | 5.51 | 5,927 |
| Mit. | 2.93 | 2.48 | 23.7 | 28.6 | 0.05 | 1.00 | 3.83 | 4.51 | 0.92 | 1.60 | 2.43 | — | 5,853 | 5,853 | 0.20 | 0.22 | 5.51 | 5,927 |
| % Reduced | — | — | — | — | — | — | 53% | 49% | — | 57% | 46% | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 2.49 | 2.09 | 17.1 | 26.8 | 0.05 | 0.68 | 8.15 | 8.83 | 0.62 | 3.69 | 4.31 | — | 5,759 | 5,759 | 0.20 | 0.22 | 0.14 | 5,829 |
| Mit. | 2.49 | 2.09 | 17.1 | 26.8 | 0.05 | 0.68 | 3.83 | 4.51 | 0.62 | 1.60 | 2.22 | — | 5,759 | 5,759 | 0.20 | 0.22 | 0.14 | 5,829 |
| % Reduced | — | — | — | — | — | — | 53% | 49% | — | 57% | 48% | — | — | — | — | — | — | — |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 1.35 | 1.14 | 9.55 | 14.4 | 0.03 | 0.36 | 3.45 | 3.81 | 0.33 | 1.67 | 2.00 | — | 3,140 | 3,140 | 0.11 | 0.12 | 1.25 | 3,178 |
| Mit. | 1.35 | 1.14 | 9.55 | 14.4 | 0.03 | 0.36 | 1.53 | 1.89 | 0.33 | 0.70 | 1.02 | — | 3,140 | 3,140 | 0.11 | 0.12 | 1.25 | 3,178 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % Reduced | — | — | — | — | — | — | 56% | 50% | — | 58% | 49% | — | — | — | — | — | — | — |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.25 | 0.21 | 1.74 | 2.63 | < 0.005 | 0.07 | 0.63 | 0.70 | 0.06 | 0.30 | 0.36 | — | 520 | 520 | 0.02 | 0.02 | 0.21 | 526 |
| Mit. | 0.25 | 0.21 | 1.74 | 2.63 | < 0.005 | 0.07 | 0.28 | 0.34 | 0.06 | 0.13 | 0.19 | — | 520 | 520 | 0.02 | 0.02 | 0.21 | 526 |
| % Reduced | — | — | — | — | — | — | 56% | 50% | — | 58% | 49% | — | — | — | — | — | — | — |

## 2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 2.93 | 2.48 | 23.7 | 27.6 | 0.04 | 1.00 | 7.34 | 8.34 | 0.92 | 3.56 | 4.48 | — | 5,484 | 5,484 | 0.19 | 0.17 | 4.44 | 5,544 |
| 2026 | 2.52 | 2.14 | 17.1 | 28.6 | 0.05 | 0.68 | 8.15 | 8.83 | 0.62 | 3.69 | 4.31 | — | 5,853 | 5,853 | 0.20 | 0.22 | 5.51 | 5,927 |
| 2027 | 1.33 | 1.11 | 10.2 | 14.0 | 0.03 | 0.36 | 0.57 | 0.94 | 0.34 | 0.14 | 0.48 | — | 2,630 | 2,630 | 0.11 | 0.02 | — | 2,639 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 1.60 | 1.35 | 13.3 | 15.3 | 0.03 | 0.54 | 7.50 | 7.80 | 0.50 | 3.53 | 3.89 | — | 3,046 | 3,046 | 0.11 | 0.09 | 0.06 | 3,075 |
| 2026 | 2.49 | 2.09 | 17.1 | 26.8 | 0.05 | 0.68 | 8.15 | 8.83 | 0.62 | 3.69 | 4.31 | — | 5,759 | 5,759 | 0.20 | 0.22 | 0.14 | 5,829 |
| 2027 | 1.33 | 1.11 | 10.2 | 14.0 | 0.03 | 0.36 | 0.57 | 0.94 | 0.34 | 0.14 | 0.48 | — | 2,630 | 2,630 | 0.11 | 0.02 | — | 2,639 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 1.04 | 0.88 | 8.31 | 9.48 | 0.02 | 0.36 | 3.45 | 3.81 | 0.33 | 1.67 | 2.00 | — | 1,943 | 1,943 | 0.07 | 0.07 | 0.75 | 1,965 |
| 2026 | 1.35 | 1.14 | 9.55 | 14.4 | 0.03 | 0.36 | 2.22 | 2.58 | 0.33 | 0.94 | 1.27 | — | 3,140 | 3,140 | 0.11 | 0.12 | 1.25 | 3,178 |
| 2027 | 0.31 | 0.26 | 2.39 | 3.30 | 0.01 | 0.09 | 0.13 | 0.22 | 0.08 | 0.03 | 0.11 | — | 618 | 618 | 0.03 | 0.01 | — | 620 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 0.19 | 0.16 | 1.52 | 1.73 | < 0.005 | 0.07 | 0.63 | 0.70 | 0.06 | 0.30 | 0.36 | — | 322 | 322 | 0.01 | 0.01 | 0.12 | 325 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2026 | 0.25 | 0.21 | 1.74 | 2.63 | < 0.005 | 0.07 | 0.41 | 0.47 | 0.06 | 0.17 | 0.23 | — | 520 | 520 | 0.02 | 0.02 | 0.21 | 526 |
| 2027 | 0.06 | 0.05 | 0.44 | 0.60 | < 0.005 | 0.02 | 0.02 | 0.04 | 0.01 | 0.01 | 0.02 | — | 102 | 102 | < 0.005 | < 0.005 | — | 103 |

## 2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 2.93 | 2.48 | 23.7 | 27.6 | 0.04 | 1.00 | 3.34 | 4.34 | 0.92 | 1.51 | 2.43 | — | 5,484 | 5,484 | 0.19 | 0.17 | 4.44 | 5,544 |
| 2026 | 2.52 | 2.14 | 17.1 | 28.6 | 0.05 | 0.68 | 3.83 | 4.51 | 0.62 | 1.60 | 2.22 | — | 5,853 | 5,853 | 0.20 | 0.22 | 5.51 | 5,927 |
| 2027 | 1.33 | 1.11 | 10.2 | 14.0 | 0.03 | 0.36 | 0.57 | 0.94 | 0.34 | 0.14 | 0.48 | — | 2,630 | 2,630 | 0.11 | 0.02 | — | 2,639 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 1.60 | 1.35 | 13.3 | 15.3 | 0.03 | 0.54 | 3.18 | 3.48 | 0.50 | 1.44 | 1.84 | — | 3,046 | 3,046 | 0.11 | 0.09 | 0.06 | 3,075 |
| 2026 | 2.49 | 2.09 | 17.1 | 26.8 | 0.05 | 0.68 | 3.83 | 4.51 | 0.62 | 1.60 | 2.22 | — | 5,759 | 5,759 | 0.20 | 0.22 | 0.14 | 5,829 |
| 2027 | 1.33 | 1.11 | 10.2 | 14.0 | 0.03 | 0.36 | 0.57 | 0.94 | 0.34 | 0.14 | 0.48 | — | 2,630 | 2,630 | 0.11 | 0.02 | — | 2,639 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 1.04 | 0.88 | 8.31 | 9.48 | 0.02 | 0.36 | 1.53 | 1.89 | 0.33 | 0.70 | 1.02 | — | 1,943 | 1,943 | 0.07 | 0.07 | 0.75 | 1,965 |
| 2026 | 1.35 | 1.14 | 9.55 | 14.4 | 0.03 | 0.36 | 1.21 | 1.56 | 0.33 | 0.45 | 0.78 | — | 3,140 | 3,140 | 0.11 | 0.12 | 1.25 | 3,178 |
| 2027 | 0.31 | 0.26 | 2.39 | 3.30 | 0.01 | 0.09 | 0.13 | 0.22 | 0.08 | 0.03 | 0.11 | — | 618 | 618 | 0.03 | 0.01 | — | 620 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2025 | 0.19 | 0.16 | 1.52 | 1.73 | < 0.005 | 0.07 | 0.28 | 0.34 | 0.06 | 0.13 | 0.19 | — | 322 | 322 | 0.01 | 0.01 | 0.12 | 325 |
| 2026 | 0.25 | 0.21 | 1.74 | 2.63 | < 0.005 | 0.07 | 0.22 | 0.29 | 0.06 | 0.08 | 0.14 | — | 520 | 520 | 0.02 | 0.02 | 0.21 | 526 |
| 2027 | 0.06 | 0.05 | 0.44 | 0.60 | < 0.005 | 0.02 | 0.02 | 0.04 | 0.01 | 0.01 | 0.02 | — | 102 | 102 | < 0.005 | < 0.005 | — | 103 |

# 3. Construction Emissions Details

## 3.1. PC&M - Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.16 | 0.97 | 9.87 | 9.11 | 0.02 | 0.45 | — | 0.45 | 0.42 | — | 0.42 | — | 1,674 | 1,674 | 0.07 | 0.01 | — | 1,680 |
| Dust From Material Movement | — | — | — | — | — | — | 6.55 | 6.55 | — | 3.37 | 3.37 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.16 | 0.97 | 9.87 | 9.11 | 0.02 | 0.45 | — | 0.45 | 0.42 | — | 0.42 | — | 1,674 | 1,674 | 0.07 | 0.01 | — | 1,680 |
| Dust From Material Movement | — | — | — | — | — | — | 6.55 | 6.55 | — | 3.37 | 3.37 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.41 | 0.34 | 3.49 | 3.22 | 0.01 | 0.16 | — | 0.16 | 0.15 | — | 0.15 | — | 592 | 592 | 0.02 | < 0.005 | — | 594 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 2.32 | 2.32 | — | 1.19 | 1.19 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.07 | 0.06 | 0.64 | 0.59 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 98.0 | 98.0 | < 0.005 | < 0.005 | — | 98.3 |
| Dust From Material Movement | — | — | — | — | — | — | 0.42 | 0.42 | — | 0.22 | 0.22 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.15 | 0.14 | 0.14 | 2.38 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.07 | 0.07 | — | 347 | 347 | 0.01 | 0.01 | 1.40 | 352 |
| Vendor | < 0.005 | < 0.005 | 0.12 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 120 | 120 | < 0.005 | 0.02 | 0.35 | 125 |
| Hauling | 0.01 | 0.01 | 0.26 | 0.06 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 265 | 265 | < 0.005 | 0.04 | 0.59 | 278 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.14 | 0.12 | 0.15 | 1.61 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.07 | 0.07 | — | 308 | 308 | 0.02 | 0.01 | 0.04 | 312 |
| Vendor | < 0.005 | < 0.005 | 0.13 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 120 | 120 | < 0.005 | 0.02 | 0.01 | 125 |
| Hauling | 0.01 | < 0.005 | 0.28 | 0.07 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 265 | 265 | < 0.005 | 0.04 | 0.02 | 277 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05 | 0.04 | 0.06 | 0.64 | 0.00 | 0.00 | 0.11 | 0.11 | 0.00 | 0.03 | 0.03 | — | 112 | 112 | 0.01 | < 0.005 | 0.21 | 114 |
| Vendor | < 0.005 | < 0.005 | 0.05 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 42.4 | 42.4 | < 0.005 | 0.01 | 0.05 | 44.3 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | < 0.005 | < 0.005 | 0.10 | 0.02 | < 0.005 | < 0.005 | 0.03 | 0.03 | < 0.005 | 0.01 | 0.01 | — | 93.5 | 93.5 | < 0.005 | 0.01 | 0.09 | 98.0 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.12 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 18.6 | 18.6 | < 0.005 | < 0.005 | 0.04 | 18.8 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 7.02 | 7.02 | < 0.005 | < 0.005 | 0.01 | 7.33 |
| Hauling | < 0.005 | < 0.005 | 0.02 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 15.5 | 15.5 | < 0.005 | < 0.005 | 0.01 | 16.2 |

## 3.2. PC&M - Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.16 | 0.97 | 9.87 | 9.11 | 0.02 | 0.45 | — | 0.45 | 0.42 | — | 0.42 | — | 1,674 | 1,674 | 0.07 | 0.01 | — | 1,680 |
| Dust From Material Movement | — | — | — | — | — | — | 2.56 | 2.56 | — | 1.31 | 1.31 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.16 | 0.97 | 9.87 | 9.11 | 0.02 | 0.45 | — | 0.45 | 0.42 | — | 0.42 | — | 1,674 | 1,674 | 0.07 | 0.01 | — | 1,680 |
| Dust From Material Movement | — | — | — | — | — | — | 2.56 | 2.56 | — | 1.31 | 1.31 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.41 | 0.34 | 3.49 | 3.22 | 0.01 | 0.16 | — | 0.16 | 0.15 | — | 0.15 | — | 592 | 592 | 0.02 | < 0.005 | — | 594 |
| Dust From Material Movement | — | — | — | — | — | — | 0.90 | 0.90 | — | 0.46 | 0.46 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.07 | 0.06 | 0.64 | 0.59 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 98.0 | 98.0 | < 0.005 | < 0.005 | — | 98.3 |
| Dust From Material Movement | — | — | — | — | — | — | 0.16 | 0.16 | — | 0.08 | 0.08 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.15 | 0.14 | 0.14 | 2.38 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.07 | 0.07 | — | 347 | 347 | 0.01 | 0.01 | 1.40 | 352 |
| Vendor | < 0.005 | < 0.005 | 0.12 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 120 | 120 | < 0.005 | 0.02 | 0.35 | 125 |
| Hauling | 0.01 | 0.01 | 0.26 | 0.06 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 265 | 265 | < 0.005 | 0.04 | 0.59 | 278 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.14 | 0.12 | 0.15 | 1.61 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.07 | 0.07 | — | 308 | 308 | 0.02 | 0.01 | 0.04 | 312 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | < 0.005 | < 0.005 | 0.13 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 120 | 120 | < 0.005 | 0.02 | 0.01 | 125 |
| Hauling | 0.01 | < 0.005 | 0.28 | 0.07 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 265 | 265 | < 0.005 | 0.04 | 0.02 | 277 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05 | 0.04 | 0.06 | 0.64 | 0.00 | 0.00 | 0.11 | 0.11 | 0.00 | 0.03 | 0.03 | — | 112 | 112 | 0.01 | < 0.005 | 0.21 | 114 |
| Vendor | < 0.005 | < 0.005 | 0.05 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 42.4 | 42.4 | < 0.005 | 0.01 | 0.05 | 44.3 |
| Hauling | < 0.005 | < 0.005 | 0.10 | 0.02 | < 0.005 | < 0.005 | 0.03 | 0.03 | < 0.005 | 0.01 | 0.01 | — | 93.5 | 93.5 | < 0.005 | 0.01 | 0.09 | 98.0 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.12 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 18.6 | 18.6 | < 0.005 | < 0.005 | 0.04 | 18.8 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 7.02 | 7.02 | < 0.005 | < 0.005 | 0.01 | 7.33 |
| Hauling | < 0.005 | < 0.005 | 0.02 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 15.5 | 15.5 | < 0.005 | < 0.005 | 0.01 | 16.2 |

## 3.3. TC&M - Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.82 | 0.69 | 5.69 | 8.69 | 0.01 | 0.29 | — | 0.29 | 0.27 | — | 0.27 | — | 1,360 | 1,360 | 0.06 | 0.01 | — | 1,365 |
| Dust From Material Movement | — | — | — | — | — | — | 7.08 | 7.08 | — | 3.42 | 3.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.08 | 0.67 | 1.02 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 160 | 160 | 0.01 | < 0.005 | — | 160 |
| Dust From Material Movement | — | — | — | — | — | — | 0.83 | 0.83 | — | 0.40 | 0.40 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.01 | 0.12 | 0.19 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 26.4 | 26.4 | < 0.005 | < 0.005 | — | 26.5 |
| Dust From Material Movement | — | — | — | — | — | — | 0.15 | 0.15 | — | 0.07 | 0.07 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.14 | 0.12 | 0.15 | 1.61 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.07 | 0.07 | — | 308 | 308 | 0.02 | 0.01 | 0.04 | 312 |
| Vendor | < 0.005 | < 0.005 | 0.13 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 120 | 120 | < 0.005 | 0.02 | 0.01 | 125 |
| Hauling | 0.01 | < 0.005 | 0.28 | 0.07 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 265 | 265 | < 0.005 | 0.04 | 0.02 | 277 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.01 | 0.02 | 0.21 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.01 | 0.01 | — | 37.3 | 37.3 | < 0.005 | < 0.005 | 0.07 | 37.8 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 14.1 | 14.1 | < 0.005 | < 0.005 | 0.02 | 14.7 |
| Hauling | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 31.1 | 31.1 | < 0.005 | < 0.005 | 0.03 | 32.6 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 6.17 | 6.17 | < 0.005 | < 0.005 | 0.01 | 6.26 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.33 | 2.33 | < 0.005 | < 0.005 | < 0.005 | 2.43 |
| Hauling | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 5.14 | 5.14 | < 0.005 | < 0.005 | < 0.005 | 5.39 |

## 3.4. TC&M - Grading (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.82 | 0.69 | 5.69 | 8.69 | 0.01 | 0.29 | — | 0.29 | 0.27 | — | 0.27 | — | 1,360 | 1,360 | 0.06 | 0.01 | — | 1,365 |
| Dust From Material Movement | — | — | — | — | — | — | 2.76 | 2.76 | — | 1.34 | 1.34 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.10 | 0.08 | 0.67 | 1.02 | < 0.005 | 0.03 | — | 0.03 | 0.03 | — | 0.03 | — | 160 | 160 | 0.01 | < 0.005 | — | 160 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 0.32 | 0.32 | — | 0.16 | 0.16 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.01 | 0.12 | 0.19 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 26.4 | 26.4 | < 0.005 | < 0.005 | — | 26.5 |
| Dust From Material Movement | — | — | — | — | — | — | 0.06 | 0.06 | — | 0.03 | 0.03 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.14 | 0.12 | 0.15 | 1.61 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.07 | 0.07 | — | 308 | 308 | 0.02 | 0.01 | 0.04 | 312 |
| Vendor | < 0.005 | < 0.005 | 0.13 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 120 | 120 | < 0.005 | 0.02 | 0.01 | 125 |
| Hauling | 0.01 | < 0.005 | 0.28 | 0.07 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 265 | 265 | < 0.005 | 0.04 | 0.02 | 277 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.01 | 0.02 | 0.21 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.01 | 0.01 | — | 37.3 | 37.3 | < 0.005 | < 0.005 | 0.07 | 37.8 |
| Vendor | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 14.1 | 14.1 | < 0.005 | < 0.005 | 0.02 | 14.7 |
| Hauling | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 31.1 | 31.1 | < 0.005 | < 0.005 | 0.03 | 32.6 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 6.17 | 6.17 | < 0.005 | < 0.005 | 0.01 | 6.26 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.33 | 2.33 | < 0.005 | < 0.005 | < 0.005 | 2.43 |
| Hauling | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 5.14 | 5.14 | < 0.005 | < 0.005 | < 0.005 | 5.39 |

## 3.5. TC&M - Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.76 | 0.64 | 5.07 | 8.68 | 0.01 | 0.25 | — | 0.25 | 0.23 | — | 0.23 | — | 1,360 | 1,360 | 0.06 | 0.01 | — | 1,364 |
| Dust From Material Movement | — | — | — | — | — | — | 7.08 | 7.08 | — | 3.42 | 3.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.76 | 0.64 | 5.07 | 8.68 | 0.01 | 0.25 | — | 0.25 | 0.23 | — | 0.23 | — | 1,360 | 1,360 | 0.06 | 0.01 | — | 1,364 |
| Dust From Material Movement | — | — | — | — | — | — | 7.08 | 7.08 | — | 3.42 | 3.42 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Roa Equipment | 0.18 | 0.15 | 1.19 | 2.04 | < 0.005 | 0.06 | — | 0.06 | 0.05 | — | 0.05 | — | 319 | 319 | 0.01 | < 0.005 | — | 320 |
| Dust From Material Movement | — | — | — | — | — | — | 1.66 | 1.66 | — | 0.80 | 0.80 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Roa d Equipm ent | 0.03 | 0.03 | 0.22 | 0.37 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 52.9 | 52.9 | < 0.005 | < 0.005 | — | 53.0 |
| Dust From Material Movement | — | — | — | — | — | — | 0.30 | 0.30 | — | 0.15 | 0.15 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.14 | 0.13 | 0.13 | 2.23 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.07 | 0.07 | — | 340 | 340 | 0.01 | 0.01 | 1.29 | 345 |
| Vendor | < 0.005 | < 0.005 | 0.12 | 0.04 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 118 | 118 | < 0.005 | 0.02 | 0.30 | 123 |
| Hauling | 0.01 | 0.01 | 0.26 | 0.06 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 259 | 259 | < 0.005 | 0.04 | 0.55 | 271 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.13 | 0.11 | 0.14 | 1.51 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.07 | 0.07 | — | 302 | 302 | 0.02 | 0.01 | 0.03 | 306 |
| Vendor | < 0.005 | < 0.005 | 0.12 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 118 | 118 | < 0.005 | 0.02 | 0.01 | 123 |
| Hauling | 0.01 | < 0.005 | 0.27 | 0.06 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 259 | 259 | < 0.005 | 0.04 | 0.01 | 271 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.03 | 0.40 | 0.00 | 0.00 | 0.07 | 0.07 | 0.00 | 0.02 | 0.02 | — | 73.1 | 73.1 | < 0.005 | < 0.005 | 0.13 | 74.1 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 27.7 | 27.7 | < 0.005 | < 0.005 | 0.03 | 28.9 |
| Hauling | < 0.005 | < 0.005 | 0.06 | 0.01 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 60.8 | 60.8 | < 0.005 | 0.01 | 0.06 | 63.7 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.07 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 12.1 | 12.1 | < 0.005 | < 0.005 | 0.02 | 12.3 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 4.58 | 4.58 | < 0.005 | < 0.005 | 0.01 | 4.78 |
| Hauling | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 10.1 | 10.1 | < 0.005 | < 0.005 | 0.01 | 10.5 |

## 3.6. TC&M - Grading (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.76 | 0.64 | 5.07 | 8.68 | 0.01 | 0.25 | — | 0.25 | 0.23 | — | 0.23 | — | 1,360 | 1,360 | 0.06 | 0.01 | — | 1,364 |
| Dust From Material Movement | — | — | — | — | — | — | 2.76 | 2.76 | — | 1.34 | 1.34 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.76 | 0.64 | 5.07 | 8.68 | 0.01 | 0.25 | — | 0.25 | 0.23 | — | 0.23 | — | 1,360 | 1,360 | 0.06 | 0.01 | — | 1,364 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movement | — | — | — | — | — | — | 2.76 | 2.76 | — | 1.34 | 1.34 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.18 | 0.15 | 1.19 | 2.04 | < 0.005 | 0.06 | — | 0.06 | 0.05 | — | 0.05 | — | 319 | 319 | 0.01 | < 0.005 | — | 320 |
| Dust From Material Movement | — | — | — | — | — | — | 0.65 | 0.65 | — | 0.31 | 0.31 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.03 | 0.22 | 0.37 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 52.9 | 52.9 | < 0.005 | < 0.005 | — | 53.0 |
| Dust From Material Movement | — | — | — | — | — | — | 0.12 | 0.12 | — | 0.06 | 0.06 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.14 | 0.13 | 0.13 | 2.23 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.07 | 0.07 | — | 340 | 340 | 0.01 | 0.01 | 1.29 | 345 |
| Vendor | < 0.005 | < 0.005 | 0.12 | 0.04 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 118 | 118 | < 0.005 | 0.02 | 0.30 | 123 |
| Hauling | 0.01 | 0.01 | 0.26 | 0.06 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 259 | 259 | < 0.005 | 0.04 | 0.55 | 271 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.13 | 0.11 | 0.14 | 1.51 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.07 | 0.07 | — | 302 | 302 | 0.02 | 0.01 | 0.03 | 306 |
| Vendor | < 0.005 | < 0.005 | 0.12 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 118 | 118 | < 0.005 | 0.02 | 0.01 | 123 |
| Hauling | 0.01 | < 0.005 | 0.27 | 0.06 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 259 | 259 | < 0.005 | 0.04 | 0.01 | 271 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.03 | 0.40 | 0.00 | 0.00 | 0.07 | 0.07 | 0.00 | 0.02 | 0.02 | — | 73.1 | 73.1 | < 0.005 | < 0.005 | 0.13 | 74.1 |
| Vendor | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 27.7 | 27.7 | < 0.005 | < 0.005 | 0.03 | 28.9 |
| Hauling | < 0.005 | < 0.005 | 0.06 | 0.01 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 60.8 | 60.8 | < 0.005 | 0.01 | 0.06 | 63.7 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.07 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 12.1 | 12.1 | < 0.005 | < 0.005 | 0.02 | 12.3 |
| Vendor | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 4.58 | 4.58 | < 0.005 | < 0.005 | 0.01 | 4.78 |
| Hauling | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 10.1 | 10.1 | < 0.005 | < 0.005 | 0.01 | 10.5 |

## 3.7. Ampjack - Tower Raising (2026) - Unmitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.38 | 1.16 | 10.7 | 14.1 | 0.03 | 0.41 | — | 0.41 | 0.38 | — | 0.38 | — | 2,630 | 2,630 | 0.11 | 0.02 | — | 2,639 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Roa Equipment | 1.38 | 1.16 | 10.7 | 14.1 | 0.03 | 0.41 | — | 0.41 | 0.38 | — | 0.38 | — | 2,630 | 2,630 | 0.11 | 0.02 | — | 2,639 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Roa d Equipm ent | 0.98 | 0.82 | 7.60 | 10.0 | 0.02 | 0.29 | — | 0.29 | 0.27 | — | 0.27 | — | 1,873 | 1,873 | 0.08 | 0.02 | — | 1,880 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Roa d Equipm ent | 0.18 | 0.15 | 1.39 | 1.83 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 310 | 310 | 0.01 | < 0.005 | — | 311 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.22 | 0.20 | 0.19 | 3.35 | 0.00 | 0.00 | 0.47 | 0.47 | 0.00 | 0.11 | 0.11 | — | 510 | 510 | 0.02 | 0.02 | 1.94 | 518 |
| Vendor | < 0.005 | < 0.005 | 0.12 | 0.04 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 118 | 118 | < 0.005 | 0.02 | 0.30 | 123 |
| Hauling | 0.01 | 0.01 | 0.52 | 0.13 | < 0.005 | 0.01 | 0.14 | 0.15 | 0.01 | 0.04 | 0.05 | — | 518 | 518 | < 0.005 | 0.08 | 1.11 | 543 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.20 | 0.16 | 0.21 | 2.26 | 0.00 | 0.00 | 0.47 | 0.47 | 0.00 | 0.11 | 0.11 | — | 454 | 454 | 0.02 | 0.02 | 0.05 | 460 |
| Vendor | < 0.005 | < 0.005 | 0.12 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 118 | 118 | < 0.005 | 0.02 | 0.01 | 123 |
| Hauling | 0.01 | 0.01 | 0.54 | 0.13 | < 0.005 | 0.01 | 0.14 | 0.15 | 0.01 | 0.04 | 0.05 | — | 518 | 518 | < 0.005 | 0.08 | 0.03 | 542 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.14 | 0.13 | 0.16 | 1.81 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.08 | 0.08 | — | 332 | 332 | 0.02 | 0.01 | 0.60 | 337 |
| Vendor | < 0.005 | < 0.005 | 0.09 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.03 | < 0.005 | 0.01 | 0.01 | — | 83.9 | 83.9 | < 0.005 | 0.01 | 0.09 | 87.6 |
| Hauling | 0.01 | 0.01 | 0.39 | 0.09 | < 0.005 | 0.01 | 0.10 | 0.11 | 0.01 | 0.03 | 0.03 | — | 369 | 369 | < 0.005 | 0.06 | 0.34 | 386 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.02 | 0.03 | 0.33 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 55.0 | 55.0 | < 0.005 | < 0.005 | 0.10 | 55.8 |
| Vendor | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 13.9 | 13.9 | < 0.005 | < 0.005 | 0.02 | 14.5 |
| Hauling | < 0.005 | < 0.005 | 0.07 | 0.02 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | 0.01 | 0.01 | — | 61.1 | 61.1 | < 0.005 | 0.01 | 0.06 | 64.0 |

## 3.8. Ampjack - Tower Raising (2026) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.38 | 1.16 | 10.7 | 14.1 | 0.03 | 0.41 | — | 0.41 | 0.38 | — | 0.38 | — | 2,630 | 2,630 | 0.11 | 0.02 | — | 2,639 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.38 | 1.16 | 10.7 | 14.1 | 0.03 | 0.41 | — | 0.41 | 0.38 | — | 0.38 | — | 2,630 | 2,630 | 0.11 | 0.02 | — | 2,639 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.98 | 0.82 | 7.60 | 10.0 | 0.02 | 0.29 | — | 0.29 | 0.27 | — | 0.27 | — | 1,873 | 1,873 | 0.08 | 0.02 | — | 1,880 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.18 | 0.15 | 1.39 | 1.83 | < 0.005 | 0.05 | — | 0.05 | 0.05 | — | 0.05 | — | 310 | 310 | 0.01 | < 0.005 | — | 311 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.22 | 0.20 | 0.19 | 3.35 | 0.00 | 0.00 | 0.47 | 0.47 | 0.00 | 0.11 | 0.11 | — | 510 | 510 | 0.02 | 0.02 | 1.94 | 518 |
| Vendor | < 0.005 | < 0.005 | 0.12 | 0.04 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 118 | 118 | < 0.005 | 0.02 | 0.30 | 123 |
| Hauling | 0.01 | 0.01 | 0.52 | 0.13 | < 0.005 | 0.01 | 0.14 | 0.15 | 0.01 | 0.04 | 0.05 | — | 518 | 518 | < 0.005 | 0.08 | 1.11 | 543 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.20 | 0.16 | 0.21 | 2.26 | 0.00 | 0.00 | 0.47 | 0.47 | 0.00 | 0.11 | 0.11 | — | 454 | 454 | 0.02 | 0.02 | 0.05 | 460 |
| Vendor | < 0.005 | < 0.005 | 0.12 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 118 | 118 | < 0.005 | 0.02 | 0.01 | 123 |
| Hauling | 0.01 | 0.01 | 0.54 | 0.13 | < 0.005 | 0.01 | 0.14 | 0.15 | 0.01 | 0.04 | 0.05 | — | 518 | 518 | < 0.005 | 0.08 | 0.03 | 542 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.14 | 0.13 | 0.16 | 1.81 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.08 | 0.08 | — | 332 | 332 | 0.02 | 0.01 | 0.60 | 337 |
| Vendor | < 0.005 | < 0.005 | 0.09 | 0.03 | < 0.005 | < 0.005 | 0.02 | 0.03 | < 0.005 | 0.01 | 0.01 | — | 83.9 | 83.9 | < 0.005 | 0.01 | 0.09 | 87.6 |
| Hauling | 0.01 | 0.01 | 0.39 | 0.09 | < 0.005 | 0.01 | 0.10 | 0.11 | 0.01 | 0.03 | 0.03 | — | 369 | 369 | < 0.005 | 0.06 | 0.34 | 386 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.02 | 0.03 | 0.33 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 55.0 | 55.0 | < 0.005 | < 0.005 | 0.10 | 55.8 |
| Vendor | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 13.9 | 13.9 | < 0.005 | < 0.005 | 0.02 | 14.5 |

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| Hauling | < 0.005 | < 0.005 | 0.07 | 0.02 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | 0.01 | 0.01 | — | 61.1 | 61.1 | < 0.005 | 0.01 | 0.06 | 64.0 |

## 3.9. Ampjack - Tower Raising (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.33 | 1.11 | 10.2 | 14.0 | 0.03 | 0.36 | — | 0.36 | 0.34 | — | 0.34 | — | 2,630 | 2,630 | 0.11 | 0.02 | — | 2,639 |
| Onsite truck | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.33 | 1.11 | 10.2 | 14.0 | 0.03 | 0.36 | — | 0.36 | 0.34 | — | 0.34 | — | 2,630 | 2,630 | 0.11 | 0.02 | — | 2,639 |
| Onsite truck | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.31 | 0.26 | 2.39 | 3.30 | 0.01 | 0.09 | — | 0.09 | 0.08 | — | 0.08 | — | 618 | 618 | 0.03 | 0.01 | — | 620 |
| Onsite truck | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipm | 0.06 | 0.05 | 0.44 | 0.60 | < 0.005 | 0.02 | — | 0.02 | 0.01 | — | 0.01 | — | 102 | 102 | < 0.005 | < 0.005 | — | 103 |
| Onsite truck | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | — | — | — | — | — | — | 0.44 | 0.44 | — | 0.11 | 0.11 | — | — | — | — | — | — | — |
| Vendor | — | — | — | — | — | — | 0.03 | 0.03 | — | 0.01 | 0.01 | — | — | — | — | — | — | — |
| Hauling | — | — | — | — | — | — | 0.11 | 0.11 | — | 0.03 | 0.03 | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | — | — | — | — | — | — | 0.44 | 0.44 | — | 0.11 | 0.11 | — | — | — | — | — | — | — |
| Vendor | — | — | — | — | — | — | 0.03 | 0.03 | — | 0.01 | 0.01 | — | — | — | — | — | — | — |
| Hauling | — | — | — | — | — | — | 0.11 | 0.11 | — | 0.03 | 0.03 | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | — | — | — | — | — | — | 0.10 | 0.10 | — | 0.03 | 0.03 | — | — | — | — | — | — | — |
| Vendor | — | — | — | — | — | — | 0.01 | 0.01 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Hauling | — | — | — | — | — | — | 0.02 | 0.02 | — | 0.01 | 0.01 | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | — | — | — | — | — | — | 0.02 | 0.02 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Vendor | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Hauling | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |

## 3.10. Ampjack - Tower Raising (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.33 | 1.11 | 10.2 | 14.0 | 0.03 | 0.36 | — | 0.36 | 0.34 | — | 0.34 | — | 2,630 | 2,630 | 0.11 | 0.02 | — | 2,639 |
| Onsite truck | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.33 | 1.11 | 10.2 | 14.0 | 0.03 | 0.36 | — | 0.36 | 0.34 | — | 0.34 | — | 2,630 | 2,630 | 0.11 | 0.02 | — | 2,639 |
| Onsite truck | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.31 | 0.26 | 2.39 | 3.30 | 0.01 | 0.09 | — | 0.09 | 0.08 | — | 0.08 | — | 618 | 618 | 0.03 | 0.01 | — | 620 |
| Onsite truck | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.06 | 0.05 | 0.44 | 0.60 | < 0.005 | 0.02 | — | 0.02 | 0.01 | — | 0.01 | — | 102 | 102 | < 0.005 | < 0.005 | — | 103 |
| Onsite truck | — | — | — | — | — | — | 0.00 | 0.00 | — | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | — | — | — | — | — | — | 0.44 | 0.44 | — | 0.11 | 0.11 | — | — | — | — | — | — | — |
| Vendor | — | — | — | — | — | — | 0.03 | 0.03 | — | 0.01 | 0.01 | — | — | — | — | — | — | — |
| Hauling | — | — | — | — | — | — | 0.11 | 0.11 | — | 0.03 | 0.03 | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | — | — | — | — | — | — | 0.44 | 0.44 | — | 0.11 | 0.11 | — | — | — | — | — | — | — |
| Vendor | — | — | — | — | — | — | 0.03 | 0.03 | — | 0.01 | 0.01 | — | — | — | — | — | — | — |
| Hauling | — | — | — | — | — | — | 0.11 | 0.11 | — | 0.03 | 0.03 | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | — | — | — | — | — | — | 0.10 | 0.10 | — | 0.03 | 0.03 | — | — | — | — | — | — | — |
| Vendor | — | — | — | — | — | — | 0.01 | 0.01 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Hauling | — | — | — | — | — | — | 0.02 | 0.02 | — | 0.01 | 0.01 | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | — | — | — | — | — | — | 0.02 | 0.02 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Vendor | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Hauling | — | — | — | — | — | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |

## 3.11. PC&M Temp Access Road (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.33 | 1.11 | 12.0 | 11.4 | 0.02 | 0.52 | — | 0.52 | 0.48 | — | 0.48 | — | 1,962 | 1,962 | 0.08 | 0.02 | — | 1,969 |
| Paving | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.15 | 0.13 | 1.38 | 1.31 | < 0.005 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 226 | 226 | 0.01 | < 0.005 | — | 227 |
| Paving | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.02 | 0.25 | 0.24 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 37.4 | 37.4 | < 0.005 | < 0.005 | — | 37.5 |
| Paving | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.11 | 0.10 | 0.12 | 1.34 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 257 | 257 | 0.01 | 0.01 | 0.03 | 260 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | < 0.005 | < 0.005 | 0.13 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 120 | 120 | < 0.005 | 0.02 | 0.01 | 125 |
| Hauling | 0.01 | < 0.005 | 0.28 | 0.07 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 265 | 265 | < 0.005 | 0.04 | 0.02 | 277 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.02 | 0.17 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 30.4 | 30.4 | < 0.005 | < 0.005 | 0.06 | 30.9 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 13.8 | 13.8 | < 0.005 | < 0.005 | 0.02 | 14.4 |
| Hauling | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 30.4 | 30.4 | < 0.005 | < 0.005 | 0.03 | 31.9 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 5.04 | 5.04 | < 0.005 | < 0.005 | 0.01 | 5.11 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.29 | 2.29 | < 0.005 | < 0.005 | < 0.005 | 2.39 |
| Hauling | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 5.04 | 5.04 | < 0.005 | < 0.005 | < 0.005 | 5.28 |

## 3.12. PC&M Temp Access Road (2025) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.33 | 1.11 | 12.0 | 11.4 | 0.02 | 0.52 | — | 0.52 | 0.48 | — | 0.48 | — | 1,962 | 1,962 | 0.08 | 0.02 | — | 1,969 |
| Paving | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road | 0.15 | 0.13 | 1.38 | 1.31 | < 0.005 | 0.06 | — | 0.06 | 0.06 | — | 0.06 | — | 226 | 226 | 0.01 | < 0.005 | — | 227 |
| Paving | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.03 | 0.02 | 0.25 | 0.24 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 37.4 | 37.4 | < 0.005 | < 0.005 | — | 37.5 |
| Paving | 0.00 | 0.00 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.11 | 0.10 | 0.12 | 1.34 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 257 | 257 | 0.01 | 0.01 | 0.03 | 260 |
| Vendor | < 0.005 | < 0.005 | 0.13 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 120 | 120 | < 0.005 | 0.02 | 0.01 | 125 |
| Hauling | 0.01 | < 0.005 | 0.28 | 0.07 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 265 | 265 | < 0.005 | 0.04 | 0.02 | 277 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.02 | 0.17 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 30.4 | 30.4 | < 0.005 | < 0.005 | 0.06 | 30.9 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 13.8 | 13.8 | < 0.005 | < 0.005 | 0.02 | 14.4 |
| Hauling | < 0.005 | < 0.005 | 0.03 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 30.4 | 30.4 | < 0.005 | < 0.005 | 0.03 | 31.9 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 5.04 | 5.04 | < 0.005 | < 0.005 | 0.01 | 5.11 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.29 | 2.29 | < 0.005 | < 0.005 | < 0.005 | 2.39 |
| Hauling | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 5.04 | 5.04 | < 0.005 | < 0.005 | < 0.005 | 5.28 |

## 3.13. PC&M Access Road (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.47 | 1.24 | 12.8 | 13.9 | 0.02 | 0.53 | — | 0.53 | 0.49 | — | 0.49 | — | 2,404 | 2,404 | 0.10 | 0.02 | — | 2,413 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.47 | 1.24 | 12.8 | 13.9 | 0.02 | 0.53 | — | 0.53 | 0.49 | — | 0.49 | — | 2,404 | 2,404 | 0.10 | 0.02 | — | 2,413 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.27 | 0.23 | 2.35 | 2.54 | < 0.005 | 0.10 | — | 0.10 | 0.09 | — | 0.09 | — | 441 | 441 | 0.02 | < 0.005 | — | 443 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.05 | 0.04 | 0.43 | 0.46 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 73.1 | 73.1 | < 0.005 | < 0.005 | — | 73.3 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.12 | 0.11 | 0.11 | 1.98 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 289 | 289 | 0.01 | 0.01 | 1.17 | 294 |
| Vendor | < 0.005 | < 0.005 | 0.12 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 120 | 120 | < 0.005 | 0.02 | 0.35 | 125 |
| Hauling | 0.01 | 0.01 | 0.26 | 0.06 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 265 | 265 | < 0.005 | 0.04 | 0.59 | 278 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.11 | 0.10 | 0.12 | 1.34 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 257 | 257 | 0.01 | 0.01 | 0.03 | 260 |
| Vendor | < 0.005 | < 0.005 | 0.13 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 120 | 120 | < 0.005 | 0.02 | 0.01 | 125 |
| Hauling | 0.01 | < 0.005 | 0.28 | 0.07 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 265 | 265 | < 0.005 | 0.04 | 0.02 | 277 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.28 | 0.00 | 0.00 | 0.05 | 0.05 | 0.00 | 0.01 | 0.01 | — | 48.5 | 48.5 | < 0.005 | < 0.005 | 0.09 | 49.2 |
| Vendor | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 22.0 | 22.0 | < 0.005 | < 0.005 | 0.03 | 23.0 |
| Hauling | < 0.005 | < 0.005 | 0.05 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 48.6 | 48.6 | < 0.005 | 0.01 | 0.05 | 50.9 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 8.04 | 8.04 | < 0.005 | < 0.005 | 0.02 | 8.15 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.65 | 3.65 | < 0.005 | < 0.005 | < 0.005 | 3.81 |
| Hauling | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 8.04 | 8.04 | < 0.005 | < 0.005 | 0.01 | 8.43 |

## 3.14. PC&M Access Road (2025) - Mitigated

### Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.47 | 1.24 | 12.8 | 13.9 | 0.02 | 0.53 | — | 0.53 | 0.49 | — | 0.49 | — | 2,404 | 2,404 | 0.10 | 0.02 | — | 2,413 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.47 | 1.24 | 12.8 | 13.9 | 0.02 | 0.53 | — | 0.53 | 0.49 | — | 0.49 | — | 2,404 | 2,404 | 0.10 | 0.02 | — | 2,413 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.27 | 0.23 | 2.35 | 2.54 | < 0.005 | 0.10 | — | 0.10 | 0.09 | — | 0.09 | — | 441 | 441 | 0.02 | < 0.005 | — | 443 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.05 | 0.04 | 0.43 | 0.46 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 73.1 | 73.1 | < 0.005 | < 0.005 | — | 73.3 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Worker | 0.12 | 0.11 | 0.11 | 1.98 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 289 | 289 | 0.01 | 0.01 | 1.17 | 294 |
| Vendor | < 0.005 | < 0.005 | 0.12 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 120 | 120 | < 0.005 | 0.02 | 0.35 | 125 |
| Hauling | 0.01 | 0.01 | 0.26 | 0.06 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 265 | 265 | < 0.005 | 0.04 | 0.59 | 278 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.11 | 0.10 | 0.12 | 1.34 | 0.00 | 0.00 | 0.26 | 0.26 | 0.00 | 0.06 | 0.06 | — | 257 | 257 | 0.01 | 0.01 | 0.03 | 260 |
| Vendor | < 0.005 | < 0.005 | 0.13 | 0.05 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 120 | 120 | < 0.005 | 0.02 | 0.01 | 125 |
| Hauling | 0.01 | < 0.005 | 0.28 | 0.07 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 265 | 265 | < 0.005 | 0.04 | 0.02 | 277 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.28 | 0.00 | 0.00 | 0.05 | 0.05 | 0.00 | 0.01 | 0.01 | — | 48.5 | 48.5 | < 0.005 | < 0.005 | 0.09 | 49.2 |
| Vendor | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 22.0 | 22.0 | < 0.005 | < 0.005 | 0.03 | 23.0 |
| Hauling | < 0.005 | < 0.005 | 0.05 | 0.01 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 48.6 | 48.6 | < 0.005 | 0.01 | 0.05 | 50.9 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.05 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 8.04 | 8.04 | < 0.005 | < 0.005 | 0.02 | 8.15 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.65 | 3.65 | < 0.005 | < 0.005 | < 0.005 | 3.81 |
| Hauling | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 8.04 | 8.04 | < 0.005 | < 0.005 | 0.01 | 8.43 |

# 4. Operations Emissions Details

## 4.10. Soil Carbon Accumulation By Vegetation Type

### 4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

## 4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| PC&M - Grading | Grading | 5/4/2025 | 10/30/2025 | 5.00 | 129 | — |
| TC&M - Grading | Grading | 11/2/2025 | 4/30/2026 | 5.00 | 129 | — |
| Ampjack - Tower Raising | Building Construction | 1/2/2026 | 4/30/2027 | 5.00 | 346 | — |
| PC&M Temp Access Road | Paving | 1/2/2025 | 3/1/2025 | 5.00 | 42.0 | — |
| PC&M Access Road | Paving | 3/2/2025 | 6/3/2025 | 5.00 | 67.0 | — |

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| PC&M - Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 228 | 0.40 |
| PC&M - Grading | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 168 | 0.37 |
| PC&M - Grading | Excavators | Diesel | Average | 1.00 | 8.00 | 70.0 | 0.38 |
| TC&M - Grading | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| TC&M - Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 367 | 0.40 |
| TC&M - Grading | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |
| TC&M - Grading | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |
| Ampjack - Tower Raising | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Ampjack - Tower Raising | Forklifts | Diesel | Average | 3.00 | 8.00 | 82.0 | 0.20 |
| Ampjack - Tower Raising | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 8.00 | 84.0 | 0.37 |
| Ampjack - Tower Raising | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Ampjack - Tower Raising | Welders | Diesel | Average | 1.00 | 8.00 | 46.0 | 0.45 |
| PC&M Temp Access Road | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |
| PC&M Temp Access Road | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 222 | 0.40 |
| PC&M Temp Access Road | Excavators | Diesel | Average | 1.00 | 8.00 | 70.0 | 0.38 |
| PC&M Temp Access Road | Paving Equipment | Diesel | Average | 2.00 | 8.00 | 89.0 | 0.36 |
| PC&M Access Road | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |
| PC&M Access Road | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 222 | 0.40 |
| PC&M Access Road | Rollers | Diesel | Average | 1.00 | 8.00 | 137 | 0.43 |
| PC&M Access Road | Excavators | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.38 |
| PC&M Access Road | Paving Equipment | Diesel | Average | 2.00 | 8.00 | 89.0 | 0.36 |

### 5.2.2. Mitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| PC&M - Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 228 | 0.40 |
| PC&M - Grading | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 168 | 0.37 |
| PC&M - Grading | Excavators | Diesel | Average | 1.00 | 8.00 | 70.0 | 0.38 |
| TC&M - Grading | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| TC&M - Grading | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 367 | 0.40 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| TC&M - Grading | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |
| TC&M - Grading | Rubber Tired Loaders | Diesel | Average | 1.00 | 8.00 | 150 | 0.36 |
| Ampjack - Tower Raising | Cranes | Diesel | Average | 1.00 | 8.00 | 367 | 0.29 |
| Ampjack - Tower Raising | Forklifts | Diesel | Average | 3.00 | 8.00 | 82.0 | 0.20 |
| Ampjack - Tower Raising | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 8.00 | 84.0 | 0.37 |
| Ampjack - Tower Raising | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Ampjack - Tower Raising | Welders | Diesel | Average | 1.00 | 8.00 | 46.0 | 0.45 |
| PC&M Temp Access Road | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |
| PC&M Temp Access Road | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 222 | 0.40 |
| PC&M Temp Access Road | Excavators | Diesel | Average | 1.00 | 8.00 | 70.0 | 0.38 |
| PC&M Temp Access Road | Paving Equipment | Diesel | Average | 2.00 | 8.00 | 89.0 | 0.36 |
| PC&M Access Road | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |
| PC&M Access Road | Rubber Tired Dozers | Diesel | Average | 1.00 | 8.00 | 222 | 0.40 |
| PC&M Access Road | Rollers | Diesel | Average | 1.00 | 8.00 | 137 | 0.43 |
| PC&M Access Road | Excavators | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.38 |
| PC&M Access Road | Paving Equipment | Diesel | Average | 2.00 | 8.00 | 89.0 | 0.36 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| PC&M - Grading | — | — | — | — |
| PC&M - Grading | Worker | 24.0 | 18.5 | LDA,LDT1,LDT2 |
| PC&M - Grading | Vendor | 4.00 | 10.2 | HHDT,MHDT |
| PC&M - Grading | Hauling | 4.00 | 20.0 | HHDT |
| PC&M - Grading | Onsite truck | — | — | HHDT |
| TC&M - Grading | — | — | — | — |
| TC&M - Grading | Worker | 24.0 | 18.5 | LDA,LDT1,LDT2 |
| TC&M - Grading | Vendor | 4.00 | 10.2 | HHDT,MHDT |
| TC&M - Grading | Hauling | 4.00 | 20.0 | HHDT |
| TC&M - Grading | Onsite truck | — | — | HHDT |
| Ampjack - Tower Raising | — | — | — | — |
| Ampjack - Tower Raising | Worker | 36.0 | 18.5 | LDA,LDT1,LDT2 |
| Ampjack - Tower Raising | Vendor | 4.00 | 10.2 | HHDT,MHDT |
| Ampjack - Tower Raising | Hauling | 8.00 | 20.0 | HHDT |
| Ampjack - Tower Raising | Onsite truck | — | — | HHDT |
| PC&M Temp Access Road | — | — | — | — |
| PC&M Temp Access Road | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| PC&M Temp Access Road | Vendor | 4.00 | 10.2 | HHDT,MHDT |
| PC&M Temp Access Road | Hauling | 4.00 | 20.0 | HHDT |
| PC&M Temp Access Road | Onsite truck | — | — | HHDT |
| PC&M Access Road | — | — | — | — |
| PC&M Access Road | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| PC&M Access Road | Vendor | 4.00 | 10.2 | HHDT,MHDT |
| PC&M Access Road | Hauling | 4.00 | 20.0 | HHDT |
| PC&M Access Road | Onsite truck | — | — | HHDT |

### 5.3.2. Mitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| PC&M - Grading | — | — | — | — |
| PC&M - Grading | Worker | 24.0 | 18.5 | LDA,LDT1,LDT2 |
| PC&M - Grading | Vendor | 4.00 | 10.2 | HHDT,MHDT |
| PC&M - Grading | Hauling | 4.00 | 20.0 | HHDT |
| PC&M - Grading | Onsite truck | — | — | HHDT |
| TC&M - Grading | — | — | — | — |
| TC&M - Grading | Worker | 24.0 | 18.5 | LDA,LDT1,LDT2 |
| TC&M - Grading | Vendor | 4.00 | 10.2 | HHDT,MHDT |
| TC&M - Grading | Hauling | 4.00 | 20.0 | HHDT |
| TC&M - Grading | Onsite truck | — | — | HHDT |
| Ampjack - Tower Raising | — | — | — | — |
| Ampjack - Tower Raising | Worker | 36.0 | 18.5 | LDA,LDT1,LDT2 |
| Ampjack - Tower Raising | Vendor | 4.00 | 10.2 | HHDT,MHDT |
| Ampjack - Tower Raising | Hauling | 8.00 | 20.0 | HHDT |
| Ampjack - Tower Raising | Onsite truck | — | — | HHDT |
| PC&M Temp Access Road | — | — | — | — |
| PC&M Temp Access Road | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| PC&M Temp Access Road | Vendor | 4.00 | 10.2 | HHDT,MHDT |
| PC&M Temp Access Road | Hauling | 4.00 | 20.0 | HHDT |
| PC&M Temp Access Road | Onsite truck | — | — | HHDT |
| PC&M Access Road | — | — | — | — |
| PC&M Access Road | Worker | 20.0 | 18.5 | LDA,LDT1,LDT2 |
| PC&M Access Road | Vendor | 4.00 | 10.2 | HHDT,MHDT |
| PC&M Access Road | Hauling | 4.00 | 20.0 | HHDT |
| PC&M Access Road | Onsite truck | — | — | HHDT |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

## 5.5. Architectural Coatings

| Phase Name | Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|---|

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (cy) | Material Exported (cy) | Acres Graded (acres) | Material Demolished (sq. ft.) | Acres Paved (acres) |
|---|---|---|---|---|---|
| PC&M - Grading | — | — | 38.5 | 0.00 | — |
| TC&M - Grading | — | — | 30.0 | 0.00 | — |
| PC&M Temp Access Road | 0.00 | 0.00 | 0.00 | 0.00 | 3.74 |
| PC&M Access Road | 0.00 | 0.00 | 0.00 | 0.00 | 3.74 |

### 5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|
| Other Non-Asphalt Surfaces | 3.74 | 0% |

## 5.8. Construction Electricity Consumption and Emissions Factors

### kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|
| 2025 | 0.00 | 532 | 0.03 | < 0.005 |
| 2026 | 0.00 | 532 | 0.03 | < 0.005 |

# 5.18. Vegetation

## 5.18.1. Land Use Change

### 5.18.1.1. Unmitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

### 5.18.1.2. Mitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

## 5.18.1. Biomass Cover Type

### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

### 5.18.1.2. Mitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

## 5.18.2. Sequestration

### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

### 5.18.2.2. Mitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|

# 6. Climate Risk Detailed Report

## 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 31.0 | annual days of extreme heat |
| Extreme Precipitation | 1.25 | annual days with precipitation above 20 mm |
| Sea Level Rise | 0.00 | meters of inundation depth |
| Wildfire | 10.1 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 4 | 0 | 0 | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 0 | 0 | N/A |
| Wildfire | 1 | 0 | 0 | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 0 | 0 | 0 | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | 4 | 1 | 1 | 4 |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | 1 | 1 | 1 | 2 |
| Wildfire | 1 | 1 | 1 | 2 |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | 1 | 1 | 1 | 2 |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Exposure Indicators | — |
| AQ-Ozone | 95.3 |

| | |
|---|---|
| AQ-PM | 25.8 |
| AQ-DPM | 2.90 |
| Drinking Water | 70.6 |
| Lead Risk Housing | 57.1 |
| Pesticides | 83.9 |
| Toxic Releases | 53.5 |
| Traffic | 6.72 |
| Effect Indicators | — |
| CleanUp Sites | 17.1 |
| Groundwater | 14.3 |
| Haz Waste Facilities/Generators | 0.00 |
| Impaired Water Bodies | 0.00 |
| Solid Waste | 11.6 |
| Sensitive Population | — |
| Asthma | 58.6 |
| Cardio-vascular | 53.7 |
| Low Birth Weights | 25.2 |
| Socioeconomic Factor Indicators | — |
| Education | 67.6 |
| Housing | 46.5 |
| Linguistic | — |
| Poverty | 67.2 |
| Unemployment | 88.1 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |

| | |
|---|---|
| Above Poverty | 34.2871808 |
| Employed | 9.713845759 |
| Median HI | 41.11382009 |
| Education | — |
| Bachelor's or higher | 39.70229693 |
| High school enrollment | 100 |
| Preschool enrollment | 35.44206339 |
| Transportation | — |
| Auto Access | 66.18760426 |
| Active commuting | 1.039394328 |
| Social | — |
| 2-parent households | 25.445913 |
| Voting | 72.38547414 |
| Neighborhood | — |
| Alcohol availability | 86.28256127 |
| Park access | 30.15526755 |
| Retail density | 13.92275119 |
| Supermarket access | 18.04183241 |
| Tree canopy | 97.65173874 |
| Housing | — |
| Homeownership | 76.02977031 |
| Housing habitability | 62.18401129 |
| Low-inc homeowner severe housing cost burden | 23.18747594 |
| Low-inc renter severe housing cost burden | 61.46541768 |
| Uncrowded housing | 49.1979982 |
| Health Outcomes | — |
| Insured adults | 27.75567817 |
| Arthritis | 0.0 |

| | |
|---|---|
| Asthma ER Admissions | 43.6 |
| High Blood Pressure | 0.0 |
| Cancer (excluding skin) | 0.0 |
| Asthma | 0.0 |
| Coronary Heart Disease | 0.0 |
| Chronic Obstructive Pulmonary Disease | 0.0 |
| Diagnosed Diabetes | 0.0 |
| Life Expectancy at Birth | 34.7 |
| Cognitively Disabled | 24.2 |
| Physically  Disabled | 7.5 |
| Heart Attack ER Admissions | 31.2 |
| Mental Health Not Good | 0.0 |
| Chronic Kidney Disease | 0.0 |
| Obesity | 0.0 |
| Pedestrian Injuries | 19.6 |
| Physical Health Not Good | 0.0 |
| Stroke | 0.0 |
| Health Risk Behaviors | — |
| Binge Drinking | 0.0 |
| Current Smoker | 0.0 |
| No Leisure Time for Physical Activity | 0.0 |
| Climate Change Exposures | — |
| Wildfire Risk | 2.0 |
| SLR Inundation Area | 0.0 |
| Children | 82.0 |
| Elderly | 6.1 |
| English Speaking | 67.1 |
| Foreign-born | 22.5 |

| | |
|---|---|
| Outdoor Workers | 11.4 |
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 97.0 |
| Traffic Density | 11.4 |
| Traffic Access | 23.0 |
| Other Indices | — |
| Hardship | 54.0 |
| Other Decision Support | — |
| 2016 Voting | 49.1 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 50.0 |
| Healthy Places Index Score for Project Location (b) | 37.0 |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | No |
| Project Located in a Low-Income Community (Assembly Bill 1550) | Yes |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

| Screen | Justification |
| --- | --- |
| Construction: Construction Phases | mod |
| Construction: Off-Road Equipment | asdasd |
| Construction: Trips and VMT | mod |

# Appendix C
Biological Resources Report

Biological Resources Technical Report

# Adelanto–Rinaldi Line 1 Transmission Line Upgrade Project

**JULY 2024**

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# Acronyms and Abbreviations

| Acronym | Definition |
|---|---|
| AOU | American Ornithologists' Union |
| BMP | best management practices |
| BSA | biological study area |
| CDFW | California Department of Fish and Wildlife |
| CEHC | California Essential Habitat Connectivity |
| CEQA | California Environmental Quality Act |
| CESA | California Endangered Species Act |
| County | Los Angeles County |
| CNDDB | California Natural Diversity Database |
| CNPS | California Native Plant Society |
| CNPS Inventory | California Native Plant Society Inventory of Rare and Endangered Plants |
| Commission | California Fish and Game Commission |
| CRPR | California Rare Plant Rank |
| CWA | Clean Water Act |
| EPA | U.S. Environmental Protection Agency |
| Esri | Environmental Systems Research Institute |
| FESA | Federal Endangered Species Act |
| GIS | geographic information system |
| HCP | habitat conservation plan |
| IPaC | Information for Planning and Conservation System |
| ISA | International Society of Arboriculture |
| LADWP | Los Angeles Department of Water and Power |
| MBTA | Migratory Bird Treaty Act |
| NCCP | natural community conservation plan |
| NERC | North American Electric Reliability Corporation |
| NETR | Nationwide Environmental Title Research |
| NPDES | National Pollutant Discharge Elimination System |
| NRCS | Natural Resources Conservation Service |
| OHWM | ordinary high-water mark |
| PLSS | Public Land Survey System |
| Porter-Cologne Act | Porter–Cologne Water Quality Control Act |
| project | Adelanto-Rinaldi Line 1 Upgrade Project |
| QSD | Qualified Storm Water Developer |
| QSP | Qualified Storm Water Practitioner |
| ROW | right-of-way |
| RWQCB | Regional Water Quality Control Board |
| SEA | Significant Ecological Area |
| SSC | California Species of Special Concern |
| SWPPP | Storm Water Pollution Prevention Plan |
| SWRCB | State Water Resources Control Board |

| Acronym | Definition |
|---|---|
| USACE | U.S. Army Corps of Engineers |
| USDA | U.S. Department of Agriculture |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| WRCC | Western Regional Climate Center |

# 1 Introduction

This report documents the results of surveys conducted by Dudek to identify potential biological resources constraints for the proposed Los Angeles Department of Water and Power (LADWP) Adelanto–Rinaldi Line 1 Upgrade Project (project). The purpose of this assessment is to evaluate the existing biological conditions and potential impacts to sensitive biological resources associated with the proposed project, including a 100-foot buffer biological study area (BSA). This report is prepared at a level of detail sufficient to address California Environmental Quality Act (CEQA) requirements, specifically the biological thresholds of significance included in Appendix G, as well as identifying the potential need for permits for sensitive resources protected under federal and state regulations.

## 1.1 Project Location

The project is located within a linear corridor in the northern portion of Los Angeles County (County) and generally extends from the Granada Hills neighborhood of the City of Los Angeles to the southern extent of the Antelope Valley (Figure 1, Project Location). The project site consists of 17 work areas along the Adelanto–Rinaldi Line 1 transmission line corridor, which extend from the LADWP Van Norman Complex, located in the Granada Hills neighborhood of the City of Los Angeles, northward through the City of Santa Clarita. The corridor then traverses across Soledad Canyon and the Sierra Pelona mountain range in a southwest to northeast direction into the southern extent of the Antelope Valley, where it continues eastward through the southern tip of the City of Palmdale and into an unincorporated portion of Los Angeles County, just south of Littlerock (a census-designated place). The project site encompasses approximately 12.48 acres and is located on LADWP-owned land or within the existing right-of-way (ROW) easements granted to LADWP. The project occurs within the San Fernando, Mint Canyon, Sleepy Valley, Agua Dulce, Ritter Ridge, Palmdale, and Littlerock U.S. Geologic Survey's (USGS) 7.5-minute topographic quadrangles (USGS 2015a-g), and is situated on Sections 21, 23, and 24 of Township 5 North, Range 11 West; Sections 8, 16, 23, and 24 of Township 5 North, Range 12 West; and Sections 2, 4, 20, and 34 of Township 5 North, Range 13 West of the U.S. Public Land Survey System (PLSS).

## 1.2 Project Description

The project involves ampacity upgrades of the existing 500 kilovolt (kV) Adelanto–Rinaldi Line 1 transmission line, an overhead line located in the northern portion of Los Angeles County. The ampacity upgrade requires ground clearance, grading, and tower raises in order to be compliant with transmission line safety and reliability standards.

### 1.2.1 Proposed Project

The proposed project involves grading activities and tower raises at 17 work areas along the existing Adelanto–Rinaldi Line 1 transmission line (nine underline grading activities and eight tower raises). The proposed project also entails improvements to portions of existing access roads slated for site access uses, equipment staging and storage, and distribution of excavated soils. Table 1 lists each work areas, ordered from east to west, along with respective proposed activities.

**Table 1. Project Work Areas**

| Tower Number or Tower Spans | Proposed Activity |
|---|---|
| 32-4 | Tower Raise (10 Feet) |
| 33-2 to 33-3 | Ground Clearance |
| 35-2 to 35-3 | Ground Clearance |
| 38-1 to 38-2 | Ground Clearance |
| 38-4 to 39-1 | Ground Clearance |
| 41-3 to 41-4 | Ground Clearance |
| 43-2 | Tower Raise (10 feet) |
| 46-4 | Tower Raise (10 feet) |
| 49-2 to 49-3 | Ground Clearance |
| 54-2 | Tower Raise (10 feet) |
| 57-1 to 57-2 | Ground Clearance |
| 57-2 | Tower Raise (10 feet) |
| 61-2 | Tower Raise (20 feet) |
| 65-4 to 66-1 | Ground Clearance |
| 70-4 to 71-1 | Ground Clearance |
| 76-5 | Tower Raise (10 feet) |
| 77-1 | Ground Clearance and Tower Raise (10 feet) |

## 1.2.2 Construction

Construction activities would occur sequentially along the transmission line corridor and would take up to 9 months to complete. Assuming 270 workdays per year in the span of two years, construction at each individual site would last an average of 20 to 30 workdays, with some sites requiring less than 20 days and some sites requiring up to 30 days, depending on the amount of grading and the conditions at the site. The estimated work force for grading operations is between 4 to 6 workers per day. When feasible, this work force would be split into two crews of 2-3 to each to allow for work to occur on two grading sites simultaneously. Tower raising activities are expected to require a larger workforce, which is estimated at 12 to 24 workers per site. Tower raising activities would take approximately 7 days per tower, for a total of approximately 56 days of tower raising activities.

Details regarding the access roads, grading process, tower raising process, and work force requirements are provided below. Best management practices (BMPs) would be used to minimize the risk of potential impacts during construction and would be communicated to employees prior to the start of work. Safety requirements and procedures for construction are provided in the LADWP Power Distribution safety rulebook.

### Access Roads

Access to the proposed work areas would use existing access roads to the extent feasible. Where access to the proposed work areas is not possible via the existing roads, overland travel would be limited to areas within the defined project limits as well as in select previously disturbed areas identified as non-sensitive by LADWP's biological and cultural resources specialists. Overland travel would be required on approximately 6 of the 17 work sites and would total approximately 1501 linear feet. Vehicles would traverse the area by driving over

existing vegetation. Where appropriate, access to the ROW would be controlled through the use of proper signage and flagging.

## Grading/Ground Clearing Process

Grading activities would be carried out within the LADWP ROW to achieve conductor to ground height consistency and would include the staking of grading limits, clearing & grubbing, grading, and site restoration. Grading/ground clearing would occur between the following nine spans: 33-2 to 33-3; 35-2 to 35-3; 38-1 to 38-2; 38-4 to 39-1; 41-3 to 41-4; 49-2 to 49- 3; 57-1 to 57-2; 65-4 to 66-1; and 70-4 to 71-1. In addition, ground clearance would be required to establish a new permanent access road to Tower 77-1. Prior to the start of grading, each site would have cut and fill stakes and construction perimeter stakes set. Construction equipment to be used for grading would include motor graders, bulldozers, excavators, compact skid-steer loaders, dump trucks, water trucks, wheel/track loaders, backhoe loaders, jackhammers, and various small utility vehicles. The construction equipment would be staged within the confines of existing roadways and turnouts. Temporary storage of excavated soils would occur within the project limits in select previously disturbed areas identified in coordination amongst LADWP and its Qualified Storm Water Developer (QSD), Qualified Storm Water Practitioner (QSP), and biological and cultural resources specialists and in accordance with any Storm Water Pollution Prevention Plan (SWPPP) requirements and CEQA mitigation requirements. Excavated soils accumulated during grading activities would then be spread along LADWP fee-owned transmission line right-of-way corridor. The excavated soils would be used to repair ruts and potholes and to improve the overall state of the access roads. Spreading activities for excavated soils occurring outside of existing roads or work areas would occur in previously disturbed areas to the extent feasible and would be implemented in accordance with all relevant SWPPP requirements and CEQA mitigation requirements for biological and archaeological resources. It is not anticipated that any excavated soils would be hauled offsite.

## Tower Raising Process

The eight towers that are proposed for raising include towers 32-4, 43-2, 46-4, 54-2, 57-2, 61-2, 76-5, and 77-1. To achieve the required conductor-to-ground clearances, the existing free-standing lattice steel towers would be reinstalled in a manner that increases clearance distances (10 feet increase in height for all towers, with exception of one tower to be raised 20 ft). The existing towers are 110 feet tall, as measured from the ground wire peaks to grade.

Tower raising activities would consist of preparing pads for construction equipment, conductor offset adjustments, and site cleanup and restoration. Staging areas would accommodate the construction crew trucks, forklifts, and man lifts needed to raise the towers. Other equipment involved would include backhoe loaders, water trucks, and various small utility vehicles. For activities taking place in work areas not owned by LADWP, a license agreement with a private party, or a permit from a governmental agency may be required.

The tower raising would be accomplished by placing hydraulic systems inside the tower body and adding extensions within the body of the towers. The addition of tower steel inside of the tower body would be held in place by a large hydraulic system and the raised towers would be approximately 120 – 130 feet tall. After the tower has been raised, conductor offset adjustments may be required and would entail small adjustments to the conductor lengths which would be carried out by technicians in large man lifts. The construction pads would also be returned to the sites' original condition to the extent feasible. This process would take approximately 7 days per site and would require approximately 12 to 24 workers.

## Post-Construction Activities

### Stabilization, Rehabilitation, and Restoration

Site restoration activities would be undertaken to return the construction areas to their original condition. All areas where grubbing, grading, or other ground disturbance activities are proposed to occur would be restored back to the original state with native vegetation following construction. Restoration efforts would be performed by LADWP and/or its contractors and would be monitored by a qualified biologist. The final grading plan would be prepared by the QSD. Prior to grading or site disturbance, vegetation and topsoil within the impact areas would be salvaged. Any excavated soils that would be stored in excess of 48 hours would be covered by an anchored tarp and/or watered down until the site is ready for the soil to be replaced. Native vegetation would be salvaged and stored. To minimize mortality, native plants would be stored by burying the root and lower stems of the salvaged plants in native soil and watering once per week, if feasible (e.g., by water truck). Following construction, the salvaged plant materials would be replanted within the impact areas. A commercially obtained native seed mix adapted to local site conditions may be applied using the imprinting method. Soil dominated by non-native plants would not be salvaged or re-applied. Water would be supplied as necessary for plant establishment only. Note that initial restoration efforts would occur as part of the construction periods identified above at each work site. However, follow-up work may occur at each site after construction to complete any necessary restoration work.

### Operations and Maintenance

The Adelanto–Rinaldi Line 1 transmission line is regularly inspected via helicopter and by ground using existing access roads. These inspections provide an opportunity to assess the state of the transmission line conductors, towers, and access roads. Occasionally, severe weather events such as flash flooding caused by heavy rains will prompt an inspection of sections of the transmission line that may have been impacted.

# 2 Regulatory Setting

This section describes the regulatory framework relevant to the project.

## 2.1 Federal Regulations

### 2.1.1 Federal Endangered Species Act

The federal Endangered Species Act (FESA) of 1973 (16 USC 1531 et seq.), as amended, is administered by the U.S. Fish and Wildlife Service (USFWS) for most plant and animal species, and by the National Oceanic and Atmospheric Administration National Marine Fisheries Service for certain marine species. FESA is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend, and to provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. FESA defines an endangered species as "any species that is in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as "any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Under FESA, it is unlawful to take any listed species; "take" is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

FESA allows for the issuance of incidental take permits for listed species under Section 7, which is generally available for projects that also require other federal agency permits or other approvals, and under Section 10, which provides for the approval of habitat conservation plans on private property without any other federal agency involvement. Upon development of a habitat conservation plan, USFWS can issue incidental take permits for listed species.

### 2.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) was originally passed in 1918 as four bilateral treaties, or conventions, for the protection of a shared migratory bird resource. The primary motivation for the international negotiations was to stop the "indiscriminate slaughter" of migratory birds by market hunters and others (16 USC 703–712). Each of the treaties protects selected species of birds and provides for closed and open seasons for hunting game birds. The MBTA prohibits the intentional and unintentional take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, "take" is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 USC 703 et seq.). Currently, the Migratory Birds office considers nests that support eggs, nestlings, or juveniles to be active. Additionally, Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, requires that any project with federal involvement address impacts of federal actions on migratory birds with the purpose of promoting conservation of migratory bird populations (66 FR 3853–3856). The Executive Order requires federal agencies to work with USFWS to develop a memorandum of understanding. USFWS reviews actions that might affect these species.

### 2.1.3 Clean Water Act

The Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires a project operator for a federal license or permit

that allows activities resulting in a discharge to waters of the United States to obtain state certification, thereby ensuring that the discharge will comply with provisions of the CWA. The Regional Water Quality Control Boards (RWQCBs) administer the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the United States. Section 404 establishes a permit program administered by the U.S. Army Corps of Engineers (USACE) that regulates the discharge of dredged or fill material into waters of the United States, including wetlands. USACE implementing regulations are found at 33 Code of Federal Regulations (CFR) Parts 320 through 332. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the U.S. Environmental Protection Agency in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

## 2.2 State Regulations

### 2.2.1 California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Sections 2050–2068) provides protection and prohibits the take of plant, fish, and wildlife species listed by the State of California. Unlike FESA, under CESA, state-listed plants have the same degree of protection as wildlife, but insects and other invertebrates may not be listed. Take is defined similarly to FESA and is prohibited for both listed and candidate species. Take authorization may be obtained by a project applicant from the California Department of Fish and Wildlife (CDFW) under CESA Section 2081, which allows take of a listed species for educational, scientific, or management purposes. In this case, private developers consult with CDFW to develop a set of measures and standards for managing the listed species, including full mitigation for impacts, funding of mitigation implementation, and monitoring of mitigation measures.

### 2.2.2 California Fish and Game Code

#### Fully Protected Species

Sections 3505, 3511, 4700, 5050, and 5515 of the California Fish and Game Code outline protections for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. CDFW cannot issue permits or licenses that authorize the "take" of any fully protected species, except under certain circumstances, such as scientific research and live capture and relocation of such species pursuant to a permit for the protection of livestock. Furthermore, it is the responsibility of the CDFW to maintain viable populations of all native species. Toward that end, the CDFW has designated certain vertebrate species as Species of Special Concern, because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.

#### Section 1600–1616

Under California Fish and Game Code Sections 1600–1616, CDFW has the authority to regulate work that will substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake. CDFW also has the authority to regulate work that will deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. This regulation takes the form of a requirement for a Lake or Streambed

Alteration Agreement and is applicable to all projects. Applications to CDFW must include a complete, certified CEQA document.

CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes characterized by the presence of definable bed and banks, and existing fish or wildlife resources. CDFW takes jurisdiction to the top of bank of the stream or the limit of the adjacent riparian vegetation, which may include oak woodlands in canyon bottoms. Historical court cases have further extended CDFW jurisdiction to include watercourses that seemingly disappear but reemerge elsewhere. Under the CDFW definition, a watercourse need not exhibit evidence of an ordinary high-water mark (OHWM) to be claimed as jurisdictional. CDFW does not have jurisdiction over ocean or shoreline resources.

#### California Native Plant Protection Act

The Native Plant Protection Act of 1977 (see Section 1900 et seq. of the California Fish and Game Code) directed CDFW to carry out the Legislature's intent to "preserve, protect and enhance rare and endangered plants in this State." The Native Plant Protection Act gave the Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take. CESA expanded on the original Native Plant Protection Act and enhanced legal protection for plants, but the Native Plant Protection Act remains part of the California Fish and Game Code. To align with federal regulations, CESA created the categories of "threatened" and "endangered" species. It converted all "rare" animals into the act as threatened species but did not do so for rare plants. Thus, there are three listing categories for plants in California: rare, threatened, and endangered. Because rare plants are not included in CESA, mitigation measures for impacts to rare plants are specified in a formal agreement between CDFW and the project proponent.

#### Nesting Birds

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 protects all birds of prey (raptors) and their eggs and nests. Section 3511 states that fully protected birds or parts thereof may not be taken or possessed at any time. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA.

### 2.2.3 California Native Desert Plant Act

The purpose of the California Desert Native Plants Act is to protect certain species of California desert native plants from unlawful harvesting on both public and privately owned lands. The California Desert Native Plants Act only applies within the boundaries of Imperial, Inyo, Kern, Los Angeles, Mono, Riverside, San Bernardino, and San Diego Counties. Within these counties, the California Desert Native Plants Act prohibits the harvest, transport, sale, or possession of specific native desert plants unless a person has a valid permit or wood receipt, and the required tags and seals. The appropriate permits, tags and seals must be obtained from the county sheriff or commissioner of the county where collecting will occur, and the county will charge a fee. More information on the California Desert Native Plants Act, including the species protected under the law, is available by reading the provisions of the law.

### 2.2.4 California Environmental Quality Act

CEQA requires identification of a project's potentially significant impacts on biological resources, and ways that such impacts can be avoided, minimized, or mitigated. CEQA also provides guidelines and thresholds for use by lead agencies for evaluating the significance of proposed impacts.

The State of California CEQA Guidelines (CEQA Guidelines) Section 15380(b)(1) defines endangered animals or plants as species or subspecies whose "survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors." A rare animal or plant is defined in CEQA Guidelines Section 15380(b)(2) as a species that, although not presently threatened with extinction, exists "in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or … [t]he species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as that term is used in the federal Endangered Species Act." Additionally, an animal or plant may be presumed to be endangered, rare, or threatened if it meets the criteria for listing, as defined further in CEQA Guidelines Section 15380(c).

CDFW has developed a list of "Special Species" as "a general term that refers to all of the taxa the California Natural Diversity Database (CNDDB) is interested in tracking, regardless of their legal or protection status." This is a broader list than those species that are protected under FESA, CESA, and other California Fish and Game Code provisions, and includes lists developed by other organizations, including, for example, the Audubon Watch List. Guidance documents prepared by other agencies, including the Bureau of Land Management Sensitive Species and USFWS Birds of Special Concern, are also included on this CDFW Special Species list. Additionally, CDFW has concluded that plant species listed as California Rare Plant Rank (CRPR) 1 and 2 by the California Native Plant Society (CNPS), and potentially some CRPR 3 plants, are covered by CEQA Guidelines Section 15380.

Section IV, Appendix G, Environmental Checklist Form, of the CEQA Guidelines requires an evaluation of impacts to "any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or the USFWS."

### 2.2.5 Porter–Cologne Water Quality Control Act

Pursuant to provisions of the Porter–Cologne Act, the RWQCBs regulate discharging waste, or proposing to discharge waste, within any region that could affect a water of the state (California Water Code, Section 13260[a]). The State Water Resources Control Board (SWRCB) defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050[e]). As of April 2019, the SWRCB has narrowed their definition of waters of the state to include the following:

1. Natural wetlands
2. Wetlands created by modification of a surface water of the state
3. Artificial wetlands that meet any of the following criteria:
    a. Approved by an agency as compensatory mitigation for impacts to other waters of the state, except where the approving agency explicitly identifies the mitigation as being of limited duration
    b. Specifically identified in a water quality control plan as a wetland or other water of the state

c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape

d. Greater than or equal to 1 acre in size unless the artificial wetland was constructed and is currently used and maintained, primarily for one or more of the following purposes: industrial or municipal wastewater treatment or disposal; settling of sediment; detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial permitting program; treatment of surface waters; agricultural crop irrigation or stock watering; fire suppression; industrial processing or cooling water; active surface mining—even if the site is managed for interim wetlands functions and values; log storage; treatment, storage, or distribution of recycled water; maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits); or fields flooded for rice growing.

Wetlands that may not meet all of USACE's wetland delineation criteria are considered wetland waters of the state if, "under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation" (SWRCB 2021). Additionally, aquatic resources that USACE determines to not be waters of the United States because they lack a significant nexus to a traditional navigable water or are above the OHWM limit of federal jurisdiction, may also be considered waters of the state. If a CWA Section 404 permit is not required for a project, the RWQCB may still require a permit (waste discharge requirements) for impacts to waters of the state under the Porter–Cologne Act.

## 2.3 Local Regulations

### 2.3.1 Los Angeles County Significant Ecological Area Ordinance

As part of the Conservation and Open Space and Land Use elements of the General Plan, the County has identified and adopted policies since 1970 for the establishment of Significant Ecological Areas (SEAs). These SEAs were developed to maintain biological diversity by establishing natural biological parameters (key species, habitat types, and linkages) and recommended management practices. The final boundaries and categories for the 21 SEAs (and 9 Coastal Resource Areas) were established in 2015 with the County Board of Supervisors approval of the General Plan 2035.

The BSA at a few work locations occur within a County of Los Angeles designated SEA (County of Los Angeles 2023). The BSA at Tower Span 57-1 to 57-2, Tower 57-2, and Tower Span 70-4 to 71-1 partially overlaps with the Santa Clara River SEA, and the BSA at Tower Span 33-2 to 33-3 partially overlaps with the Antelope Valley SEA.

### 2.3.2 Los Angeles County Oak Tree Ordinance

The County of Los Angeles Oak Tree Ordinance was established to recognize oak trees as significant historical, aesthetic, and ecological resources. The goal of the ordinance is to create favorable conditions for the preservation and propagation of this unique and threatened plant heritage. By making this part of the development process, healthy oak trees will be preserved and maintained. The Los Angeles County Oak Tree Ordinance applies to all unincorporated areas of the County. Additionally, the Los Angeles County Oak Tree Ordinance defines the "Protected Zone" of a tree as, "that area within the dripline of an oak tree and extending therefrom to a point at least five feet

outside the dripline, or 15 feet from the trunks of a tree, whichever distance is greater" (Title 22.56.2060). For the purposes of determining tree impacts, trees that have protected zones that have been encroached upon would also be considered impacted.

Under the Los Angeles County Oak Tree Ordinance, a person must obtain a permit to cut, destroy, remove, relocate, inflict damage upon, or encroach into the protected zone of any tree of the oak tree genus that is 8 inches or more in diameter at 4.5 feet above mean natural grade, or in the case of oaks with multiple trunks, a combined diameter of 12 inches or more of the two largest trunks.

### 2.3.3 City of Santa Clarita Oak Tree Ordinance

The City of Santa Clarita approved Oak Tree Ordinance No. 89-10 as a means of regulating impacts and to preserve all oak species within the City of Santa Clarita limits. Per the Santa Clarita Oak Tree Preservation Section 17.51.040, impacts such as pruning, encroaching cutting, relocating or removal of any oaks without prior approval through an oak tree permit (17.23.170) will not be allowed.

### 2.3.4 City of Los Angeles Protected Tree Ordinance

The City of Los Angeles Protected Tree Ordinance, as modified by Ordinance 186873, provides guidelines for the preservation of native Southern California tree or shrub species measuring 4 inches or more in cumulative diameter at 4.5 feet above the ground from the base of the tree or shrub. Trees or shrubs protected under this ordinance include all oak trees indigenous to California (excluding scrub oak [*Quercus dumosa*]), Southern California black walnut (*Juglans californica* var. *californica*), California sycamore (*Platanus racemosa*), California bay (*Umbellularia californica*), blue elderberry (*Sambucus mexicana*), and toyon (*Heteromeles arbutifolia*).

# 3 Methods

Data regarding biological resources present within the BSA were obtained through a review of pertinent literature, field reconnaissance, and tree survey; all are described in detail below.

## 3.1 Literature Review

The following data sources were reviewed to assist with the assessment of biological resources:

- CDFW California Natural Diversity Database (CNDDB) (CDFW 2023a)
- USFWS Information for Planning and Consultation System (IPaC) (USFWS 2023a)
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (Inventory) (CNPS 2023a)
- U.S. Department of Department and Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2023a)
- CDFW Biogeographic Information and Observation System (CDFW 2023b)

Prior to conducting the field investigation, the CNDDB and CNPS Inventory were queried for the seven subject USGS 7.5-minute topographic quadrangles within which the project work areas are located (i.e., Littlerock, Palmdale, Ritter Ridge, Sleepy Valley, Agua Dulce, San Fernando, and Mint Canyon), as well as the surrounding twenty USGS 7.5-minute quadrangle maps (i.e., Alpine Butte, Lancaster East, Hi Vista, Valyermo, Lovejoy Buttes, Juniper Hills, Pacifico Mountain, Lancaster West, Acton, Del Sur, Condor Peak, Green Valley, Sunland, Warm Springs Mountain, Newhall, Oat Mountain, Burbank, Canoga Park, Van Nuys, and Lake Hughes). The purpose of this review was to determine whether special-status plant and wildlife species are known to occur in the vicinity of or within the BSA.

Other literature reviewed include A Manual of California Vegetation, Online Edition (CNPS 2023b); the California Natural Community list (CDFW 2023c); State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW 2023d); State and Federally Listed Endangered and Threatened Animals of California (CDFW 2023e); and the CDFW California Wildlife Habitat Relationships Life History Accounts and Range Maps (CDFW 2023f).

The following available resources were reviewed to assess the potential for jurisdictional waters: aerial photographs (Google Earth 2023; Nationwide Environmental Title Research [NETR] 2023); the subject USGS 7.5-minute topographic quadrangle maps (USGS 2015a-g); the National Hydrography Dataset and Watershed Boundary Dataset (USGS 2023); and the USFWS National Wetland Inventory (USFWS 2023b).

## 3.2 Special-Status Plant and Wildlife Species Assessment

Endangered, rare, or threatened plant species as defined in Section 15380(b) of the CEQA Guidelines (14 CCR 15000 et seq.) are referred to as “special-status plant species” and, as used in this report, include (1) plant species listed, proposed for listing, or candidates for listing as endangered or threatened recognized in the context of CESA and FESA (CDFW 2023d); and/or (2) plant species with a California Rare Plant Rank (CRPR) 1 or 2 as designated by the CNPS (2023a). Species with CRPR 3 or 4 generally do not qualify for protection under CEQA and therefore, are not analyzed in this report.

Endangered, rare, or threatened wildlife species as defined in CEQA Guidelines, Section 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status wildlife species" and, as used in this report, include (1) wildlife species listed, proposed for listing, or candidates for listing as endangered or threatened recognized in the context of CESA and FESA (CDFW 2023e); (2) California Species of Special Concern (SSC) as designated by CDFW (2023g); and (3) mammals and birds that are fully protected species as described in the California Fish and Game Code, Sections 4700 and 3511 (CDFW 2023h).

The potential for special-status plant species to occur within the study area was assessed based on known geographic and elevation ranges as well as habitat and soil conditions that are known to support species occurring in the region. Potential for special-status wildlife species to occur within the study area was assessed based on known geographic ranges, the presence/absence of suitable habitat, and other natural history elements that might predict their occurrence. After completion of the reconnaissance surveys, the potential for special-status plant and wildlife species to occur on or near the project site was summarized according to the following categories. Because not all species are accommodated precisely by a given category (i.e., category definitions may be too restrictive), an expanded rationale for each category assignment is provided:

- Known to occur: the species has been documented on the property by a reliable source
- High potential to occur: the species has not been documented on the property but is known to recently occur in the vicinity and suitable habitat is present
- Moderate potential to occur: the species has not been documented on the property or in the vicinity, but the site is within the known range of the species and suitable habitat for the species is present
- Low potential to occur: the species has not been documented in the vicinity or on the property, but the site is within the known range of the species; however, suitable habitat for the species on site is of low quality
- Not expected to occur: the property is outside the known geographic or elevational range of the species and/or the site does not support suitable habitat for the species

## 3.3 Resource Mapping

Dudek biologist Tracy Park conducted a general biological reconnaissance survey for the proposed project between late February and early March of 2023 (Table 2, Biological Surveys Conducted for the Project), which included mapping of existing vegetation communities and land covers, identification of commonly occurring plant or wildlife species as well as those protected under FESA and CESA if present, an evaluation of the likelihood of occurrence of any special-status plant or wildlife species, and an evaluation of aquatic resources potentially regulated under the CWA, Porter–Cologne Act, or California Fish and Game Code. Dudek also conducted a focused special-status plant survey in early May 2023 (Table 2). Methods for the focused survey are further detailed in Section 3.3.5.

**Table 2. Biological Surveys Conducted for the Project**

| Survey Type | Date | Hours | Conditions |
|---|---|---|---|
| General Biological Reconnaissance | 2/21/2023 | 10:11 AM–4:03 PM | 57–60°F; 90–100% cc; 2–7 mph wind |
| | 3/3/2023 | 12:17 PM–4:01 PM | 60–61°F; 0% cc; 1–4 mph wind |
| | 3/6/2023 | 8:31 AM–4:31 PM | 37–43°F; 10–90% cc; 4–9 mph wind |
| | 3/7/2023 | 8:00 AM–6:08 PM | 39–40°F; 0% cc; 1–9 mph wind |

**Table 2. Biological Surveys Conducted for the Project**

| Survey Type | Date | Hours | Conditions |
|---|---|---|---|
| | 3/9/2023 | 2:31 PM–5:33 PM | 59–63°F; 30–40% cc; 1–8 mph wind |
| Focused Special–Status Plant Survey and Desert Native Plant Mapping | 5/9/2023 | 9:17 AM–6:17 PM | 55–64°F; 0–40% cc; 2–15 mph wind |
| | 5/10/2023 | 9:33 AM–3:21 PM | 52–66°F; 0–30% cc; 1–13 mph wind |
| | 5/11/2023 | 9:30 AM–5:06 PM | 63–70°F; 0% cc; 0–3 mph wind |

Notes: °F = degrees Fahrenheit; cc = cloud cover; mph = miles per hour.

### 3.3.1 Vegetation Community and Land Cover Mapping

Vegetation communities and land uses within the BSA were mapped in the field using the Environmental Systems Research Institute (Esri) Field Maps, a mobile data collection application, on a digital aerial-based background (Esri 2023). Following completion of the fieldwork, all vegetation linework was finalized using Esri ArcGIS software and geographic information system (GIS) coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover type within the BSA was determined. Where feasible, vegetation communities within the BSA were mapped using CDFW's List of Vegetation Alliances and Associations (or California Natural Community List) (CDFW 2023c), which is based on A Manual of California Vegetation, Second Edition (Sawyer et al. 2009) and A Manual of California Vegetation, Online Edition (CNPS 2023b), with modifications made to accommodate the lack of conformity of the observed communities (e.g., developed/disturbed land cover types) using Oberbauer et al. (2008) and Jones and Stokes (1993). Vegetation communities were classified based on site factors, descriptions, distribution, and characteristic species present within an area. Each natural community was mapped to the association level, where feasible. Special-status vegetation communities are those communities identified as high priority for inventory in the California Natural Communities List (CDFW 2023c) by a state rarity ranking of S1, S2, or S3.

### 3.3.2 Plants

All plant species encountered during the field surveys were identified and recorded. Latin and common names for plant species with a CRPR follow the CNPS Inventory (CNPS 2023a). For plant species without a CRPR, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2023), and common names follow the USDA NRCS Plants Database (USDA 2023b). Potential for special-status plant species to occur within the BSA was assessed based on known geographic and elevation ranges as well as habitat and soil conditions that are known to support species occurring in the region.

### 3.3.3 Wildlife

All wildlife species, as detected during the field survey—by sight, calls, tracks, scat, or other signs—were identified and recorded. Binoculars were used to aid in the identification of observed wildlife. No trapping or focused surveys for special-status wildlife species or nocturnal species were conducted. In addition to species observed, expected wildlife usage of the BSA was determined according to known habitat preferences of regional wildlife species and knowledge of their relative distributions in the area. Latin and common names for wildlife species referred to in this report follow Crother (2017) for reptiles and amphibians, American Ornithologists' Union (AOU) Checklist (AOU 2023) for birds, Wilson and Reeder (2005) for mammals, and Moyle (2002) for fish. Potential for special-status

wildlife species to occur within the BSA was assessed based on known geographic ranges, the presence/absence of suitable habitat, and other natural history elements that might predict their occurrence.

### 3.3.4 Jurisdictional Delineation

A formal wetlands delineation following the methodology described in USACE's A Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States (USACE 2008a), Wetlands Delineation Manual (USACE 1987), and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008b) was conducted by Psomas, wherein the BSA was evaluated for the potential to support jurisdictional aquatic resources regulated under the federal Clean Water Act, California Fish and Game Code, and Porter-Cologne Water Quality Act. Field methods, results and assumptions are described in detail in the Jurisdictional Waters Assessment prepared by Psomas in 2024, Appendix F.

### 3.3.5 Special-Status Plant Surveys

Based on the literature review discussed in Section 3.1 and results of the reconnaissance-level field survey conducted in late February and early March of 2023, 17 special-status species were preliminarily determined to have potential to occur within the BSA based on known species distribution, species-specific habitat preferences, and habitat conditions on site: Lancaster milk-vetch (*Astragalus preussii* var. *laxiflorus*), slender mariposa lily (*Calochortus clavatus* var. *gracilis*), alkali mariposa-lily (*Calochortus striatus*), San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*), Parry's spineflower (*Chorizanthe parryi* var. *parryi*), slender-horned spineflower (*Dodecahema leptoceras*), Blochman's dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*), many-stemmed dudleya (*Dudleya multicaulis*), mesa Horkelia (*Horkelia cuneata* var. *puberula*), sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*), Peirson's lupine (*Lupinus peirsonii*), white-veined monardella (*Monardella hypoleuca* ssp. hypoleuca), Piute Mountains navarretia (*Navarretia setiloba*), Robbin's nemacladus (*Nemacladus secundiflorus* var. *robbinsii*), southern jewelflower (*Streptanthus campestris*), Mason's neststraw (*Stylocline masonii*), and western Joshua tree. Therefore, focused surveys were conducted for these target species on May 9 through 11, 2023 within the blooming period range for these species. In addition, desert native plants, in accordance with the California Desert Native Plants Act, were also considered target species.

Surveys for special-status species were conducted by walking meandering transects throughout the entire project site, where accessible. Focused special-status plant surveys conformed to CNPS Botanical Survey Guidelines (CNPS 2001), Protocols for Surveying and Evaluating Impacts to Special Status Native Populations and Natural Communities (CDFW 2018), and USFWS General Rare Plant Survey Guidelines (Cypher 2002). All plant species encountered during the field surveys were identified to subspecies or variety, if applicable, to determine sensitivity status. Moreover, all plant species encountered in the field were recorded.

### 3.3.6 Desert Native Plant Survey

A desert native plant mapping survey within the BSA was conducted concurrently with the special-status plant survey and in accordance with the California Desert Native Plants Act. All of the desert native plant target species are conspicuous shrubs that would have been identifiable during the survey. In accordance with the California Desert Native Plants Act, Chapter 3, the following desert native plants were considered target species:

- All species of the family *Agavaceae* (century plants, nolinas, yuccas).

- All species of the family *Cactaceae* (cacti), except for the plants listed in subdivisions (b) and (c) of Section 80072 which may be harvested under a permit obtained pursuant to that section.
- All species of the family *Fouquieriaceae* (ocotillo, candlewood).
- All species of the genus *Prosopis* (mesquites).
- All species of the genus *Cercidium* (palos verdes).
- *Acacia greggii* (catclaw).
- *Atriplex hymenelytra* (desert-holly).
- *Psorothamnus spinosa* (smoke tree).
- *Olneya tesota* (desert ironwood), including both dead and live desert ironwood.

### 3.3.7 Survey Limitations

Binocular surveys were conducted in areas outside of the project site due to trespassing concerns. Additional potential limitations of the field survey include a diurnal bias for most wildlife species and the absence of focused trapping for mammals and reptiles since trapping is generally only performed for select listed species. Surveys were conducted mostly during the daytime to maximize visibility and detection of plants and most animals. As such, birds represent the largest component of vertebrate fauna recorded during the surveys, as they are usually most active during daytime hours. In contrast, daytime surveys usually result in few observations of mammals, many of which may only be active at night, particularly rodent and bat species. Therefore, identification of mammals primarily relied on detection of surface sign such as scat, burrows, and tracks. Many species of reptiles and amphibians are similarly nocturnal and/or secretive in their habits and are difficult to observe using standard meandering transects. However, despite these limitations, the survey work conducted in the BSA provides an adequate overall assessment of floral and faunal resources for purposes of evaluating potential biological constraints.

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# 4 Environmental Setting

## 4.1 Land Use

The proposed project is located within an established transmission corridor, an LADWP ROW, consisting of LADWP fee-owned land. The land uses surrounding proposed work locations are primarily comprised of open space and some areas with public utility facilities, residential development, and agricultural uses.

## 4.2 Climate

The proposed project is scattered along the Adelanto-Rinaldi Line 1 transmission line, extending between the San Fernando Valley of the City of Los Angeles and the southern extent of the Antelope Valley. The closest and furthest work locations range between 18 and 45 miles from the Pacific Ocean. The project region has a Mediterranean climate with cool, wet winters and warm, dry summers. July and August are the average warmest month with average high temperatures between 92°F and 97°F at nearby weather stations between the San Fernando Valley and the town of Pear Blossom. December and January are the coolest months with average low temperatures between 56°F and 66°F at nearby stations (Western Regional Climate Center [WRCC] 2023). Significant rainfall occurs primarily between October and April, with the maximum average precipitation occurring in January and/or February. According to the WRCC, the mean annual rainfall is 17.66 inches of rain per year for the work areas nearest to the coast in the San Fernando Valley, and 6.94 inches of rain per year for the most inland work areas near Pear Blossom, California (WRCC 2023).

## 4.3 Terrain

The proposed project occurs within the northern half of Los Angeles County, and generally straddles the Transverse Ranges through the Santa Clara River Valley, Soledad Canyon, and Sierra Pelona Mountains. The most southwestern work locations (Towers 76-5 and 77-1) are located within the San Fernando Valley in undulating, hilly terrain around the basin of LADWP's Van Norman Complex. The work locations within the Santa Clara River Valley (Tower Span 70-4 to 71-1, Tower Span 65-4 to 66-1, and Tower 61-2) are characterized by moderately steep slopes in hilly terrain. Work locations within Soledad Canyon and the Sierra Pelona Mountains (Tower 57-2, Tower Span 57-1 to 57-2, Tower 54-2, Tower Span 49-2 to 49-3, Tower 46-4, Tower 43-2, Tower Span 41-3 to 41-4, Tower Span 38-4 to 39-1, and Tower Span 38-1 to 38-2) range in moderate to very steep slopes set in mountainous terrain. In the portion of the project that occurs along the southern extent of the Antelope Valley (Tower Span 35-2 to 35-3, Tower Span 33-2 to 33-3, and Tower 32-4), the terrain is generally gently sloping with a few scattered hills. Elevations within the proposed project footprint range from approximately 1,155 above mean sea level (amsl) at the Van Norman Complex to approximately 4,270 amsl in the Sierra Pelona portion of the transmission line.

## 4.4 Soils

The USDA NRCS Web Soil Survey (USDA 2023a) has mapped 23 soil mapping unit types within the BSA as listed below in Table 3, Soils within the Biological Study Area. The spatial distribution of these soils across the BSA are presented in Figures 2A through 2Q, Soils.

### Table 3. Soils within the Biological Study Area

| Soil Mapping Unit |
|---|
| Amargosa rocky coarse sandy loam, 9% to 55% slopes, eroded |
| Anaverde loam, 15% to 30% slopes |
| Anaverde rocky loam, 30% to 50% slopes |
| Cajon loamy sand, 2% to 9% slopes |
| Calcixerollic Xerochrepts-Calleguas family-Modesto family, moderately deep complex, 30% to 60% slopes |
| Castaic-Balcom silty clay loams, 30% to 50% slopes |
| Castaic-Balcom silty clay loams, 30% to 50% slopes, eroded |
| Dam |
| Debris basin |
| Godde rocky loam, 30% to 50% slopes |
| Hanford sandy loam, 2% to 9% slopes |
| Las Posas loam, 9% to 30% slopes |
| Las Posas-Toomes rocky loams, 30% to 50% slopes |
| Ojai loam, 2% to 9% slopes |
| Ojai loam, 15% to 30% slopes |
| Ramona gravelly sandy loam, 2% to 9% slopes |
| Ramona gravelly sandy loam, 9% to 30% slopes |
| Ramona sandy loam, 9% to 30% slopes, eroded |
| Saugus loam, 30% to 50% slopes |
| Saugus loam, 30% to 50% slopes, eroded |
| Vista coarse sandy loam, 30% to 50% slopes |
| Water |
| Xerorthents, 0% to 30% slopes |

**Source:** USDA 2023a

Brief descriptions of the soil mapping unit types based on the USDA NRCS Web Soil Survey (2023a) are provided as follows:

- **Amargosa Series.** This soil series consists of excessively drained soils formed in weathered granite. Amargosa soils in the region are typically found on steep hilly and mountainous areas at elevations between 2,600 and 3,500 feet amsl. Uncultivated vegetation is primarily comprised of scattered California juniper (*Juniperus californica*), manzanita (*Arctostaphylos* spp.), and annual grasses. The BSA includes eroded Amargosa rocky coarse sandy loam with 9% to 55% slopes.
- **Anaverde Series.** This soil series consists of well drained soils formed in weather schist. Anaverde soils in the region are typically found on foothills and mountains at elevations ranging from 4,700 to 5,000 feet amsl. Vegetation in uncultivated areas is primarily comprised of oaks (*Quercus* spp.) and annual grasses. The BSA includes Anaverde loam with 15% to 30% slopes and Anaverde rocky loam with 30% to 50% slopes.

- **Cajon Series.** This soil series consists of excessively drained soils formed in granitic alluvium. Cajon soils in the region are typically found on alluvial fans at elevations between 2,400 and 2,800 feet amsl. Natural vegetation is primarily made up of shrubs such as jointfir (*Ephedra* spp.), creosote bush (*Larrea tridentata*), sagebrush (*Artemisia* spp.), rabbitbrush (*Ericameria* spp.), annual grasses and forbs, scattered Joshua trees, with some perennial grasses such as Indian ricegrass (*Stipa hymenoides*) and other needle grass species (*Stipa* spp.). The BSA includes Cajon loamy sand with 2% to 9% slopes.
- **Calcixerollic Xerochrepts-Calleguas Family-Modesto Family Complex.** This soil complex is primarily composed of three major components. The Calcixerollic Xerochrepts series comprises 45% of this complex and consists of well drained soils formed in materials weathered from soft, calcareous shale and sandstone. Regionally, these soils are found in mountain slopes and ridges. The Calleguas series comprises 20% of this complex and consists of very shallow or shallow, well drained soils formed in material weathered from sedimentary rocks. Regionally, these soils are also found on mountainsides and ridges. The Modesto series comprises 15% of this complex and consists of deep, well drained, soils formed in weathered schist, gneiss, granitic rock, and partly consolidated old alluvial sediments. Modesto soils in the region are typically found on mountainsides, ridges, and remnants of alluvial fans or stream terraces. This soil complex is found at elevations between 1,500 and 2,200 feet amsl. Uncultivated vegetation is typically made up of chamise (*Adenostoma fasciculatum*). The BSA includes the moderately deep Calcixerollic Xerochrepts-Calleguas family-Modesto family complex with 30% to 60% slopes.
- **Castaic-Balcom Complex.** This soil complex is primarily composed of two major components. The Castaic series comprises 50% of this complex and consists of well drained soils formed in material weathered from shale and sandstone. The Balcom series comprises 40% of this complex and consists of well drained soils that formed in weathered soft, calcareous shale and sandstone. Regionally, this soil complex is found on uplands in general at elevations between 1,250 and 1,500 feet amsl. Vegetation where uncultivated is mainly made up of annual grasses and forbs, with a few small patches of needle grass and shrubs. The BSA includes Castaic-Balcom silty clay loams with 15% to 30% slopes and eroded Castaic-Balcom silty clay loams with 30% to 50% slopes.
- **Dam.** This is a mapping unit that describes areas covered by artificial dam structures, therefore lacking soils at surface level.
- **Debris Basin.** This is a mapping unit that describes areas covered by artificial debris basin structures, therefore lacking soils at surface level.
- **Godde Series.** This soil series consists of well drained soils formed weathered hard schist. The Godde soils are found in mountainous areas at elevations ranging between 4,200 and 5,000 feet amsl. Uncultivated vegetation is primarily made up of annual grasses and forbs, California buckwheat (*Eriogonum fasciculatum*), and scattered California juniper. The BSA includes Godde rocky loam with 30% to 50% slopes.
- **Hanford Series.** This soil series consists of very deep, well drained soils formed in granitic alluvium and other quartz-bearing rocks of similar texture. Hanford soils are found on alluvial fans at elevations ranging between 2,600 and 3,500 feet amsl. Vegetation in uncultivated areas is mainly made up of annual grasses and forbs with some scattered California juniper. The BSA includes Hanford sandy loam with 2% to 9% slopes.
- **Las Posas Series.** This soil series consists of deep, well drained soils formed in weathered igneous rock. Las Posas soils are found on mountainous uplands at elevations between 200 and 3,000 feet amsl. Natural vegetation is typically made up of chaparral, annual grasses, and annual forbs. The BSA includes Las Posas loam with 9% to 30% slopes.

- **Las Posas-Toomes Complex**. This soil complex is composed primarily of two major components. The Las Posas series comprises 55% of this complex and is described in the series above. The Toomes soil series comprises 30% of this complex and consists of somewhat excessively drained soils that formed in weathered basalt. Toomes soils are found on uplands at elevations between 2,600 and 3,500 feet amsl. Uncultivated vegetation is primarily made up of annual grasses and forbs; however, California juniper and chaparral yucca (*Hesperoyucca whipplei*) can grow in some areas. The BSA includes Las Posas-Toomes rocky loams with 30% to 50% slopes.
- **Ojai Series.** This soil series consists of well drained soils formed in weakly consolidated sedimentary alluvial material containing mixed, weathered pebbles and cobblestones. Ojai soils in the region are found on terraces and foothills at elevations of 1,300 to 2,200 feet amsl. Vegetation in uncultivated areas is primarily composed of annual grasses and oaks, but also include some chamise and manzanita in the foothills. The BSA includes Ojai loam with 2% to 9% slopes and Ojai loam with 15% to 30% slopes.
- **Ramona Series.** This soil series consists of well drained soils formed in granitic alluvium as well as those of similar rock sources. Ramona soils are found on terraces and fans at elevations of 250 to 3,500 feet amsl. Natural vegetation is typically made up of chaparral with annual grasses and forbs. The BSA includes Ramona gravelly sandy loam with 2% to 9% slopes; Ramona gravelly sandy loam, 9% to 30% slopes; and eroded Ramona sandy loam with 9% to 30% slopes.
- **Saugus Series.** This soil series consists of deep, well drained soils that formed in weathered granite and closely related rocks. Saugus soils are found on slopes of terraces and foothills at elevations of 600 to 2,500 feet amsl. Uncultivated vegetation is typically made up of chamise, other associated shrubs, annual grasses and forbs, and sometimes small patches of perennial grasses. The BSA includes Saugus loam soils with 30% to 50% slopes and eroded Saugus loam soils 30% to 50% slopes.
- **Vista Series.** This soil series consists of well drained soils that formed in weathered granitic rock. Vista soils in the region are found on hilly and mountainous uplands at elevations of 2,200 to 3,900 feet amsl. Vegetation in uncultivated areas is primarily made up of annual grasses and forbs, with some stands of manzanita and few scattered chamise and California juniper. The BSA includes Vista coarse sandy loam with 30% to 50% slopes.
- **Water.** This is a mapping unit that describes areas covered by surface water, therefore lacking soils at surface level.
- **Xerorthents.** This soil type consists of somewhat excessively drained soils formed in weathered metamorphic and granitic rocks. Xerorthents are found on mountainsides and colluvial slopes at elevations between 2,100 and 9,400 feet amsl. Natural vegetation is composed of a variety of chaparral species and annual grasses. The BSA contains Xerorthents with 0% to 30% slopes.

# 5 Results

## 5.1 Vegetation Communities and Land Covers

A total of 30 vegetation communities and land cover types occur within the BSA (i.e., a 100-foot buffer from the project work location footprint) based on general physiognomy and species composition. The BSA consists of seven grass and herb dominated communities, eleven scrub communities, six chaparral communities, and three woodland communities, and three unvegetated or developed land covers. These vegetation communities and land cover types are described below, their acreages are presented in Table 4, and their spatial distributions are presented in Figures 3A through 3Q, Biological Resources.

Photos of each work location are included in Appendix A. Potential impacts to riparian and/or sensitive vegetation communities are analyzed in Section 6.

**Table 4. Vegetation Communities and Land Covers in the Biological Study Area**

| Common Name | Alliance[1] | Association | Ranking[2] (Global/State) | Project Site (Acres) | Biological Study Area (Acres) |
|---|---|---|---|---|---|
| **Grass and Herb Dominated** | | | | | |
| Wild Oats and Annual Brome Grasslands | *Avena* spp.–*Bromus* spp. Herbaceous Semi-Natural Alliance | *Avena barbata*–*Avena fatua* Association | NA | 0.68 | 2.66 |
| | | *Avena barbata*–*Bromus hordeaceus* Association | NA | 0.00 | 0.17 |
| | | *Bromus hordeaceus*–*Amsinckia menziesii*–*Hordeum murinum* Association | NA | <0.01 | 0.09 |
| Upland Mustards or Star-Thistle Fields | *Brassica nigra*–*Centaurea* (*solstitialis, melitensis*) Herbaceous Semi-Natural Alliance | *Centaurea solstitialis* Association | NA | <0.01 | 0.28 |
| Red Brome or Mediterranean Grass Grasslands | *Bromus rubens*–*Schismus (arabicus, barbatus)* Herbaceous Semi-Natural Alliance | *Bromus rubens*–mixed herbs Association | NA | 0.25 | 0.86 |
| Fiddleneck–Phacelia Fields | *Amsinckia* (*menziesii, tessellata*)–*Phacelia* spp. Herbaceous Alliance | *Amsinckia menziesii*–*Erodium* spp. Association | G5S5 | 0.05 | 0.81 |
| | | *Phacelia tanacetifolia* Association | GNR SNR Sensitive | <0.01 | 0.37 |
| | | *Total Grass and Herb Dominated Vegetation[3]* | | *0.99* | *5.24* |

## Table 4. Vegetation Communities and Land Covers in the Biological Study Area

| Common Name | Alliance[1] | Association | Ranking[2] (Global/State) | Project Site (Acres) | Biological Study Area (Acres) |
|---|---|---|---|---|---|
| **Scrub Communities** | | | | | |
| Brittle Bush Scrub | *Encelia farinosa* Shrubland Alliance | *Encelia farinosa* Association | G5S4 | 0.77 | 2.36 |
| California Buckwheat Scrub | *Eriogonum fasciculatum* Shrubland Alliance | *Eriogonum fasciculatum* Association | G5S5 | 0.57 | 2.28 |
| | | *Eriogonum fasciculatum–Encelia farinosa* Association | G5S5 | 0.18 | 0.97 |
| | | *Eriogonum fasciculatum* var. *foliolosum–Hesperoyucca whipplei* Association | G5S5 | 0.00 | 0.19 |
| California Sagebrush–(Purple Sage) Scrub | *Artemisia californica–*(*Salvia leucophylla*) Shrubland Alliance | *Artemisia californica* Association | G4S4 | 0.56 | 1.46 |
| | | *Artemisia californica–Eriogonum fasciculatum* Association | G4S4 | 0.01 | 0.73 |
| Cheesebush–Sweetbush Scrub | *Ambrosia salsola–Bebbia juncea* Shrubland Alliance | *Ambrosia salsola–Larrea tridentata* Association | G4S4 | 0.30 | 1.40 |
| Fourwing Saltbush Scrub | *Atriplex canescens* Shrubland Alliance | *Atriplex canescens* Association | G5S4 | 0.93 | 3.62 |
| Narrowleaf Goldenbush–Bladderpod Scrub | *Ericameria linearifolia–Cleome isomeris* Shrubland Alliance | *Ericameria linearifolia* Association | GNR SNR Sensitive | 0.54 | 2.51 |
| Nevada Joint Fir–Anderson's Boxthorn–Spiny Hop Sage Scrub | *Ephedra nevadensis–Lycium andersonii–Grayia spinosa* Shrubland Alliance | *Ephedra nevadensis–*(*Salazaria mexicana–Ambrosia salsola*) Association | G5S4 | 1.89 | 6.89 |
| Desert Almond–Mexican Bladdersage Scrub | *Prunus fasciculata–Salazaria mexicana* Shrubland Alliance | *Salazaria mexicana* Association | GNR SNR Sensitive | 0.23 | 0.65 |
| | | | *Total Scrub Vegetation[3]* | *5.97* | *23.05* |
| **Chaparral Communities** | | | | | |
| Chamise–Sage Chaparral | *Adenostoma fasciculatum–Salvia* spp. Shrubland Alliance | *Adenostoma fasciculatum–Salvia mellifera* Association | G4S4 | 0.33 | 1.85 |

## Table 4. Vegetation Communities and Land Covers in the Biological Study Area

| Common Name | Alliance[1] | Association | Ranking[2] (Global/State) | Project Site (Acres) | Biological Study Area (Acres) |
|---|---|---|---|---|---|
| Chamise Chaparral | *Adenostoma fasciculatum* Shrubland Alliance | *Adenostoma fasciculatum* Association | G5S5 | 1.93 | 5.97 |
| | | *Adenostoma fasciculatum–Eriogonum fasciculatum* Association | G4S4 | 0.64 | 3.31 |
| Tucker Oak Chaparral | *Quercus john–tuckeri* Shrubland Alliance | *Quercus john–tuckeri* Association | G4S4 | 0.44 | 2.18 |
| Wedge Leaf Ceanothus Chaparral | *Ceanothus cuneatus* Shrubland Alliance | *Ceanothus cuneatus* Association | G4S4 | 0.00 | 0.02 |
| | | *Ceanothus cuneatus–Adenostoma fasciculatum* Association | G4S4 | 0.21 | 0.80 |
| | | | *Total Chaparral Vegetation*[3] | *3.55* | *14.13* |
| **Woodland Communities** | | | | | |
| California Juniper Woodland | *Juniperus californica* Woodland Alliance | *Juniperus californica/Eriogonum fasciculatum–Artemisia californica* Association | G4S4 | 0.13 | 0.62 |
| | | *Juniperus californica*/herbaceous Association | GNR SNR Sensitive | 0.00 | 0.34 |
| Joshua Tree Woodland | *Yucca brevifolia* Woodland Alliance | *NA* | G4S3 | 0.16 | 0.98 |
| | | | *Total Woodland Vegetation*[3] | *0.29* | *1.94* |
| **Unvegetated and Developed Land Cover Types** | | | | | |
| Disturbed Habitat | NA | NA | NA | 1.63 | 5.59 |
| Open Water | NA | NA | NA | 0.00 | <0.01 |
| Urban/Developed | NA | NA | NA | 0.06 | 2.15 |
| | | | *Total Unvegetated and Developed Land Cover Types*[3] | *1.69* | *7.74* |
| | | | **Total**[3] | **12.48** | **52.10** |

**Notes:** NA = not applicable.

1 The term "semi-natural" is used in the Manual of California Vegetation to indicate vegetation types dominated by non-native plants (Sawyer et al. 2009).

2 The conservation status of a vegetation community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = global, N = national, and S = subnational). The numbers have the following meaning (NatureServe 2023): 1 = critically imperiled; 2 = imperiled; 3 = vulnerable to extirpation or extinction; 4 = apparently secure; 5 = demonstrably widespread, abundant, and secure. A ranking 1 through 3 is generally considered sensitive unless otherwise indicated in the CDFW Natural Communities List (CDFW 2023c).

3 Subtotals may not sum to total due to rounding.

## 5.1.1 Grass and Herb Dominated Communities

### Wild Oats and Annual Brome Grasslands

Wild oats and annual brome grassland features slender oat (*Avena barbata*), wild oat (*Avena fatua*), purple false brome (*Brachypodium distachyon*), big quakinggrass (*Briza maxima*), ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), and/or mouse barley (*Hordeum murinum*) as the dominant species in the herbaceous layer with other species such as Australian saltbush (*Atriplex semibaccata*) and barleys (*Hordeum* spp.). These communities occur in a wide variety of settings, but most typically in foothills, disturbed areas, rangelands, and openings in woodlands. (CNPS 2023b). Four associations within the alliance were identified in the BSA: *Avena barbata–Avena fatua* association, *Avena barbata–Bromus hordeaceus* association, *Bromus diandrus–Avena* spp. association, *Bromus hordeaceus–Amsinckia menziesii–Hordeum murinum* association.

### Upland Mustards or Star-Thistle Fields

Upland mustards or star-thistle fields feature black mustard (*Brassica nigra*), field mustard (*Brassica rapa*), Italian plumeless thistle (*Carduus pycnocephalus*), Maltese star-thistle (*Centaurea melitensis*), yellow star-thistle (*Centaurea solstitialis*), cardoon (*Cynara cardunculus*), Geraldton carnation weed (*Euphorbia terracina*), shortpod mustard (*Hirschfeldia incana*), Dyer's woad (*Isatis tinctoria*), or cultivated radish (*Raphanus sativus*), among other similar ruderal forbs, as the dominant species in the herbaceous layer. These communities typically occur in fallow fields, rangelands, grasslands, roadsides, levee slopes, disturbed coastal scrub, disturbed riparian areas, and generally within disturbed areas (CNPS 2023b). One association within the alliance, *Centaurea solstitialis* association, was identified in the BSA.

### Red Brome or Mediterranean Grass Grasslands

Red brome or Mediterranean grass grasslands feature red brome (*Bromus rubens*), Arabian Mediterranean grass (*Schismus arabicus*), and/or common Mediterranean grass (*Schismus barbatus*), among other non-native herbaceous plant species, as the dominant species in the herbaceous layer. These communities occur in all types of topographical settings and soil textures (CNPS 2023b). One association within the alliance, *Bromus rubens*–mixed herbs association, was identified in the BSA.

### Fiddleneck–Phacelia Fields

Fiddleneck–phacelia fields feature Menzies' fiddleneck (*Amsinckia menziesii*), bristly fiddleneck (*Amsinckia tessellata*), phacelias (*Phacelia* spp.), and/or other fiddleneck species (*Amsinckia* spp.) as the seasonally dominant species with other herbaceous forbs and grasses. These communities typically occur in well-drained, loamy soils on upland slopes, broad valleys, ocean bluffs, grazed or recently burned hills, or fallow fields that often have high levels of bioturbation (CNPS 2023b). Two associations within the alliance were identified in the BSA: *Amsinckia menziesii–Erodium* spp. association and *Phacelia tanacetifolia* association.

## 5.1.2 Scrub Communities

### Brittle Bush Scrub

Brittle bush scrub features brittle bush (*Encelia farinosa*) as the dominant species in the shrub canopy, and can include desert agave (*Agave deserti*), white bursage (*Ambrosia dumosa*), California sagebrush (*Artemisia californica*), teddy bear cholla (*Cylindropuntia bigelovii*), Engelmann's hedgehog cactus (*Echinocereus engelmannii*), thick leaf yerba santa (*Eriodictyon crassifolium*), California buckwheat, California barrel cactus (*Ferocactus cylindraceus*), chaparral yucca, desert wishbone-bush (*Mirabilis laevis*), and white sage (*Salvia apiana*) (CNPS 2023b). These communities typically occur in well-drained, rocky soils on alluvial fans, loose unconsolidated sediments, rocky hillsides, and/or slopes of small washes and rills (CNPS 2023b). One association within this alliance, *Encelia farinosa* association, was identified in the BSA.

### California Buckwheat Scrub

California buckwheat scrub features California buckwheat and/or chaparral yucca as the dominant species in the shrub canopy, and can include California sagebrush, coyote brush (*Baccharis pilularis*), bush monkeyflower (*Diplacus aurantiacus*), California brittle bush (*Encelia californica*), brittle bush, Menzies' goldenbush (*Isocoma menziesii*), deer weed (*Acmispon glaber*), bush mallow (*Malacothamnus fasciculatus*), white sage, or black sage (*Salvia mellifera*) (CNPS 2023b). These communities typically occur in well-drained, coarse soils on upland slopes, intermittently flooded arroyos, channels, and washes (CNPS 2023b). Three associations within this alliance were identified in the BSA: *Eriogonum fasciculatum* association, *Eriogonum fasciculatum–Encelia farinosa* association, and *Eriogonum fasciculatum* var. *foliolosum–Hesperoyucca whipplei* association.

### California Sagebrush–(Purple Sage) Scrub

California sagebrush–(purple sage) scrub features California sagebrush and/or purple sage (*Salvia leucophylla*) as the dominant species in the shrub canopy, and can include chamise, coyote brush, bladderpod (*Peritoma arborea*), bush monkeyflower, California brittle bush, brittle bush, California joint fir (*Ephedra californica*), narrowleaf goldenbush (*Ericameria linearifolia*), ashy buckwheat (*Eriogonum cinereum*), California buckwheat, golden-yarrow (*Eriophyllum confertiflorum*), chaparral yucca, Menzies' goldenbush, heartleaf keckiella (*Keckiella cordifolia*), southern honeysuckle (*Lonicera subspicata*), deer weed, laurel sumac (*Malosma laurina*), coast prickly pear (*Opuntia littoralis*), hollyleaf redberry (*Rhamnus ilicifolia*), lemonade berry (*Rhus integrifolia*), sugar bush (*Rhus ovata*), white sage, black sage, and poison oak (*Toxicodendron diversilobum*) (CNPS 2023b). These communities typically occur in alluvial or colluvial soils on steep and rarely flooded slopes near low-gradient deposits along streams (CNPS 2023b). Two associations within this alliance were identified in the BSA: *Artemisia californica* association and *Artemisia californica–Eriogonum fasciculatum* association.

### Cheesebush–Sweetbush Scrub

Cheesebush–sweetbush scrub features cheesebush (*Ambrosia salsola*), sweetbush (*Bebbia juncea*), woolly brickellbush (*Brickellia incana*), and/or desertsenna (*Senna armata*) as the dominant species in the shrub canopy, and can include Wiggins' cholla (*Cylindropuntia echinocarpa*), brittle bush, California joint fir, black-stem rabbitbrush (*Ericameria paniculata*), California buckwheat, threadleaf snakeweed (*Gutierrezia microcephala*), white ratany (*Krameria bicolor*), creosote bush, beavertail pricklypear (*Opuntia basilaris*), Thurber's sandpaper plant (*Petalonyx thurberi*), Mexican bladdersage (*Scutellaria mexicana*), Dorr's sage (*Salvia dorrii*), and desert

globemallow (*Sphaeralcea ambigua*) (CNPS 2023b). These communities typically occur on disturbed desert pavement or alluvial, sandy and gravelly soil in intermittently flooded channels, washes, valleys, flats, and rarely flooded low-gradient deposits (CNPS 2023b). One association within this alliance, *Ambrosia salsola–Larrea tridentata* association, was identified in the BSA.

### Fourwing Saltbush Scrub

Fourwing saltbush scrub features fourwing saltbush (*Atriplex canescens*) as the dominant species in the shrub canopy, and can include white bursage, cheesebush, shadscale, allscale, yellow rabbitbrush (*Chrysothamnus viscidiflorus*), bladderpod, mormon tea (*Ephedra viridis*), spiny hop sage (*Grayia spinosa*), creosote bush, and bush seepweed (*Suaeda nigra*) (CNPS 2023b). These communities typically occur in carbonate rich, alkaline, sandy or sandy clay loam soils on playas, lake deposits, dissected alluvial fans, rolling hills, or channel beds (CNPS 2023b). One association within this alliance, *Atriplex canescens* association, was identified in the BSA.

### Narrowleaf Goldenbush–Bladderpod Scrub

Narrowleaf goldenbush–bladderpod scrub features bladderpod, yellow aster (*Eastwoodiae elegans*), and/or narrowleaf goldenbush as the dominant species in the shrub canopy, and can include California joint fir, rubber rabbitbrush (*Ericameria nauseosa*), California buckwheat, golden-yarrow, and winterfat (*Krascheninnikovia lanata*) (CNPS 2023b). These communities typically occur in sometimes alkaline, shallow soils on dry slopes and ridges (CNPS 2023b). One association within this alliance, *Ericameria linearifolia* association, was identified in the BSA.

### Nevada Joint Fir–Anderson's Boxthorn–Spiny Hop Sage Scrub

Nevada joint fir–Anderson's boxthorn–spiny hop sage scrub features Nevada joint fir, spiny hop sage, Anderson's boxthorn, and/or peach thorn (*Lycium cooperi*) as the dominant species in the shrub canopy, and can include rayless goldenhead, cheesebush, big sagebrush (*Artemisia tridentata*), shadscale, yellow rabbitbrush, black brush (*Coleogyne ramosissima*), Cooper's goldenbush (*Ericameria cooperi*), California buckwheat, spiny menodora (*Menodora spinescens*), bud sagebrush (*Artemisia spinescens*), and Mexican bladdersage (CNPS 2023b). These communities typically occur in sometimes alkaline or saline gravelly and rocky soils on dry, open slopes, ridges, highlands, canyons, sides of arroyos, bajadas, floodplains, valleys, and washes (CNPS 2023b). One association within this alliance, *Ephedra nevadensis*–(*Salazaria mexicana–Ambrosia salsola*) association, was identified in the BSA.

### Desert Almond–Mexican Bladdersage Scrub

Desert almond–Mexican bladdersage scrub features desert almond (*Prunus fasciculata*), Mexican bladdersage, and/or Dorr's sage as the dominant species in the shrub canopy, and can include woolly fruit bur ragweed (*Ambrosia eriocentra*), cheesebush, shadscale, Wiggins' cholla, Nevada jointfir, California buckwheat, spiny hop sage, bush penstemon (*Keckiella antirrhinoides*), winterfat, creosote bush, Anderson's boxthorn, Utah mortonia (*Mortonia utahensis*), tulip pricklypear (*Opuntia phaeacantha*), Mojave Desert plum (*Prunus eremophila*), skunkbush sumac (*Rhus aromatica*), Mojave sage (*Salvia mohavensis*), catclaw acacia (*Senegalia greggii*), and Mojave yucca (CNPS 2023b). These communities typically occur in alluvial or colluvial calcareous, volcanic, and granitic soils in arroyos, canyons, washes, and disturbed upland area (CNPS 2023b). One association within this alliance, *Salazaria mexicana* association, was identified in the BSA.

## 5.1.3 Chaparral Communities

### Chamise–Sage Chaparral

Chamise–sage chaparral features chamise, white sage, and/or black sage as the dominant species in the shrub canopy, and can include manzanitas, California sagebrush, ceanothus (*Ceanothus* spp.), brittle bush, yerba santa (*Eriodictyon* spp.), California buckwheat, chaparral yucca, deer weed, laurel sumac, inland scrub oak (*Quercus berberidifolia*), hollyleaf redberry, sugar bush, and mission manzanita (*Xylococcus bicolor*) (CNPS 2023b). This community typically occurs in shallow loamy sand or sandy loam on slopes of all aspects, particularly south- to east-facing slopes (CNPS 2023b). One association within this alliance, *Adenostoma fasciculatum–Salvia mellifera* association, was identified in the BSA.

### Chamise Chaparral

Chamise chaparral features chamise as the dominant species in the shrub canopy, and can include redshank (*Adenostoma sparsifolium*), Eastwood manzanita (*Arctostaphylos glandulosa*), common manzanita (*Arctostaphylos manzanita*), whiteleaf manzanita (*Arctostaphylos viscida*), ceanothus (*Ceanothus* spp.), bush monkeyflower, California yerba santa, California buckwheat, chaparral yucca, toyon (*Heteromeles arbutifolia*), inland scrub oak, interior live oak (*Quercus wislizeni*), white sage, purple sage, black sage, and poison oak (CNPS 2023b). This community typically occurs in shallow soils on all types of typography (CNPS 2023b). Two associations within this alliance were identified in the BSA: *Adenostoma fasciculatum* association and *Adenostoma fasciculatum–Eriogonum fasciculatum* association.

### Tucker Oak Chaparral

Tucker oak chaparral features Tucker oak (*Quercus john-tuckeri*) as the dominant species in the shrub canopy, and can include chamise, bigberry manzanita (*Arctostaphylos glauca*), wedge leaf ceanothus (*Ceanothus cuneatus*), birch leaf mountain mahogany, narrowleaf goldenbush, rubber rabbitbrush, California buckwheat, California ash, ashy silktassel (*Garrya flavescens*), California juniper, inland live oak, and creeping snowberry (*Symphoricarpos mollis*) (CNPS 2023b). This community typically occurs in well to extensively drained soils over bedrock or colluvium on upper slopes or tops of ridges (CNPS 2023b). One association within this alliance, *Quercus john–tuckeri* association, was identified in the BSA.

### Wedge Leaf Ceanothus Chaparral

Wedge leaf ceanothus chaparral features wedge leaf ceanothus (*Ceanothus cuneatus*) as the dominant species in the shrub canopy, and can include chamise, bigberry manzanita, common manzanita, green leaf manzanita (*Arctostaphylos patula*), woolly leaf manzanita (*Arctostaphylos tomentosa*), deer brush (*Ceanothus integerrimus*), birch leaf mountain mahogany, California buckwheat, bearbrush (*Garrya fremontii*), chaparral yucca, toyon, inland scrub oak, Tucker oak, sugar bush, and black sage (CNPS 2023b). This community typically occurs in shallow, well-drained rocky soils on ridges and upper slopes (CNPS 2023b). Two associations within this alliance were identified in the BSA: *Ceanothus cuneatus* association and *Ceanothus cuneatus–Adenostoma fasciculatum* association.

## 5.1.4 Woodland Communities

### California Juniper Woodland

California juniper woodland features California juniper as the dominant species in the tree canopy, and can include singleleaf pinyon (*Pinus monophyla*), Parry pinyon (*Pinus quadrifolia*), Muller oak (*Quercus cornelius-mulleri*), blue oak (*Quercus douglasii*), Joshua tree, desert agave, big sagebrush, black brush, jointfir, chaparral yucca, scale broom, Parry's beargrass (*Nolina parryi*), Stansbury cliff rose (*Purshia stansburiana*), and Mojave yucca (CNPS 2023b). This community typically occurs in very shallow, coarse soils on ridges, slopes, valleys, alluvial fans, and valley bottoms (CNPS 2023b). Two associations within this alliance were identified in the BSA: *Juniperus californica/Eriogonum fasciculatum–Artemisia californica* association and *Juniperus californica*/herbaceous association.

### Joshua Tree Woodland

Joshua tree woodland features Joshua tree as the dominant species in the tree canopy, and can include singleleaf pinyon (*Pinus monophyla*), Parry pinyon (*Pinus quadrifolia*), Muller oak, blue oak, Joshua tree, desert agave, big sagebrush, black brush, jointfir, chaparral yucca, scale broom, Parry's beargrass (*Nolina parryi*), Stansbury cliff rose (*Purshia stansburiana*), and Mojave yucca (CNPS 2023b). This community typically occurs in very shallow, coarse soils on ridges, slopes, valleys, alluvial fans, and valley bottoms (CNPS 2023b). This vegetation community was mapped to the alliance level due to a lack of associations with an appropriate co-dominant species assemblage description.

## 5.1.5 Unvegetated and Developed Land Cover Types

### Disturbed Habitat

Although not recognized by the Manual of California Vegetation, Online Edition (CNPS 2023b) or the Natural Communities List (CDFW 2023c), disturbed habitat is described in the Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008). Disturbed habitat is described as areas generally lacking vegetation due to high levels of existing or historical human disturbance and are no longer recognizable as a native or naturalized vegetation association. Areas mapped as disturbed habitat may include unpaved roads, trails, and graded areas (Oberbauer et al. 2008). Vegetation in these areas, if present at all, is usually sparse and dominated by non-native weedy herbaceous species (Oberbauer et al. 2008). Areas mapped as disturbed habitat are present throughout the BSA primarily as disturbed roadsides and existing graded roads and work areas.

### Open Water

Although not recognized by the Manual of California Vegetation, Online Edition (CNPS 2023b) or the Natural Communities List (CDFW 2023c), open water is described in the Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008). Open water is usually covered by water and contain less than 10% vegetative cover (Oberbauer et al. 2008).

### Urban/Developed

Although not recognized by the Manual of California Vegetation (CNPS 2023b) or the Natural Communities List (CDFW 2023c), the urban/developed mapping unit (or developed land) is described in Draft Vegetation Communities of San

Diego County (Oberbauer et al. 2008). This mapping unit is described areas supporting human-made structures, including homes, yards, sidewalks, and other highly modified lands supporting structures associated with dwellings or other permanent structures. Vegetation in these areas, if present at all, is typically associated with ornamental landscaping that has been included in the development footprint (Oberbauer et al. 2008). Most of the developed lands in the BSA are primarily comprised of paved roads and freeways, as well as buildings and paved areas associated with LADWP facilities.

## 5.2 Plants

A total of 210 plant species were observed onsite, 164 native and 46 non-native species. The majority of the BSA occurs in open space areas outside of dense urban development and is dispersed across a wide variety of ecotypes. As such, there was a high abundance and diversity of native plant species observed during the biological reconnaissance survey and focused special-status plant survey. A comprehensive list of species is available in Appendix B, Plant Compendium. Special-status plants that were observed within the BSA are listed below in Section 5.2.1.

### 5.2.1 Special-Status Plant Species Assessment

Fifty-seven plant species considered special-status in this report were returned in the query of the CNDDB and the CNPS Inventory for the seven subject USGS 7.5-minute quadrangles (i.e., Littlerock, Palmdale, Ritter Ridge, Sleepy Valley, Agua Dulce, San Fernando, and Mint Canyon) and surrounding twenty USGS 7.5-minute quadrangles and were included in the USFWS IPaC list generated for the BSA (CDFW 2023a; CNPS 2023a; USFWS 2023a). Two special-status plant species were detected within the BSA during the focused special-status plant survey: slender mariposa lily (*Calochortus clavatus* var. *gracilis*; CRPR 1B.2) and western Joshua tree (Candidate for Listing under CESA). These species are discussed in further detail below and its regulatory status, ecological associations, and presence within the BSA are summarized in Table 5, Special-Status Plant Species Detected in the BSA. No other listed species or non-listed CRPR 1 or CRPR 2 plants were observed during the focused surveys. Due to focused surveys being conducted during the appropriate blooming period, all other special-status plants are not expected to occur. These species are listed in Appendix C, Special-Status Plant Species Not Expected to Occur in the BSA and are not discussed further in this report because no significant direct, indirect, or cumulative impacts are expected. No critical habitat for plants has been designated within the BSA (USFWS 2023c).

**Table 5. Special-Status Plant Species Detected in the Biological Study Area**

| Scientific Name | Common Name | Status[1] (Federal/ State/CRPR) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Calochortus clavatus* var. *gracilis* | slender mariposa lily | None/None/1B.2 | Chaparral, Coastal scrub, Valley and foothill grassland/perennial bulbiferous herb/Mar–June (Nov)/1,045–3,280 | Present. This species was detected within the project BSA at Tower Span 57-1 to 57-2 and Tower Span 65-4 to 66-1. |

**Table 5. Special-Status Plant Species Detected in the Biological Study Area**

| Scientific Name | Common Name | Status[1] (Federal/ State/CRPR) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Yucca brevifolia* | western Joshua tree | None/CST/None | Great Basin grassland, Great Basin scrub, Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland, Sonoran desert scrub, Valley and foothill grassland/perennial leaf succulent/Apr–May/1,310–6,560 | Present. This species was detected within the project BSA at Tower 32-4. |

Notes:

1 Status Abbreviations
CRPR (California Rare Plant Rank):
1B – Plants rare, threatened, or endangered in California and elsewhere;
.2 – Moderately threatened in California (20% - 80% of occurrences threatened/moderate degree and immediacy of threat)
CST: Candidate for listing under CESA as State Threatened

2 Refers to records within the 7 subject U.S. Geological Survey (USGS) 7.5-minute quadrangles (i.e., San Fernando, Mint Canyon, Sleepy Valley, Agua Dulce, Ritter Ridge, Palmdale, and Littlerock) and 20 surrounding quadrangles.

### Slender Mariposa Lily

Slender mariposa lily has a CRPR of1B.2. This perennial bulbiferous herb typically blooms from March to June and is found in chaparral, coastal scrub, and valley and foothill grasslands between 1,045 and 3,280 feet amsl (CNPS 2023a). Slender mariposa lily is endemic to Southern California, with populations primarily scattered across the transverse mountain ranges in Los Angeles and Ventura Counties.

This species was detected within the BSA of two tower span work areas. Approximately 273 individuals were mapped within the BSA at Tower Span 65-4 to 66-1, and one individual slender mariposa lily was mapped within the BSA for Tower Span 57-1 to 57-2 (Figure 3D; Figure 3G).

### Western Joshua Tree

Western Joshua tree is a candidate for listing as “Threatened” under CESA and afforded the protection of the act while the Commission decides if listing the species is warranted. This monocot tree in the asparagus family (*Agavaceae*) typically blooms between April and May but is a conspicuous tree and identifiable at any time of year. It is found within Joshua tree woodland, Great Basin grassland and scrub, Mojavean desert scrub, pinyon and juniper woodland, Sonoran desert scrub, and valley and foothill grassland between 1,310 and 6,560 feet amsl (CNPS 2023b). This species occurs on desert flats and slopes in northern extent of Los Angeles County and other counties in southeastern California (Calflora 2023; Jepson Flora Project 2023). Ten western Joshua trees were mapped within the BSA at Tower 32-4 (Figure 3Q).

## 5.2.2 California Desert Native Plants

Other than western Joshua tree, two desert native plant species were mapped within the BSA at four project work locations: Wiggins' cholla and chaparral yucca. Three Wiggins' cholla were mapped within the BSA at Tower 32-4 (Figure 3Q); 27 chaparral yucca individuals were mapped within the BSA at Tower Span 33-2 to 33-3 (Figure 3P); one chaparral yucca individual was mapped within the BSA at Tower Span 41-3 to 41-4 (Figure 3L); and 12 chaparral yucca individuals were mapped within the BSA at Tower 43-2 (Figure 3K).

Although the California Desert Native Plants Act is codified in state law (California Food and Agricultural Code Division 23), enforcement powers and administrative responsibilities are given to the subject County commissioner, sheriff, and board of supervisors as stipulated in Chapter 4 of the California Desert Native Plants Act (Enforcement Powers and Administrative Responsibilities). Therefore, potential impacts to desert native plant species are analyzed in Section 6.6, which discusses project consistency with local policies or ordinances.

## 5.2.3 Trees Protected under Local Ordinances

### County of Los Angeles Oak Tree Ordinance

The Los Angeles County Oak Tree Ordinance prohibits the cutting, destroying, removing, relocating, inflicting damage on, or encroaching into the protected zone (canopy dripline plus 5 feet or 15 feet from trunk, whichever is greater) of any tree of the oak tree genus that is 8 inches or more in diameter (measured at 4.5 feet above the mean natural grade), or any tree that has been provided as a replacement tree (unless an oak tree permit is first obtained).

A tree inventory survey was not conducted for the proposed project; however, oak trees that may meet the size criteria for protection under this ordinance were observed in the BSA at work locations occurring within unincorporated Los Angeles County. Coast live oak (*Quercus agrifolia* var. *agrifolia*) trees that likely meet the protected size criteria were identified at Tower Span 70-4 to 71-1 (Figure 3C). Additionally, Tucker oak chaparral (*Quercus john-tuckeri* Association) that may contain Tucker oak trees that meet the County-protected size were mapped at Tower 43-2 and Tower Span 49-2 to 49-3 (Figure 3I; Figure 3K).

### City of Santa Clarita Oak Tree Ordinance

The City of Santa Clarita Oak Tree Ordinance regulates pruning, encroaching, cutting, relocating, or removal of any oak species. A tree inventory survey was not conducted within the proposed project; however, no oak trees were observed in the BSA at Tower Span 65-4 to 66-1, the only work location occurring within the City of Santa Clarita (Figure 3D).

### City of Los Angeles Protected Tree Ordinance

The City of Los Angeles Tree Ordinance protected under this ordinance include all oak trees indigenous to California (excluding scrub oak), Southern California black walnut, California sycamore, California bay, blue elderberry, and toyon that measuring 4 inches or more in cumulative diameter at 4.5 feet above the ground from the base of the tree or shrub.

A tree inventory survey was not conducted within the proposed project; however, blue elderberry shrubs that may meet the size criteria for protection under this ordinance were observed in the BSA at work locations occurring within the City of Los Angeles. Several blue elderberry shrubs that may meet the definition of protected trees and

shrubs were observed within the BSA at Tower 76-5 and Tower 77-1, the only work locations that occur within the City of Los Angeles (Figures 3A and 3B).

## 5.3 Wildlife

Seventy-two species of wildlife were observed during the survey. Avifauna comprised the majority of wildlife species detections with a total of 65 bird species due to a detection bias for their mobility and diurnal activity. Some commonly observed bird species include common raven (*Corvus corax*), mourning dove (*Zenaida macroura*), lesser goldfinch (*Spinus psaltria*), Northern mockingbird (*Mimus polyglottos*), European starling (*Sturnus vulgaris*), red-tailed hawk (*Buteo jamaicensis*), Anna's hummingbird (*Calypte anna*), and house finch (*Haemorhous mexicanus*). Three reptile species were observed: western fence lizard (*Sceloporus occidentalis*), common side-blotched lizard (*Uta stansburiana*), and tiger whiptail (*Aspidoscelis tigris*). Three common mammal species were directly observed: California ground squirrel (*Otospermophilus beecheyi*), coyote (*Canis latrans*), and mule deer (*Odocoileus hemionus*). Other common mammal species that could occur within the BSA include common raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and Virginia opossum (*Didelphis virginica*), with the possibility of bats foraging over the BSA. No amphibian species were observed. A comprehensive list of wildlife species observed during surveys is available in Appendix D, Wildlife Compendium. Special-status wildlife species detected within the BSA are listed below in Section 5.3.1.

### 5.3.1 Special-Status Wildlife Species Assessment

Fifty-four wildlife species considered special-status in this report were returned in the query of the CNDDB for the seven subject USGS 7.5-minute quadrangles (i.e., Littlerock, Palmdale, Ritter Ridge, Sleepy Valley, Agua Dulce, San Fernando, and Mint Canyon) and surrounding twenty USGS 7.5-minute quadrangles and were included in the USFWS IPaC list generated for the BSA (CDFW 2023a; USFWS 2023a). Special-status wildlife that have a low potential to occur or are not expected to occur within the BSA due to lack of suitable habitat are listed in Appendix E, Special-Status Wildlife Species with Low Potential to Occur or Not Expected to Occur in the BSA. These species are not discussed further in this report because no significant direct, indirect, or cumulative impacts are expected.

Three special-status wildlife species were detected within the BSA during surveys for the project: loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Setophaga petechia*), and American badger (*Taxidea taxus*). Nine special-status wildlife species have a moderate potential to occur due to presence of suitable habitat and site conditions: Crotch bumble bee (*Bombus crotchii*), Northern California legless lizard (*Anniella pulchra*), California legless lizard (*Anniella* spp.), California glossy snake (*Arizona elegans occidentalis*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), Blainville's horned lizard (*Phrynosoma blainvillii*), LeConte's thrasher (*Toxostoma lecontei*), San Diego desert woodrat (*Neotoma lepida intermedia*), and southern grasshopper mouse (*Onychomys torridus ramona*). These species are discussed in further detail below and their regulatory status, ecological associations, and presence or potential to occur within the BSA are summarized in Table 6, Special-Status Wildlife Species Detected or with Moderate to High Potential to Occur in the Biological Study Area. No critical habitat for wildlife has been designated within the BSA (USFWS 2023c); however, Unit 13 of final critical habitat for coastal California gnatcatcher (*Polioptila californica californica*) occurs approximately 130 feet northwest of Tower Span 70-4 to 71- 1 (USFWS 2023c). This species is not expected to occur within the BSA at this work location due to lack of suitable coastal sage scrub habitat.

## Table 6. Special-Status Wildlife Species Detected or with Moderate to High Potential to Occur in the Biological Study Area

| Scientific Name | Common Name | Status[1] (Federal/State) | Habitat | Potential to Occur[2] |
|---|---|---|---|---|
| **Invertebrates** | | | | |
| *Bombus crotchii* | Crotch bumble bee | None/CSE | Open grassland and scrub communities supporting suitable floral resources. | Moderate potential to occur. Vegetation containing the preferred plant genera occurs within the project BSA. |
| **Reptiles** | | | | |
| *Anniella* spp. | California legless lizard (general concept California legless lizard in unassigned region) | None/SSC | sparse vegetation and warm, moist, loose sandy or loamy soils | Moderate potential to occur. Suitable vegetation with loose soils occurs within the project BSA. |
| *Anniella pulchra* | Northern California legless lizard | None/SSC | Coastal dunes, sandy washes, chaparral, desert scrub; pine-oak woodlands, and stream terraces with riparian and oak woodlands; Joshua tree woodland; associated with sparse vegetation and warm, moist, loose soils | Moderate potential to occur. Suitable vegetation with loose soils occurs within the project BSA. |
| *Arizona elegans occidentalis* | California glossy snake | None/SSC | Commonly occurs in desert regions throughout southern California. Prefers open sandy areas with scattered brush. Also found in rocky areas. | Moderate potential to occur. The project BSA contains suitable habitat for this species. |
| *Aspidoscelis tigris stejnegeri* | coastal whiptail | None/SSC | Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas. | Moderate potential to occur. The project BSA contains suitable habitat for this species. |

## Table 6. Special-Status Wildlife Species Detected or with Moderate to High Potential to Occur in the Biological Study Area

| Scientific Name | Common Name | Status[1] (Federal/State) | Habitat | Potential to Occur[2] |
|---|---|---|---|---|
| *Phrynosoma blainvillii* | Blainville's horned lizard | None/SSC | Open areas of sandy soil in valleys, foothills, and semi-arid mountains including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats | Moderate potential to occur. The project BSA contains suitable habitat for this species. |
| **Birds** | | | | |
| *Lanius ludovicianus* (nesting) | loggerhead shrike | None/SSC | Nests and forages in open habitats with scattered shrubs, trees, or other perches | Present. This species was detected within the project BSA at Tower 32-4. This species also has a moderate potential to occur at other work locations due to presence of suitable habitat. |
| *Setophaga petechia* (nesting) | yellow warbler | None/SSC | Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats | Present but not expected to nest. This species was detected within the project BSA at Tower 32-4; however, this individual is likely a foraging migrant as this work location lacks suitable nesting habitat. Suitable nesting habitat is also not present within the BSA at other work locations. |
| *Toxostoma lecontei* | LeConte's thrasher | None/SSC | Nests and forages in desert wash, desert scrub, alkali desert scrub, desert succulent, and Joshua tree habitats; nests in spiny shrubs or cactus | Moderate potential to occur. The project BSA contains suitable habitat for this species. |
| **Mammals** | | | | |
| *Neotoma lepida intermedia* | San Diego desert woodrat | None/SSC | Coastal scrub, desert scrub, chaparral, cacti, rocky areas | Moderate potential to occur. The project BSA contains suitable habitat for this species. |
| *Onychomys torridus ramona* | southern grasshopper mouse | None/SSC | Low, open and semi-open grassland and shrublands on flat, sandy or gravelly valley floor | Moderate potential to occur. The project BSA contains suitable habitat for this species. |

**Table 6. Special-Status Wildlife Species Detected or with Moderate to High Potential to Occur in the Biological Study Area**

| Scientific Name | Common Name | Status[1] (Federal/State) | Habitat | Potential to Occur[2] |
|---|---|---|---|---|
| *Taxidea taxus* | American badger | None/SSC | Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils | Present. This species was detected within the project BSA at Tower Span 41-3 to 41-4. This species also has a moderate potential to occur at other work locations due to presence of suitable habitat. |

Notes:

1 Status Abbreviations
CSE: Candidate for listing under CESA as State Endangered
SSC: California Species of Special Concern

2 Refers to records within the 7 subject U.S. Geological Survey (USGS) 7.5-minute quadrangles (i.e., San Fernando, Mint Canyon, Sleepy Valley, Agua Dulce, Ritter Ridge, Palmdale, and Littlerock) and 20 surrounding quadrangles.

### Crotch Bumble Bee

Crotch bumble bee is a candidate for listing as "Endangered" under CESA and is afforded the protection of CESA while the Commission decides if listing the species is warranted. This species inhabits open grassland and scrub habitats and occurs primarily within California from the Pacific Coast to the cis-montane slope of the Sierra Nevada, Cascades, and Transverse Ranges, as well as the western Mojave Desert (Koch et al. 2012; The Xerces Society 2018). The size of Crotch bumble bee colonies has not been well documented, but like most other species of bumble bees, the species primarily nests underground (The Xerces Society 2018). Bumble bees, including Crotch bumble bee, are generalist foragers and have been reported visiting a wide variety of flowering plants. Since it has a very short tongue, Crotch bumble bee is best suited to forage at open flowers with short corollas (The Xerces Society 2018). The plant families most associated with observations or collections of the species from California include Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae (The Xerces Society 2018). Nectar plants known to be visited by Crotch bumble bee include the genera *Asclepias*, *Chaenactis*, *Lupinus*, *Medicago*, and *Salvia* (Williams et al. 2014), while *Phacelia*, *Clarkia*, *Eriogonum*, *Eschscholzia* and *Antirrhinum* are genera that have been identified as preferred nectar sources (Koch et al. 2012). However, it is assumed flowering plants in other genera could also support foraging by this species (Williams et al. 2014). Crotch bumble bee has a moderate potential to occur within the BSA, as the study area contains vegetation containing the preferred plant genera at Tower Span 38-1 to 38-2, Tower Span 38-4 to 39-1, Tower Span 41-3 to 41-4, Tower 46-4, Tower Span 49-2 to 49-3, Tower 54-2, Tower 57-2, Tower 61-2, Tower Span 65-4 to 66-1, Tower Span 70-4 to 71-1, Tower 76-5, and Tower 77-1.

### California Legless Lizard

California legless lizard is a CDFW SSC. Legless lizards in California were previously considered one species; however, are now considered five species (Pappenfuss and Parham 2013), with all species in California recognized as SSC. Legless lizards found in the region in which the species has not yet been determined, generally in the Western Transverse Ranges and San Fernando Valley for Los Angeles County, are treated as a general concept California legless lizard, *Anniella* spp. (Nafis 2023). This species is a small slender lizard with no legs and eyelids that generally inhabits loose, moist, warm soils with sparse vegetation in a variety of habitats (Nafis 2023). California legless lizard has a moderate potential to occur within the BSA at work locations in the geographical

range for this un-specified California legless lizard group, as suitable habitat is present at Tower 46-4, Tower Span 49-2 to 49-3, Tower 54-2, Tower Span 57-1 to 57-2, Tower 57-2, Tower 61-2, Tower Span 65-4 to 66-1, Tower Span 70-4 to 71-1, Tower 76-5, and Tower 77-1.

### Northern California Legless Lizard

Northern California legless lizard is a CDFW SSC. As mentioned above, legless lizards in California were previously considered one species; however, are now split into five species (Pappenfuss and Parham 2013). Morphologically they are very similar in size and general appearance but can be distinguished with fine-level morphological traits (e.g., ventral color, lateral striping, scale rows). This species inhabits loose, moist, warm soils with sparse vegetation in a variety of habitats, such as coastal dunes, sandy washes, chaparral, desert scrub, pine-oak woodlands, Joshua tree woodlands, and stream terraces riparian and oak woodland (Nafis 2023). California legless lizard has a moderate potential to occur within the BSA at work locations in the geographical range for this species, as suitable habitat is present at Tower 32-4, Tower Span 33-2 to 33-3, Tower Span 35-2 to 35-3, Tower Span 38-1 to 38-2, Tower Span 38-4 to 39-1, Tower Span 41-3 to 41-4, and Tower 43-2.

### California Glossy Snake

California glossy snake is a CDFW SSC. This medium-sized snake inhabits arid scrub, rocky washes, grasslands, and chaparral, with a preference for open areas with loose, friable soils (Nafis 2023). California glossy snake has a moderate potential to occur within the BSA at work locations in the geographic range for this coastal subspecies, as suitable habitat is present at Tower 54-2, Tower Span 57-1 to 57-2, Tower 57-2, Tower 61-2, Tower Span 65-4 to 66-1, Tower Span 70-4 to 71-1, Tower 76-5, and Tower 77-1.

### Coastal Whiptail

Coastal whiptail is a CDFW SSC. This slim-bodied lizard with a long slender tail can be found in hot and dry open areas with sparse vegetation in a variety of habitats, such as chaparral, woodland, and riparian areas (Nafis 2023). Although only the inland subspecies of tiger whiptail, Great Basin whiptail (*Aspidoscelis tigris tigris*), was detected within the BSA at Tower Span 33-2 to 33-3 and Tower 32-4, suitable habitat for the coastal subspecies is present within the BSA. Coastal whiptail has a moderate potential to occur within the BSA at work locations in the geographic range for this coastal subspecies, as suitable habitat is present at Tower 54-2, Tower Span 57-1 to 57-2, Tower 57-2, Tower 61-2, Tower Span 65-4 to 66-1, Tower Span 70-4 to 71-1, Tower 76-5, and Tower 77-1.

### Blainville's Horned Lizard

Blainville's horned lizard is a CDFW SSC. This flat bodied lizard inhabits open areas with loose, sandy soil within a variety of habitats, including annual grasslands, coastal scrub, chaparral, valley and foothill woodlands, riparian habitat, and coniferous forests (Nafis 2023). Horned lizards mainly feed on ants; therefore, are often found near ant hills or nests (Nafis 2023). Blainville's horned lizard has a moderate potential to occur within the BSA, as suitable habitat is present at Tower Span 35-2 to 35-3, Tower 54-2, Tower Span 57-1 to 57-2, Tower 57-2, Tower 61-2, Tower Span 65-4 to 66-1, and Tower Span 70-4 to 71-1.

### Loggerhead Shrike

Loggerhead shrike is a CDFW SSC. This stocky, large-headed songbird is widespread at the lower elevations in California (Humple 2008). Preferred habitats for the species are open areas that include scattered shrubs, trees,

posts, fences, utility lines, or other structures that provide hunting perches with views of open ground, as well as nearby spiny vegetation or man-made structures (such as the top of chain-link fences or barbed wire) that provide a location to impale prey items for storage or manipulation (Humple 2008). Nest sites are chosen based more on the cover than the particular vegetation species and are usually constructed in a dense shrub or tree well below the crown and are well concealed (Yosef 2020). Loggerhead shrike was detected within the BSA for Tower 32-4, which contains suitable nesting and foraging habitat. This species also has a moderate potential to occur within BSA at work locations with flat, open topography such as Tower Span 33-2 to 33-3, Tower Span 35-2 to 35-3, Tower Span 38-1 to 38-2, Tower Span 38-4 to 39-1, Tower Span 41-3 to 41-4, Tower 54-2, and Tower 61-2.

### Yellow Warbler

Yellow warbler is a CDFW SSC. This medium-sized wood-warbler is a summer resident in coastal and Northern California. This species is most often found in willows and cottonwoods, but also inhabit a variety of riparian or montane forest habitats (Zeiner et al. 1990). Yellow warbler was detected in ornamental vegetation, approximately 190 feet northwest of Tower 32-4 (Figure 3Q). The individual detected was likely a foraging migrant as the BSA at this work location does not contain suitable nesting habitat. Suitable nesting habitat is also not present within the BSA for other work areas. Therefore, yellow warbler is present but is not expected to nest due to a lack of suitable nesting habitat in the BSA.

### LeConte's Thrasher

LeConte's thrasher is a CDFW SSC. This medium-sized songbird is an uncommon resident of deserts below 5,249 feet amsl in southwestern United States (Dobkin and Granholm 2005; Sheppard 2020). Preferred habitat for LeConte's thrasher is open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats; this species also occurs in Joshua tree woodlands with scattered shrubs (Dobkin and Granholm 2005). This species prefers gently rolling to well-drained slopes occupied by saltbush and joint fir with bare ground or sparse grass (Fitton 2008). These conditions are generally found on bajadas or alluvial fans where the slopes are bisected by dry washes (Fitton 2008). Much of the LeConte's thrasher's diet consists of insects found within leaf litter under desert shrubs; therefore, habitat must contain a sufficient ground cover (Sheppard 2020). The BSA supports suitable foraging habitat (desert scrub) and nesting habitat (spiny shrubs and cacti) at some work locations. Therefore, LeConte's thrasher has a moderate potential to occur within the BSA at Tower 32-4, Tower Span 33-2 to 33-3, and Tower Span 35-2 to 35-3.

### San Diego Desert Woodrat

San Diego desert woodrat is a CDFW SSC. This medium-sized rodent inhabits a wide variety of arid habitats, which include but are not limited to Joshua tree or pinyon-juniper woodlands, chaparral, and desert scrub (Zeiner et al. 1990). Desert woodrats are known for building dens or middens composed of various materials such as sticks, rocks, and other debris for nesting and food storage purposes (Cameron and Rainey 1972). Although no woodrat middens were observed during surveys for the project, San Diego desert woodrat has a moderate potential to occur within the BSA, as suitable habitat is present through the BSA at all work locations.

### Southern Grasshopper Mouse

Southern grasshopper mouse is a CDFW SSC. This small rodent inhabits a variety of open and semi-open scrub habitats on flat, sandy or gravelly valley floors (Collins 1998). This species was not observed within during surveys conducted for the project. However, this species is nocturnal and difficult to identify without conducting small

mammal trapping. Southern grasshopper has a moderate potential to occur within the BSA at Tower 32-4, Tower Span 33-2 to 33-3, and Tower Span 35-2 to 35-3, where suitable site conditions (i.e., intact arid shrublands on flat, sandy valley floor) are present. Other work locations lack suitable soils and are located on terrain that is too mountainous or densely vegetated for this species.

### American Badger

American badger is a CDFW SSC. This species is a medium-sized mammal that inhabits dry, open, treeless areas within grasslands, shrublands, pastures, forests, and agricultural land with friable soils suitable for burrowing (Zeiner et al. 1990). Although not directly observed, recent sign of American badger (i.e., burrow with wide apron and horizontal claw markings, and nearby badger digs) was detected within the BSA at Tower Span 41-3 to 41-4. In addition, this species has a moderate potential to occur at Tower 32-4, Tower Span 33-2 to 33-3, Tower Span 35-2 to 35-3, Tower Span 38-1 to 38-2, Tower Span 38-4 to 39-1, Tower 46-4, and Tower Span 49-2 to 49-3 due to presence of open habitat and loose soils.

## 5.3.2 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Corridors can also be aquatic resources that provide passage for fish. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as steppingstones for wildlife dispersal.

Portions of the project occur within designated wildlife corridors or habitat linkages identified in the South Coast Missing Linkages analysis conducted by South Coast Wildlands (2008) and CDFW's California Essential Habitat Connectivity (CEHC) Project (Spencer et al. 2010), as shown in the CDFW BIOS (CDFW 2023b). Within the South Coast Missing Linkages analysis, Tower Span 57-1 to 57-2 and Tower 57-2 occur within the San Gabriel-Castaic Connection. All other work locations are located outside of this linkage or any other linkage identified in the South Coast Missing Linkages analysis. Within the CEHC Project, Tower Span 57-1 to 57-2 occurs within an area identified as a Natural Landscape Block, and Tower 54-2, Tower Span 57-1 to 57-2, Tower 57-2, and Tower 61-2 occur within areas identified as Essential Connectivity Areas. Most of the work locations are located within sparsely developed to almost completely undeveloped areas that would provide live-in habitat for wildlife and allow for wildlife movement to nearby open spaces.

## 5.3.3 Native Wildlife Nursery Sites

No diagnostic signs of bird rookeries (e.g., numerous nests, whitewash) or large maternal or overwintering bat roosts (e.g., large concentrations of guano or guano odors) were identified in the BSA. Additionally, aquatic resources identified within the BSA are unlikely to support fisheries due to a lack of perennially available water (e.g., Placerita Creek at Tower Span 70-4 to 71-1; ephemeral drainages at Tower 32-4, Tower 57-2, Tower 61-2) or lack of connectivity to natural waterways (e.g., water impoundments and concrete channels in the LADWP Van Norman Complex at Tower 76-5 and Tower 77-1). The lack of typical urban roosting habitat (bridges and older buildings with structural deficiencies) and minimal stands of large trees makes it unlikely for the BSA to support roosting bats. However, vegetation throughout the BSA for all work locations could provide suitable nesting habitat for many species of native birds.

## 5.4 Jurisdictional Wetlands and Waters

During the formal jurisdictional waters and wetland delineation, Psomas identified potential wetlands and/or non-wetland waters in the vicinity of three work locations: Tower 57-2, Tower 61-2, and Tower Span 70-4 to 71-1 (Appendix F). None of these potential jurisdictional features occur within the project footprint.

### Tower 57-2

Small ephemeral drainage features likely subject to RWQCB and CDFW jurisdiction were identified south and west of the tower location but do not overlap with proposed work areas (see Exhibit 2 in Appendix F).

### Tower 61-2

Small ephemeral drainage features likely subject to RWQCB and CDFW jurisdiction were identified north, west, and east of the tower location but do not overlap with proposed work areas (see Exhibit 3 in Appendix F).

### Tower Span 70-4 to 71-1

A portion of Placerita Creek occurs approximately 230 feet south of the tower span work location. Based on a brief assessment of hydrology and vegetation by Psomas, wetlands are likely to be present within the creek corridor. In addition, waters and wetland associated with Placerita Creek would fall under USACE jurisdiction due presence of seasonal flower and connection with Santa Clara River, along with RWQCB and CDFW jurisdiction (see Exhibit 4 in Appendix F). These potentially jurisdictional features can be avoided by project activities.

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# 6 Project Impacts

This section addresses direct and indirect impacts to biological resources that would result from implementation of the project. The significance determinations for proposed or potential impacts are described in this chapter, and proposed mitigation is provided in Section 7, Mitigation.

**Direct impacts** refer to the physical loss of a biological resource. Construction-related direct temporary impacts to biological resources would occur from equipment staging, tower raising activities, grading at tower span work locations, and vegetation clearance that would occur around the ground disturbance and grading areas. Direct impacts were quantified by overlaying the proposed impact limits on the biological resources map of the BSA, as shown on Figures 4A through 4Q. Areas where grubbing, grading, and other ground disturbance activities are proposed to occur would be restored back to the original state during the site rehabilitation phase; thus, would be considered direct temporary impacts. Although not involving any ground disturbance, areas where equipment would be staged or active for staging or tower raising activities were also considered direct temporary impacts. Operations-related impacts would not change beyond existing conditions, and therefore, would not occur as a result of the proposed project.

**Indirect impacts** are reasonably foreseeable effects caused by a project's implementation on remaining or adjacent biological resources outside the direct disturbance zone. For purposes of this report, indirect impacts are those that affect areas outside the project disturbance footprint.

## 6.1 Explanation of Findings of Significance

Impacts to sensitive vegetation communities or riparian habitat, special-status plant species, special-status wildlife species, wildlife corridors and habitat connectivity, and regional resource planning must be analyzed to determine whether such impacts are significant. CEQA Guidelines Section 15064(b) states that an ironclad definition of "significant" effect is not possible because the significance of an activity may vary with the setting. However, CEQA Guidelines Section 15065(a) lists impacts that are helpful in defining whether a project may have a significant effect on the environment. Mandatory findings of significance occur when there is substantial evidence that a project could: (1) substantially degrade the quality of the environment, (2) substantially reduce the habitat of a fish or wildlife species, (3) cause a fish or wildlife population to drop below self-sustaining levels, (4) threaten to eliminate a plant or animal community, or (5) reduce the number or restrict the range of a rare or endangered plant or animal.

The following are the significance thresholds for biological resources provided in the CEQA Appendix G environmental checklist, which states that a project would potentially have a significant effect if it:

Impact BIO-1. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as being a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS?

Impact BIO-2. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS?

Impact BIO-3. Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Impact BIO-4. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impedes the use of native wildlife nursery sites?

Impact BIO-5. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact BIO-6. Would the project conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

The evaluation of whether an impact to a particular biological resource is significant must consider both the resource itself and the role of that resource in a regional context. Substantial impacts are those that contribute to, or result in, permanent loss of an important resource, such as a population of a rare plant or animal. Impacts may be important locally because they result in an adverse alteration of existing site conditions but considered not significant because they do not contribute substantially to the permanent loss of that resource regionally. The severity of an impact and the offsetting benefits of mitigation are the primary determinants of whether that impact can be mitigated to a less-than-significant level.

The evaluation of project impacts is organized below following the Appendix G environmental checklist of the CEQA Guidelines.

## 6.2 Impact BIO-1: Special-Status Species

**Less-Than-Significant Impact with Mitigation Incorporated.** There are 57 special-status plant species and 54 special-status wildlife species with recorded occurrences in the U.S. Geologic Survey 7.5-minute topographic quadrangles in which the project is located (i.e., Littlerock, Palmdale, Ritter Ridge, Sleepy Valley, Agua Dulce, San Fernando, and Mint Canyon), and surrounding 20 quadrangles (CDFW 2023a; CNPS 2023a; USFWS 2023a). Of these, two special-status plant species and three special-status wildlife species were detected within the project's BSA (project footprint plus a 100-foot buffer), and nine special-status wildlife species have a moderate potential to occur within the BSA due to presence of suitable habitat and site conditions. The project would have significant impacts on special-status species absent mitigation or avoidance. Impacts to these species and proposed mitigation measures are discussed below. Plant species that are not considered special-status but are protected under the locally-enforced California Desert Native Plants Act (i.e., chaparral yucca, Wiggins' cholla, blue elderberry, oak trees) are discussed below in Section 6.6, Impacts Associated with Local Policies and Ordinances.

## 6.2.1 Special-Status Plants

### 6.2.1.1 Direct Impacts

#### Slender Mariposa Lily

In total, 274 individuals occupying approximately 0.25-acre (10,796 square feet) were mapped within the BSA at two work locations during the focused special-status plant surveys conducted in May 2023 (Figure 4D; Figure 4G). Approximately 273 slender mariposa lilies were detected within and adjacent to the proposed grading footprint at Tower Span 65-4 to 66-1 and a single slender mariposa lily was detected approximately 42 feet north of the proposed grading footprint at Tower Span 57-1 to 57-2. Of those, 9 individuals occupying approximately 168 square feet (0.004-acre) were mapped within the project grading footprint for Tower Span 65-4 to 66-1. Therefore, the proposed project would permanently impact approximately 1.6% of the mapped occupied habitat for this species. Although this species is moderately threatened in California (CRPR 1B.2), this impact would be adverse, but not significant. The loss of slender mariposa lily individuals is not considered a significant impact due to the very small amount of impacts to occupied habitat resulting from the proposed project and the species' scattered distribution throughout Ventura and Los Angeles Counties. Therefore, this impact would not reduce regional populations of the species to below self-sustaining numbers and direct permanent impacts to slender mariposa lily would be less-than-significant absent mitigation.

The project originally proposed to grub a 75-foot radius from the center of the Tower Span 65-4 to 66-1 work area and the Tower Span 57-1 to 57-2 work area, which would result in increasing direct impacts to almost all of the overall mapped occupied habitat for this species. This impact would be significant if not mitigated or avoided. LADWP has indicated that clearing and grubbing in areas occupied by slender mariposa lily outside of the grading footprint can be avoided during project activities. LADWP Implementation of **MM-BIO-1** (Biological Monitoring), which requires environmental training and biological monitoring, and **MM-BIO-2** (Demarcation of Disturbance Limits), which requires installation of temporary construction fencing and/or staking to identify the limits of grading/disturbance, would ensure avoidance of slender mariposa lily occupied habitat at the Tower Span 65-4 to 66-1 work area and the Tower Span 57-1 to 57-2 work area by prohibiting vegetation clearance activities within slender mariposa lily occupied habitat outside of the proposed grading footprint. Accordingly, direct temporary impacts to slender mariposa lily would be less than significant with implementation of **MM-BIO-1** and **MM-BIO-2**.

#### Western Joshua Tree

Twenty-seven western Joshua trees were mapped within the BSA at Tower 32-4, of which three occur within the project footprint where staging for tower raising activities is proposed to occur (Figure 4Q). Direct impacts to any Joshua tree individuals would be considered significant absent mitigation, and as a candidate species for listing under CESA and a species protected under The Western Joshua Tree Conservation Act and the California Desert Native Plants Act, any trimming or removal of western Joshua trees would require a hazard management permit or Western Joshua Tree Conservation Act incidental take permit, respectively. However, LADWP has indicated that all Joshua trees can be avoided during project activities. As such, all western Joshua trees would be avoided and preserved in place, and all construction activities would occur within existing roads and access areas around the tower. Implementation of **MM-BIO-1**, which requires environmental training and biological monitoring, as well as **MM-BIO-2** requiring disturbance limit demarcations, would ensure avoidance of western Joshua trees at the Tower 32-4 work area by prohibiting any vegetation clearance activities at this work site and trimming or removal of Joshua

trees. Accordingly, direct impacts to western Joshua trees would be less-than-significant with implementation of **MM-BIO-1** and **MM-BIO-2**.

#### 6.2.1.2 Indirect Impacts

Typically, CDFW considers any western Joshua tree within 186 feet of a direct impact to be indirectly impacted (Vander Wall et. al. 2006). However, for this project, no western Joshua tree seedbank or associated species would be affected by the impact as no ground-moving activities are proposed within the BSA for Tower 32-4 and all work would remain on existing access roads and staging areas.

Indirect impacts to special-status plants may include inadvertent spillover impacts outside the construction footprint, dust accumulation on special-status plants, chemical spills from construction equipment, stormwater erosion and sedimentation, and increased wildfire risk. Indirect impacts to special-status plants are considered significant absent mitigation. Implementation of **MM-BIO-1** will reduce potential impacts to a less-than-significant level through environmental training, biological monitoring, verification of the SWPPP, and general monitoring of the BMPs. Additionally, **MM-BIO-2** requires installation of temporary construction fencing and/or staking to identify the limits of grading/disturbance, which would reduce potential human trampling outside of the construction limits. Furthermore, **MM-BIO-3** (Best Management Practices) requires implementation of BMPs, which would include sediment control, spraying to minimize fugitive dust, trash containment, and hazardous materials spill containment. Accordingly, potential indirect impacts to special-status plant species would be less than significant with implementation of **MM-BIO-1**, **MM-BIO-2**, and **MM-BIO-3**.

### 6.2.2 Special-Status Wildlife

#### 6.2.2.1 Direct Impacts

##### Crotch Bumble Bee

Crotch bumble bee is a generalist forager and could forage anywhere within the BSA where suitable floral resources are present Therefore, this species has a moderate potential to occur in scrub and herb-dominated vegetation communities containing the preferred plant genera within the BSA at Tower Span 38-1 to 38-2, Tower Span 38-4 to 39-1, Tower Span 41-3 to 41-4, Tower 46-4, Tower Span 49-2 to 49-3, Tower 54-2, Tower 57-2, Tower 61-2, Tower Span 65-4 to 66-1, Tower Span 70-4 to 71-1, Tower 76-5, and Tower 77-1. There is also potential for the project to support nesting sites for bumble bee colonies, including Crotch bumble bee, which are primarily located underground in abandoned holes made by ground squirrels, mice, and rats, but may be above ground in abandoned bird nests or empty cavities (Osborne et al. 2008, Williams et al. 2014).

Implementation of the proposed project could result in direct impacts to Crotch bumble bee through the removal of potentially suitable habitat. However, this impact would not be significant due to abundant suitable habitat present in the project vicinity. These areas will continue to provide habitat opportunities for this species. As a result, the loss of suitable habitat would not substantially reduce the habitat for the species and would not cause the species population to drop below self-sustaining levels; therefore, direct impacts resulting from the loss of habitat for Crotch bumble bee would be less than significant.

Because Crotch bumble bee typically nests underground, individuals would also be highly vulnerable to injury and mortality if present at a given work location in the BSA during construction. Harm to or the loss of individuals during

construction could be significant, absent mitigation. Implementation of **MM-BIO-4** (Crotch Bumble Bee Pre-Construction Surveys) would require pre-construction habitat assessments and focused surveys to identify any Crotch bumble bee nest(s) present within the impact footprint. The measure would require no-impact buffers to be established around nests, if found, thereby avoiding potential direct impacts to Crotch bumble bee resulting from the loss of individuals. In addition, **MM-BIO-1** would require environmental training and regular spot checks during construction work to ensure avoidance of direct impacts to this species. Furthermore, **MM-BIO-2** requires installation of pin flags, flagging tape, or staking to identify any special-status biological resources such as Crotch bumble bee nests identified during pre-construction surveys or construction monitoring for avoidance. Accordingly, direct impacts to Crotch bumble bee would be less than significant with implementation of **MM-BIO-1**, **MM-BIO-2**, and **MM-BIO-4**.

### Special-Status Reptiles

California legless lizard, Northern California legless lizard, California glossy snake, coastal whiptail, and Blainville's horned lizard have a moderate potential to occur in the BSA based on the presence of suitable habitat and known occurrences in the region.

Suitable habitat for these species is present throughout the BSA. Although vegetation and ground clearance activities associated with construction would remove potential suitable habitat for these species, direct impacts would be less-than-significant given the small impact footprint compared with the abundant habitat in the surrounding vicinity. These areas will continue to provide habitat opportunities for this species, and the loss of suitable habitat would not cause the species population to drop below self-sustaining levels. Furthermore, areas impacted by proposed grading activities would be restored post-construction. As a result, direct impacts to suitable habitat for special-status reptiles would be less than significant absent mitigation.

These species are cryptic and slow moving on the surface or are otherwise underground, and therefore, are highly vulnerable to mortality or injury if struck by moving vehicles or equipment if present on site during construction. Harm to or the loss of individuals during construction could be significant, absent mitigation. Implementation of **MM-BIO-1** would require environmental training, pre-construction sweeps, regular spot checks during construction, relocation of wildlife out of harm's way, and covering or providing escape routes within steep excavations to ensure avoidance of direct impacts to any special-status reptiles species. Accordingly, direct impacts to special-status reptiles would be less than significant with implementation of **MM-BIO-1**.

### Special-Status Birds and Nesting Birds

Two special-status bird species were observed during biological surveys conducted on the project site: loggerhead shrike and yellow warbler. An additional special-status bird species, LeConte's thrasher, has a moderate potential to nest and forage in the BSA where suitable habitat is present. There is no suitable habitat for yellow warbler within the BSA and no direct impacts to the species are expected to occur as a result of the project.

Suitable nesting and live-in habitat for loggerhead shrike is present within the BSA at work locations with flat, open topography (i.e., Tower 32-4, Tower Span 33-2 to 33-3, Tower Span 35-2 to 35-3, Tower Span 38-1 to 38-2, Tower Span 38-4 to 39-1, Tower Span 41-3 to 41-4, Tower 54-2, Tower 61-2). Loggerhead shrike nest sites are typically well concealed in a dense shrub or tree. Suitable nesting and live-in habitat for LeConte's thrasher is present within the BSA at work locations with desert scrub with spiny shrubs and cacti (i.e., Tower 32-4, Tower Span 33-2 to 33-3, and Tower Span 35-2 to 35-3). LeConte's thrasher nest sites are typically located in a well shaded portion of a densely growing saltbush (*Atriplex* spp.), cholla cacti (*Cylindropuntia* spp.), or sometimes other thorny or spiny

shrubs or small trees. Although vegetation and ground clearance activities associated with construction would remove potential suitable habitat for these species, direct impacts would be less-than-significant given the small impact footprint compared with the abundant habitat in the surrounding vicinity. These areas will continue to provide habitat opportunities for this species, and the loss of suitable habitat would not cause the species population to drop below self-sustaining levels. Furthermore, areas impacted by proposed grading activities would be restored post-construction. As a result, direct impacts to suitable habitat for special-status birds would be less than significant absent mitigation.

Trees and shrub habitat within the proposed project provides suitable nesting habitat for these special-status bird species, as well as other bird species protected under the MBTA (16 USC 703-712) and California Fish and Game Code Sections 3503.5, 3503, and 3513. Vegetation removal or grading activities conducted during the general nesting bird season (February 1 through September 30) could result in the direct take of a bird (i.e., individuals, active nests, eggs, or young) if nesting within proposed disturbance areas during construction. Harm to or the loss of individuals during construction could be significant, absent mitigation. **MM-BIO-5** (Nesting Bird Avoidance) would require seasonal avoidance, pre-construction nesting bird surveys, avoidance buffers, or monitoring, as applicable. Accordingly, direct impacts to special-status birds and nesting birds protected under the MBTA and California Fish and Game Code would be less than significant with implementation of **MM-BIO-5**.

### Special-Status Small Mammals

San Diego desert woodrat and southern grasshopper mouse have a moderate potential to occur in the BSA based on the presence of suitable habitat and known occurrences in the region.

Suitable habitat for San Diego desert woodrat is present throughout the BSA. Woodrat middens built from sticks, rocks, and a variety of materials are generally found in rock crevices and at bases of trees or shrubs. Suitable habitat for southern grasshopper mouse is present within the BSA at work locations with intact arid shrublands on flat, sandy valley floor (i.e., Tower 32-4, Tower Span 33-2 to 33-3, and Tower Span 35-2 to 35-3). Although vegetation and ground clearance activities associated with construction would remove potential suitable habitat for these species, direct impacts would be less-than-significant given the small impact footprint compared with the abundant habitat in the surrounding vicinity. These areas will continue to provide habitat opportunities for this species, and the loss of suitable habitat would not cause the species population to drop below self-sustaining levels. Furthermore, areas impacted by proposed grading activities would be restored post-construction. As a result, direct impacts to suitable habitat for special-status small mammals would be less than significant absent mitigation.

Construction activities could cause mortality and injury to a small number of individuals of these species in burrows or middens if present within the disturbance footprint at the start of construction. Any individuals that are flushed from burrows or middens by construction activities would also be highly vulnerable to stress and predation. Harm to or the loss of individuals during construction could be significant, absent mitigation. **MM-BIO-1** would require environmental training, pre-construction sweeps, regular spot checks during construction, relocation of wildlife out of harm's way, and covering or providing escape routes within steep excavations to ensure avoidance of direct impacts to any special-status small mammal species. Accordingly, direct impacts to special-status small mammals would be less than significant with implementation of **MM-BIO-1**.

### American Badger

One special-status medium-sized mammal, American badger, was detected during biological surveys conducted on the project site. Specifically, burrows showing signs of recent badger activity were observed within the BSA at Tower Span 41-3 to 41-4. This species also has a moderate potential to occur at other project work locations.

Suitable habitat for American badger is present within the BSA at work locations with open habitat and loose soils (i.e., Tower 32-4, Tower Span 33-2 to 33-3, Tower Span 35-2 to 35-3, Tower Span 38-1 to 38-2 , Tower Span 38-4 to 39-1, Tower 46-4, Tower Span 49-2 to 49-3). Although vegetation and ground clearance activities associated with construction would remove potential suitable habitat for these species, direct impacts would be less-than-significant given the small impact footprint compared with the abundant habitat in the surrounding vicinity. These areas will continue to provide habitat opportunities for this species, and the loss of suitable habitat would not cause the species population to drop below self-sustaining levels. Furthermore, areas impacted by proposed grading activities would be restored post-construction. As a result, direct impacts to suitable habitat for American badger would be less than significant absent mitigation.

Construction activities could cause mortality and injury to individuals in burrows if present within the disturbance footprint during construction. In addition, any individuals that are flushed from burrows by construction activities would also be highly vulnerable to stress and vehicle strikes. Harm to or the loss of individuals during construction could be significant, absent mitigation. Implementation of **MM-BIO-6** (American Badger Pre-Construction Surveys and Relocation) would require pre-construction surveys and provides avoidance measures if occupied or active natal dens are present. Implementation of **MM-BIO-1** would require environmental training, pre-construction sweeps, regular spot checks during construction, relocation of wildlife out of harm's way, and covering or providing escape routes within steep excavations to ensure avoidance of direct impacts to this species. Accordingly, direct impacts to American badger would be less than significant with implementation of **MM-BIO-1** and **MM-BIO-6**.

## 6.2.2.2 Indirect Impacts

Indirect impacts to special-status wildlife species, such as fugitive dust, erosion, runoff, sedimentation, chemical pollution, litter, and accidental clearing, grading, or trampling, may result in both habitat degradation and effects on individuals. Trash generated by construction personnel, such as food packaging and cigarette butts, and debris from construction-related materials may be dispersed into natural areas by wind and water and can degrade wildlife habitat and can attract nuisance and pest species that affect several of the wildlife guilds. These indirect impacts would be significant absent mitigation. Implementation of **MM-BIO-1** will reduce potential impacts to a less-than-significant level through environmental training, biological monitoring, verification of the SWPPP, and general monitoring of the BMPs. Additionally, **MM-BIO-2** requires installation of temporary construction fencing and/or staking to identify the limits of grading/disturbance, which would reduce potential human trampling outside of the construction limits. Furthermore, **MM-BIO-3** requires implementation of BMPs, which would include sediment control, spraying to minimize fugitive dust, trash containment, and hazardous materials spill containment.

Construction noise and vibration may disturb avian breeding activities, potentially resulting in nest abandonment or reduced productivity if vegetation removal or grading activities are conducted during the general nesting bird season (February 1 through September 30). Noise has the potential to disrupt sleep, incubation, or feeding activities, as well as mate attraction and territory defense by masking calls. Under the MBTA and California Fish and Game Code Sections 3503.5, 3503, and 3513, indirect impacts to individual special-status and native birds,

active nests, or the young of nesting special-status and native bird species would be considered significant, absent mitigation. **MM-BIO-5** would require seasonal avoidance, pre-construction nesting bird surveys within 300 feet (500 feet for raptors) of the proposed impact areas, avoidance buffers, or monitoring, as applicable.

For the reasons detailed above, potential indirect impacts to special-status wildlife species would be less than significant with implementation of **MM-BIO-1**, **MM-BIO-2**, **MM-BIO-3**, and **MM-BIO-5**.

## 6.3 Impact BIO-2: Riparian Habitat and Sensitive Communities

**Less-Than-Significant Impact.** The BSA supports 27 vegetation communities and 3 unvegetated or developed land cover types, of which there are five special-status vegetation communities: Joshua tree woodland, narrowleaf goldenbush–bladderpod scrub (*Ericameria linearfolia* association), California juniper woodland (*Juniperus californica*/herbaceous association), fiddleneck–phacelia fields (*Phacelia tanacetifolia* association), and desert almond–mexican bladdersage Scrub (*Salazaria mexicana* association). As stated in Section 5.1, Vegetation Communities and Land Covers, CDFW state rankings of 1, 2, or 3 are considered high priority for inventory or special-status communities and impacts to these communities typically require mitigation. Although not given a ranking, narrowleaf goldenbush–bladderpod scrub (*Ericameria linearifolia* association), fiddleneck–phacelia fields (*Phacelia tanacetifolia* association), and desert almond–mexican bladdersage Scrub (*Salazaria mexicana* association) are considered sensitive by CDFW. Additionally, open water is jurisdictional under regulatory agencies, and therefore, included as a special-status land cover type.

Table 7 summarizes permanent and temporary impacts to special-status vegetation communities from the proposed project. There are no proposed impacts to California juniper woodland (*Juniperus californica*/herbaceous association) or open water; therefore, this community and land cover type are not further addressed.

**Table 7. Project Impacts to Special-Status Vegetation Communities and Land Covers**

| Common Name | Alliance | Association | Temporary Ground Disturbance Impacts (acres) | Temporary Staging Impacts (acres) | Total Temporary Impacts (acres) | Remaining in BSA after Permanent Impacts[2] (acres) |
|---|---|---|---|---|---|---|
| **Grass and Herb Dominated** | | | | | | |
| Fiddleneck–Phacelia Fields | *Amsinckia* (*menziesii, tessellata*)–*Phacelia* spp. Herbaceous Alliance | *Phacelia tanacetifolia* Association | <0.01 | 0.00 | <0.01 | 0.37 |
| *Total Grass and Herb Dominated Vegetation* | | | *<0.01* | *0.00* | *<0.01* | *0.37* |
| **Scrub Communities** | | | | | | |
| Narrowleaf Goldenbush–Bladderpod Scrub | *Ericameria linearifolia*–*Cleome isomeris* Shrubland Alliance | *Ericameria linearifolia* Association | 0.00 | 0.54 | 0.54 | 1.97 |

**Table 7. Project Impacts to Special-Status Vegetation Communities and Land Covers**

| Common Name | Alliance | Association | Temporary Ground Disturbance Impacts (acres) | Temporary Staging Impacts (acres) | Total Temporary Impacts (acres) | Remaining in BSA after Permanent Impacts[2] (acres) |
|---|---|---|---|---|---|---|
| Desert Almond–Mexican Bladdersage Scrub | *Prunus fasciculata–Salazaria mexicana* Shrubland Alliance | *Salazaria mexicana* Association | 0.23 | 0.00 | 0.23 | 0.42 |
| *Total Scrub Vegetation[2]* | | | *0.23* | *0.54* | *0.77* | *2.39* |
| **Woodland Communities** | | | | | | |
| California Juniper Woodland | *Juniperus californica* Woodland Alliance | *Juniperus californica*/ herbaceous Association | 0.00 | 0.00 | 0.00 | 0.34 |
| Joshua Tree Woodland | *Yucca brevifolia* Woodland Alliance | *NA* | 0.00 | 0.16 | 0.16 | 0.81 |
| *Total Woodland Vegetation[2]* | | | *0.00* | *0.16* | *0.16* | *1.15* |
| **Unvegetated and Developed Land Cover Types** | | | | | | |
| Open Water | NA | NA | 0.00 | 0.00 | 0.00 | <0.01 |
| *Total Unvegetated and Developed Land Cover Types* | | | *0.00* | *0.00* | *0.00* | *<0.01* |
| **Total[1]** | | | **0.23** | **0.70** | **0.93** | **3.91** |

**Notes:** NA = not applicable.
[1] Subtotals may not sum to total due to rounding.

## 6.3.1 Direct Impacts

The project would only result in temporary impacts as the project is an existing transmission line and does not involve construction of any additional roads or structures. Additionally, all areas where grubbing, grading, or other ground disturbance activities are proposed to occur would be restored back to the original state during the site rehabilitation phase and would be considered temporary. Areas where staging or tower raising activities are proposed to occur would not involve ground disturbance and would also be considered temporary.

A total of 0.93-acre would be directly temporarily impacted by the project to the following four vegetation communities within the BSA: of Joshua tree woodland, narrowleaf goldenbush–bladderpod scrub (*Ericameria linearifolia* association), fiddleneck–phacelia fields (*Phacelia tanacetifolia* association), and desert almond–mexican bladdersage Scrub (*Salazaria mexicana* association) (Table 7). Temporary impacts will be restored following the completion of construction activities as described in Section 1.2.2. Additionally, impacts to these special-status vegetation communities and land covers are proposed to be minimal and spread out over a large area, consisting of 7.5% of the total project impact area and 1.8% of the BSA. Therefore, direct impacts to special-status vegetation communities would be less than significant.

### 6.3.2 Indirect Impacts

Potential short-term indirect impacts to special-status vegetation communities and land covers within the BSA would be the same as those described for special-status plants, and would primarily result from construction activities including impacts related to or resulting from the generation of fugitive dust, as a result of human trampling of vegetation outside the work areas, colonization of non-native or invasive plants, changes in hydrology resulting from construction, including sedimentation and erosion, introduction of chemical pollutants, and damage from inadvertent fires during construction. Potential short-term or temporary indirect impacts to special-status vegetation communities are considered significant absent mitigation.

Implementation of **MM-BIO-1** will reduce potential impacts to a less-than-significant level through environmental training, biological monitoring, verification of the SWPPP, and general monitoring of the BMPs. Additionally, **MM-BIO-2** requires installation of temporary construction fencing and/or staking to identify the limits of grading/disturbance, which would reduce potential human trampling outside of the construction limits. Furthermore, **MM-BIO-3** (Best Management Practices) requires implementation of BMPs, which would include sediment control, spraying to minimize fugitive dust, trash containment, and hazardous materials spill containment. Accordingly, potential indirect impacts to special-status vegetation communities and land cover types would be less than significant with implementation of **MM-BIO-1**, **MM-BIO-2**, and **MM-BIO-3**.

## 6.4 Impact BIO-3: Jurisdictional Wetlands and Waters

**Less-Than-Significant Impact.** Potentially jurisdictional wetlands and waters were not identified within the project impact footprint or BSA. Therefore, there would be no direct impacts to jurisdictional wetlands and waters.

Although not occurring within the project footprint, there are potentially jurisdictional wetlands and waters located in the surrounding vicinity and/or downslope from some proposed work locations (i.e., Tower 57-2, Tower 61-2, Tower Span 70-4 to 71-1).

Potential indirect impacts could result from construction activities and would include impacts from the generation of fugitive dust and the potential introduction of chemical pollutants. Excessive dust can decrease the vigor and productivity of vegetation through effects on light, penetration, photosynthesis, respiration, transpiration, increased penetration of phytotoxic gaseous pollutants, and increased incidence of pests and diseases. Erosion and the release of chemical pollutants (releases of fuel, oil, lubricants, paints, release agents, and other construction materials) can reduce the water quality downstream and degrade associated habitats. These potential impacts could be significant, absent mitigation. Indirect impacts to potentially jurisdictional resources would be avoided through implementation of **MM-BIO-3**, which would require implementation of BMPs, such as sediment control, spraying to minimize fugitive dust, trash containment, and hazardous materials spill containment.

## 6.5 Impact BIO-4: Wildlife Corridors and Nurseries

#### Wildlife Corridors and Habitat Linkages

**Less-Than-Significant Impact.** As described in Section 5.3.2, a few work locations within the proposed project occurs within the San Gabriel-Castaic Connection of the South Coast Missing Linkages (Tower Span 57-1 to 57-2; Tower 57-2) and in areas identified as a Natural Landscape Block or Essential Connectivity Areas in the CEHC Project

(Tower 54-2, Tower Span 57-1 to 57-2, Tower 57-2, and Tower 61-2). In addition, most of the work locations for the proposed project support natural vegetation communities and are located within sparsely developed to almost completely undeveloped areas that would provide live-in habitat for wildlife and allow for wildlife movement to nearby undeveloped natural spaces.

During construction, wildlife may be deterred from the construction area due to increased human presence, loud noises, and physical changes to habitat. However, construction will be temporary at any location throughout the project, and wildlife would be able to use temporary construction areas freely after work crews are gone. Since the proposed project is dispersed and occurring within an existing transmission line, typical construction methods would not impede wildlife movement over a large area at any one time. Work areas would remain unfenced during and after construction. Additionally, work is proposed to occur primarily during daylight hours when most wildlife movement is not anticipated to occur. Nighttime lighting would only be used when necessary, and, as required by **MM-BIO-1**, lighting would be shielded towards the project activity and away from surrounding natural areas. As such, temporary impacts to wildlife movement would be less than significant with implementation of **MM-BIO-1**.

No additional structures other than those existing on the transmission line are proposed to be built. In the long term, modifications would only be made to existing structures and access roads, as well as minor topographical changes from grading activities to achieve height consistency. Any removal of habitat would be restored with native vegetation following construction, and none of the proposed grading activities would create any landform changes that would impede wildlife movement. Therefore, permanent impacts due to loss of habitat would be less than significant.

### Native Wildlife Nursery Sites

**Less-Than-Significant Impact with Mitigation Incorporated.** The project does not support native nursery sites in the form of bird rookeries, large maternal or overwintering bat roosts, large roosting trees or structures for non-colony bats, or fisheries. However, vegetation throughout the BSA at all work locations could provide suitable nesting habitat for many species of native birds. Vegetation removal or grading activities conducted during the general nesting bird season (February 1 through September 30) could result in the direct take of a bird (i.e., individuals, active nests, eggs, or young) if nesting within proposed disturbance areas and vicinity during construction. **MM-BIO-5** would ensure that the implementation of the project would not interfere with the nesting of any native bird species with seasonal avoidance, pre-construction nesting bird surveys, avoidance buffers, or monitoring, as applicable. Accordingly, impacts to native wildlife nursery sites would be less than significant with implementation of **MM-BIO-5**.

## 6.6 Impact BIO-5: Local Policies or Ordinances

**Less-Than-Significant Impact with Mitigation Incorporated.** Applicable local ordinances protecting biological resources within the biological study area include the County of Los Angeles Significant Ecological Area Ordinance, the County of Los Angeles Oak Tree Ordinance, the City of Santa Clarita Oak Tree Ordinance, the City of Los Angeles Protected Tree Ordinance, and the locally enforced California Desert Native Plants Act. Biological resources protected under these ordinances and policies are present within the BSA. These ordinances and proposed mitigation measures to ensure compliance are discussed below.

### County of Los Angeles Significant Ecological Area Ordinance

The BSA at a few work locations occur within a County of Los Angeles designated SEA (County of Los Angeles 2023). The BSA at Tower Span 57-1 to 57-2, Tower 57-2, and Tower Span 70-4 to 71-1 partially overlaps with the Santa Clara River SEA, and the BSA at Tower Span 33-2 to 33-3 partially overlaps with the Antelope Valley SEA. However, this project is exempt from regulations pertaining to the Los Angeles County SEA Ordinance per Los Angeles County Code 22.102.040 (Exemptions), which provides an exemption for "emergency or routine maintenance by a public utility necessary to protect or maintain essential components of an existing utility or transmission system". Therefore, the project is exempt from the ordinance. However, with the implementation of **MM-BIO-1** through **MM-BIO-7**, impacts to biological resources protected by the ordinance would be less than significant.

### County of Los Angeles Oak Tree Ordinance

Oak trees that may meet the size criteria for protection under this ordinance were observed in the BSA at work locations occurring within unincorporated Los Angeles County (Figure 4C).

The County of Los Angeles Oak Tree Ordinance requires that all potential impacts to oak trees regulated by this ordinance be preceded by a permit application to the County that includes a detailed oak tree report. Mitigation for impacts to oak trees is usually required as a condition of an Oak Tree Permit issued by the County. **MM-BIO-7** (Protected Tree Inventory) would require a protected tree inventory and permitting, if necessary, for potentially impacted trees prior to construction. Therefore, impacts to oak trees protected under the County of Los Angeles Oak Tree Ordinance would be less than significant with implementation of **MM-BIO-7**.

### City of Santa Clarita Oak Tree Ordinance

No oak trees were observed in the BSA at work locations occurring within the City of Santa Clarita. Therefore, no impacts to oak trees protected under the City of Santa Clarita Oak Tree Ordinance would occur as a results of project implementation.

### City of Los Angeles Protected Tree Ordinance

Blue elderberry shrubs that may meet the size criteria for protection under this ordinance were observed in the BSA at work locations occurring within the City of Los Angeles (Figure 4A).

The City of Los Angeles Protected Tree Ordinance requires that all potential impacts to tree or shrub species regulated by this ordinance be preceded by a permit application to the City that includes a detailed protected tree and shrub report. Mitigation for impacts to protected trees and shrubs is usually required as a condition of a protected tree permit issued by the City of Los Angeles. **MM-BIO-7** would require a protected tree and shrub inventory and permitting, if necessary, for potentially impacted trees prior to construction. Therefore, impacts to trees and shrubs protected under the City of Los Angeles Protected Tree Ordinance would be less than significant with implementation of **MM-BIO-7**.

### California Desert Native Plants Act

In addition to western Joshua tree, two desert native plant species were mapped within the BSA: Wiggins' cholla and chaparral yucca. Three Wiggins' cholla were mapped within the BSA at Tower 32-4 (Figure 4Q); 27 chaparral yucca individuals were mapped within the BSA at Tower Span 33-2 to 33-3 (Figure 4P); one chaparral yucca individual was mapped within the BSA at Tower Span 41-3 to 41-4 (Figure 4L); and 12 chaparral yucca individuals

were mapped within the BSA at Tower 43-2 (Figure 4K). Of these, up to 23 chaparral yucca may require salvage and relocation. Western Joshua tree occurs within the project; however, no removal or trimming is necessary for project implementation. Accordingly, a permit pursuant to the California Desert Native Plant Act is not necessary for this species.

For all desert native plants that cannot be avoided, the California Desert Native Plants Act requires that all impacts to protected native desert plants regulated by this law be preceded by issuance of a permit by the County in accordance with Food and Agricultural Code Division 23. **MM-BIO-8** (Relocation of Desert Native Plants) would require submittal of a permit application form and an applicable fee to the County of Los Angeles, proper handling of tags or seals issued with the permit, and additional actions that would ensure successful transplantation of salvaged plants. Therefore, impacts to plant species protected under the California Desert Native Plants Act would be less than significant with implementation of **MM-BIO-8**.

## 6.7 Impact BIO-6: HCP/NCCP

**No Impact.** The project is not located within an area covered under any habitat conservation plan (HCP), natural community conservation plan (NCCP), or other approved local, regional, or state conservation planning areas (CDFW 2019). Therefore, the project would not be in conflict with any such plan. Accordingly, no impact would occur and no mitigation is necessary.

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# 7 Mitigation

The following mitigation measures shall be implemented during the proposed project to reduce the significant impacts identified in Chapter 6 to a less-than-significant level.

MM-BIO-1 Biological Monitoring. To prevent impacts to areas outside the limits of disturbance, a qualified biologist shall be present on site to monitor during initial ground disturbance or vegetation removal activities.

Biological monitoring shall include the following tasks and responsibilities:

1. Communicate with LADWP and the contractor prior to initial ground disturbance and vegetation removal at each work location to reduce conflict between the timing and location of construction activities with other mitigation requirements (e.g., seasonal surveys for nesting birds and/or Crotch bumble bee). Discuss installation of temporary fencing and/or staking to demarcate grading limits; avoidance of vegetation clearing or grubbing in slender mariposa lily occupied habitat outside of proposed grading areas at Tower Span 65-4 to 66-1 and Tower Span 57-1 to 57-2; avoidance of western Joshua trees at Tower 32-4; and avoidance of any ground disturbing activities (e.g., vegetation clearing, grubbing, and driving outside of established access areas) in western Joshua tree occupied habitat (186-feet buffer from individuals) or Joshua tree woodland at Tower 32-4.
2. Conduct a pre-construction briefing at the tailgate with construction personnel prior to vegetation removal or initial ground disturbance to outline the biological resources present at the subject work location, prohibition of littering, locations of covered trash receptacles, work location specific disturbance limits, procedures/training for minimizing harm to or harassment of wildlife encountered during construction.
3. Conduct pre-construction sweeps where construction work is scheduled for the day in areas with suitable habitat to support special-status wildlife or plants (i.e., disturbed habitat, non-native grasslands, herbaceous fields, coastal or desert scrub, chaparral, California juniper or Joshua tree woodland). Flush wildlife species from occupied areas immediately prior to vegetation-clearing and earth-moving activities during pre-construction sweeps.
4. Verify that the construction contractor QSP is implementing the SWPPP BMPs and maintaining physical BMPs, as well as the stormwater management practices specifically for protection of biological resources outlined in MM-BIO-3. Perform regular inspections of fencing and erosion control measures (daily during rain events, if safe).
5. Supervise and conduct regular spot checks during construction work, focusing on areas determined to have potential to support special-status species (as determined by a qualified biologist), to ensure against direct and indirect impacts to biological resources that are intended to be protected and preserved.
6. **No-Grubbing Zones for Slender Mariposa Lily:** Ensure avoidance of slender mariposa lily occupied habitat to be preserved in place, located where slender mariposa lily is mapped outside of proposed grading area. The project originally proposed for vegetation clearance in areas 75 feet from all tower span grading areas. Vegetation clearance must be avoided within the no-grubbing zones located at Tower Span 65-4 to 66-1 and Tower Span 57-1 to 57-2.

7. **Joshua Tree and Desert Native Plant Individual Flagging:** Ensure avoidance of western Joshua trees and other desert native plants to be preserved in place. Western Joshua trees are present within the BSA at Tower 32-4. Take of western Joshua tree will be avoided as no Incidental Take Permit has been issued for the project under the Western Joshua Tree Conservation Act. Prior to the commencement of construction, a qualified biologist (someone with at least three years of conducting botanical surveys in the Mojave Desert) shall flag (using highly visible fluorescent flagging tape) western Joshua tree, chaparral yucca, Wiggin's cholla, and any other species covered by the California Desert Native Plant Act within the project footprint and a 100-foot buffer for avoidance.
8. **Relocation of wildlife.** If slow-moving and/or fossorial special-status species that do not easily flush (e.g., California legless lizard, Northern California legless lizard, California glossy snake, coastal whiptail, Blainville's horned lizard, San Diego desert woodrat, and/or southern grasshopper mouse) are detected in the work area, a biologist possessing an appropriate California scientific collecting permit to handle special-status species will capture and relocate individuals to nearby undisturbed areas with suitable habitat outside of the construction area, but as close to their origin as possible. All wildlife moved during project activities shall be documented by the biologist on site.
9. **Dust control monitoring.** Periodically monitor the construction site to see that dust is minimized. If the biological monitor determines that dust is adversely affecting special-status species, the monitor shall require the construction personnel to implement best available control measures to reduce dust. Examples of such best available control measures include periodic watering of work areas, application of environmentally safe soil stabilization materials, and/or roll compaction.
10. **Lighting monitoring.** Periodically monitor the construction site to verify that artificial security light fixtures, if present, are directed away from open space and are shielded.
11. At the end of each workday, any open holes (including large/steep excavations) shall be inspected by the on-site biologist and subsequently fully covered to prevent entrapment of wildlife species. If fully covering the excavations is impractical, ramps will be used to provide a means of escape for wildlife that enter the excavations, or open holes will be securely fenced with exclusion fencing. If common wildlife species are found in a hole, the biological monitor shall immediately be informed and the animal(s) shall be removed. If the animal(s) is/are a sensitive species that require(s) special handling authorization, a qualified biologist (agency-permitted or approved to handle a specific species) shall remove the animal before resuming work in that immediate area. The applicant shall specify the requirement to cover all open holes, create ramps, or install exclusion fencing around open holes in its agreements with all construction contractors.

MM-BIO-2 Demarcation of Disturbance Limits. To prevent inadvertent disturbance to sensitive vegetation and species adjacent to the proposed project area, temporary fencing and/or staking shall be installed prior to construction activities around the perimeter of the work areas, as feasible with topography and large vegetation. All construction activities, including equipment staging and maintenance, shall be conducted within the marked disturbance limits to prevent inadvertent disturbance to sensitive biological resources outside the limits of work. The marked disturbance limits shall be maintained throughout vegetation removal and grading and any windblown trash generated by the project that collects on the fence will be regularly removed. Silt fencing shall be

installed at disturbance limits where known sensitive biological resources (e.g., aquatic resources, occupied slender mariposa lily habitat) occur downslope. No-grubbing zones located at Tower Span 65-4 to 66-1 and Tower Span 57-1 to 57-2 must be clearly marked for avoidance. Additionally, western Joshua trees, chaparral yucca, Wiggin's cholla, and any other species covered by the California Desert Native Plant Act within the project footprint and a 100-foot buffer must be flagged (using highly visible fluorescent flagging tape) for avoidance prior to the start of construction. Any additional special-status biological resources discovered during pre-construction surveys or during construction monitoring, such as active nests, additional rare plants, occupied American badger dens, or Crotch's bumble bee nests shall be demarcated with pin flags, flagging tape, or flagging and stakes. Presence of these avoidance areas shall be promptly communicated to LADWP and the construction contractor.

MM-BIO-3 Best Management Practices. Prior to proposed project construction, LADWP or its construction contractor will develop a project-specific Stormwater Pollution Prevention Plan requiring erosion and sediment control BMPs in accordance with SWRCB permitting requirements. Other site-specific BMPs should include but would not be limited to: (1) regular water spraying to minimize fugitive dust during earthmoving; (2) spill containment underneath heavy equipment stored on site; (3) secondary containment of all hazardous materials during construction activities; and (4) prohibition of littering, containment of trash in established covered receptacles, and removal of all food-related trash from construction sites daily. In addition, all personnel shall be advised of their responsibility under the applicable fire laws and regulations, including precautions and implementation of practical measures to report and suppress fires during construction.

MM-BIO-4 Crotch Bumble Bee Pre-Construction Surveys. A pre-construction survey for Crotch bumble bee shall be conducted within the construction footprint where suitable habitat areas exist prior to the start of initial vegetation removal or initial grading activities occurring during the Crotch bumble bee nesting period (February 1 through October 31). The survey shall ensure that no nests for Crotch bumble bee are located within the construction area. The pre-construction survey shall include 1) a habitat assessment and 2) focused surveys, both of which will be based on recommendations described in the "Survey Considerations for CESA Candidate Bumble Bee Species," released by the CDFW on June 6, 2023, or the most current at the time of construction.

The habitat assessment shall, at a minimum, include historical and current species occurrences; document potential habitat onsite including foraging, nesting, and/or overwintering resources; and identify which plant species are present. For the purposes of this mitigation measure, nest resources are defined as abandoned small mammal burrows, bunch grasses with a duff layer, thatch, hollow trees, brush piles, and man-made structures that may support bumble bee colonies such as rock walls, rubble, and furniture. If nesting resources are present in the impact area, focused surveys will be conducted.

The focused survey will be performed by a biologist with expertise in surveying for bumble bees and include at least three (3) survey passes that are not on sequential days or in the same week, preferably spaced two to four weeks apart. The timing of these surveys shall coincide with the Colony Active Period (April 1 through August 31 for Crotch bumble bee). Surveys may occur between 1 hour after sunrise and 2 hours before sunset on warm, not hot, sunny days (between 65- and 90-degrees Fahrenheit). Surveys will not be conducted during wet conditions (e.g., foggy, raining, or drizzling) and

surveyors will wait at least 1 hour following rain. Surveys may be conducted earlier if other bees or butterflies are flying. Surveys shall not be conducted when it is windy (i.e., sustained winds greater than 8 mph). Within non-developed habitats, the biologist shall look for nest resources suitable for bumble bee use. Ensuring that all nest resources receive 100% visual coverage, the biologist shall watch the nest resources for up to five minutes, looking for exiting or entering worker bumble bees. Worker bees should arrive and exit an active nest site with frequency, such that their presence would be apparent after five minutes of observation. If a bumble bee worker is detected, it will be identified to species level. Biologists should be able to view several burrows at one time to sufficiently determine if bees are entering/exiting them depending on their proximity to one another. It is up to the discretion of the biologist regarding the actual survey viewshed limits from the chosen vantage point which would provide 100% visual coverage; this could include a 30- to 50-foot-wide area. If a nest is suspected, the surveyor can block the entrance of the possible nest with a sterile vial or jar until nest activity is confirmed (no longer than 30 minutes).

Identification will include trained biologists netting/capturing the representative bumble bee in appropriate insect nets, per the protocol in U.S. National Protocol Framework for the Inventory and Monitoring of Bees. The bee shall be placed in a clear container for observation and photographic documentation if possible. If bumble bee identifying characteristics cannot be adequately captured in the container due to movement, the container will be placed in a cooler with ice until the bumble bee becomes inactive (generally within 15 minutes). Once inert, the bumble bee shall be removed from the container and placed on a white sheet of paper or card for examination and photographic documentation. The bumble bee shall be released into the same area from which it was captured upon completion of identification. Based on implementation of this method on a variety of other bumble bee species, they become active shortly after removal from the cold environment, so photography must be performed quickly.

If Crotch bumble bee nests are not detected, no further mitigation would be required. The mere presence of foraging Crotch bumble bees would not require implementation of additional minimization measures because they can forage up to 10 kilometers from their nests. If nest resources occupied by Crotch bumble bee are detected within the construction area, no construction activities shall occur within 50 feet of the nest, or as determined by a qualified biologist through evaluation of topographic features or distribution of floral resources. The nest resources will be avoided for the duration of the Crotch bumble bee nesting period (February 1 through October 31). Outside of the nesting season, it is assumed that no live individuals would be present within the nest as the daughter queens (gynes) usually leave by September, and all other individuals (original queen, workers, males) die. The gyne is highly mobile and can independently disperse to outside of the construction footprint to surrounding open space areas that support suitable hibernacula resources.

A written survey report will be submitted to the City and CDFW within 30 days of the pre-construction survey. The report will include survey methods, weather conditions, and survey results, including a list of insect species observed and a figure showing the locations of any Crotch bumble bee nest sites or individuals observed. The survey report will include the qualifications/resumes of the surveyor(s) and approved biologist(s) for identification of photo vouchers, detailed habitat assessment, and photo vouchers. If Crotch bumble bee nests are observed, the survey report will

also include recommendations for avoidance, and the location information will be submitted to the CNDDB at the time of, or prior to, submittal of the survey report.

If the above measures are followed, it is assumed that the project shall not need to obtain authorization from CDFW through the California Endangered Species Act Incidental Take Permit process. If the nest resources cannot be avoided during the nesting period, as outlined in this measure, the project applicant will consult with CDFW regarding the need to obtain an Incidental Take Permit.

MM-BIO-5 Nesting Bird Avoidance. Project construction shall be conducted in compliance with the conditions set forth in the MBTA and California Fish and Game Code to protect active bird/raptor nests. To the maximum extent feasible, vegetation removal shall occur outside of the breeding season for nesting birds (October 1 through January 31) to avoid impacts to nesting birds and raptors. If construction activities must occur during the breeding season for nesting birds (February 1 through September 30), a pre-construction nesting bird survey of the project site and within 500 feet of all impact areas must be conducted to determine the presence/absence of breeding birds and active nests. The nesting bird survey shall be performed by a qualified biologist within 72 hours prior to the start of construction in accordance with the Migratory Bird Treaty Act and California Fish and Game Code Sections 3503, 3503.5, and 3513. If the Biologist does not find any active nests within 500 feet of the impact areas, the vegetation clearing/construction work shall be allowed to proceed.

If an active bird nest is found, the nest shall be flagged and mapped on the construction plans along with an appropriate buffer established around the nest, which will be determined by the biologist based on the species' sensitivity to disturbance. The nest area shall be avoided until the nest is vacated and/or the juveniles have fledged. The nest area shall be demarcated in the field with flagging and stakes or construction fencing. On-site nest monitoring shall also be conducted when construction occurs in close proximity to an active nest buffer. No project activities may encroach into established buffers without the consent of a monitoring biologist. The buffer shall remain in place until it is determined the nestlings have fledged and the nest is no longer considered active.

MM-BIO-6 American Badger Pre-Construction Surveys and Avoidance. A qualified biologist shall conduct a pre-construction survey for suitable American badger dens within 50 feet of the disturbance footprint (or within 100 feet during the maternity season – March 15 through July 31) no earlier than 5 days prior of the commencement of project activities at Tower 32-4, Tower Span 33-2 to 33-3, Tower Span 35-2 to 35-3, Tower Span 38-1 to 38-2, Tower Span 38-4 to 39-1, Tower Span 41-3 to 41-4, Tower 46-4, and Tower Span 49-2 to 49-3. The methods detailed below should also be implemented for any other work locations where suitable badger dens are found during pre-construction sweeps as required per **MM-BIO-1**. A suitable badger den would be characterized by its half-moon or elliptically shaped entrance, a large apron of loose dirt, and claw marks on the sides of the entrance.

**Initial Den Evaluations:** If suitable badger dens are found, each den shall be initially classified as vacant, potentially occupied, or definitely occupied. Pocket mirrors or flashlights may be used as

an aide in evaluating den suitability for badger. For initial evaluations, occupancy would be determined with the following characteristics:

- A vacant den would be determined by the presence of cobwebs over the entrance and within the burrow or entrance obstruction with dirt, debris, or vegetation.
- A potentially occupied den would be determined by the presence of scat, tracks, prey remains, hair, previous apron diggings, dirt berms, matted vegetation near the den entrance, or a lingering musty scent.
- A definitely occupied den would be determined by a dirt apron with fresh diggings and tracks.

Vacant burrows will be immediately collapsed if within the project footprint or covered with a sandbag and wooden board if within the 50-foot buffer. If a definitely occupied den occurs within 50 feet of the disturbance footprint, then the den location shall be clearly marked with fencing or flagged stakes to avoid inadvertent impacts on the den. A biologist must actively monitor the occupied den during all construction activities and shall halt work if a badger leaves the den and is in close proximity to active heavy machinery. If a definitely occupied den occurs within the disturbance footprint, a qualified biologist will implement passive relocation and burrow excavation phases detailed below.

**Reproductive Dens:** If an active natal den (for giving birth) or maternal den (for rearing kits) is identified during the maternity season (March 15 through July 31), construction activities shall be postponed or halted within 100 feet of the reproductive den until it is determined by the project biologist that the young are no longer dependent on the reproductive den. Any active reproductive den shall be clearly marked with flagged stakes in a manner that will not inhibit behavioral activities of the mother and kits (e.g., foraging and dispersal). Passive relocation or den excavation shall not occur if the occupied den is determined to be an active reproductive den.

**Passive Relocation:** Upon completion of camera monitoring and after definite occupancy has been determined, the den shall be progressively blocked with natural materials (i.e., sticks piled in front of the entrances) for the next 3 nights to discourage the badger from continued use. Game cameras that were previously installed during the camera monitoring phase will be left in place to assist in determination of subsequent badger activity and departure from the den.

**Burrow Excavation:** Once the qualified biologist has determined that American badger is not likely to be present after passive relocation efforts have been completed, then the den shall be excavated and backfilled carefully to ensure that no badgers are trapped in the den. If sign of current badger use is discovered, the excavation process shall cease immediately and the camera monitoring protocol will resume. Excavation will resume once the qualified biologist has again determined that American badger is no longer present. Den excavation shall consist of the use of hand shovels and other hand tools, to carefully remove dirt to ensure no harm to American badger that may still be inside the den. Destruction of the den is considered to be completed when the animal has escaped from the partially destroyed den or when the den cavity is fully excavated, filled with dirt, and compacted to ensure that badgers cannot re-enter or use the den during the construction period.

MM-BIO-7 Protected Tree Inventory. Protected trees within the potential impact areas that meet the minimum size requirements defined in the County of Los Angeles Protected Tree Ordinance or City

of Los Angeles Protected Trees Ordinance, as applicable, will be avoided or mitigated through County or City permitting and mitigation requirements. To mitigate for impacts to protected trees that cannot be avoided, permit applications must be submitted and approved prior to construction to the applicable jurisdiction (Los Angeles County and/or City of Los Angeles). Mitigation requirements or permit conditions must be implemented as stipulated in approved permits.

MM-BIO-8 Relocation of Desert Native Plants. If it has been determined that protected native desert plants cannot be avoided, the project applicant shall apply for a permit with the County of Los Angeles for removal or relocation of protected native desert plants as required under California Desert Native Plants Act (Food and Agricultural Code, Division 23). The permit application form shall specify information outlined in the California Desert Native Plant Act Section 80114, which includes but is not limited to, the number and species of native plants to be relocated, a description of the real property from which the plants are to be removed, the destination of the native plants, and the manner in which the plants are to be salvaged. Pursuant to the California Desert Native Plants Act, tags or seals issued by the County must be attached to the native plants at the time of harvesting and before transporting to their permanent relocation site(s) and must remain attached to the plant until transplanted into its ultimate destination. Transport of salvaged plants will occur as prescribed by the County. The following actions shall also be implemented to ensure successful relocation of desert native plants for which salvage is necessary:

- Salvaged plants shall be transplanted expeditiously to either their final on-site location or to an approved off-site area. If the plants cannot be expeditiously taken to their permanent relocation area at the time of excavation, they may be transplanted in a temporary area (stockpiled) prior to being moved to their permanent relocation site(s).
- Transplanted plants shall be watered prior to and at the time of transplantation. Watering of the transplanted plants shall continue until it has been determined that the transplants have become established in the permanent relocation site(s) and no longer require supplemental watering.

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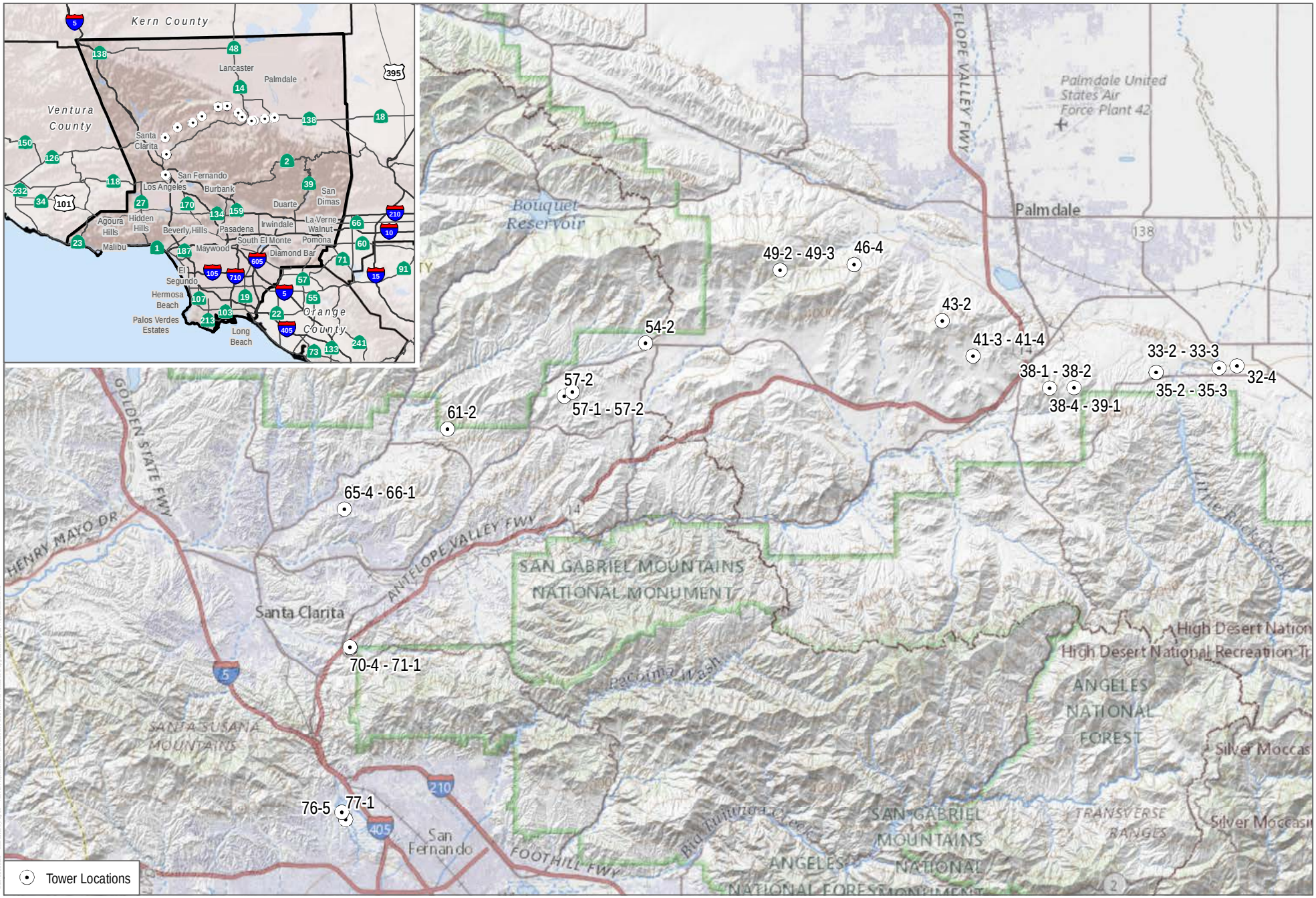
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SOURCE: LADWP; County of Lose Angeles; Open Street Map; USGS National Basemap

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FIGURE 1

Project Location

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SOURCE: LADWP; USDA NRCS; Bing Maps

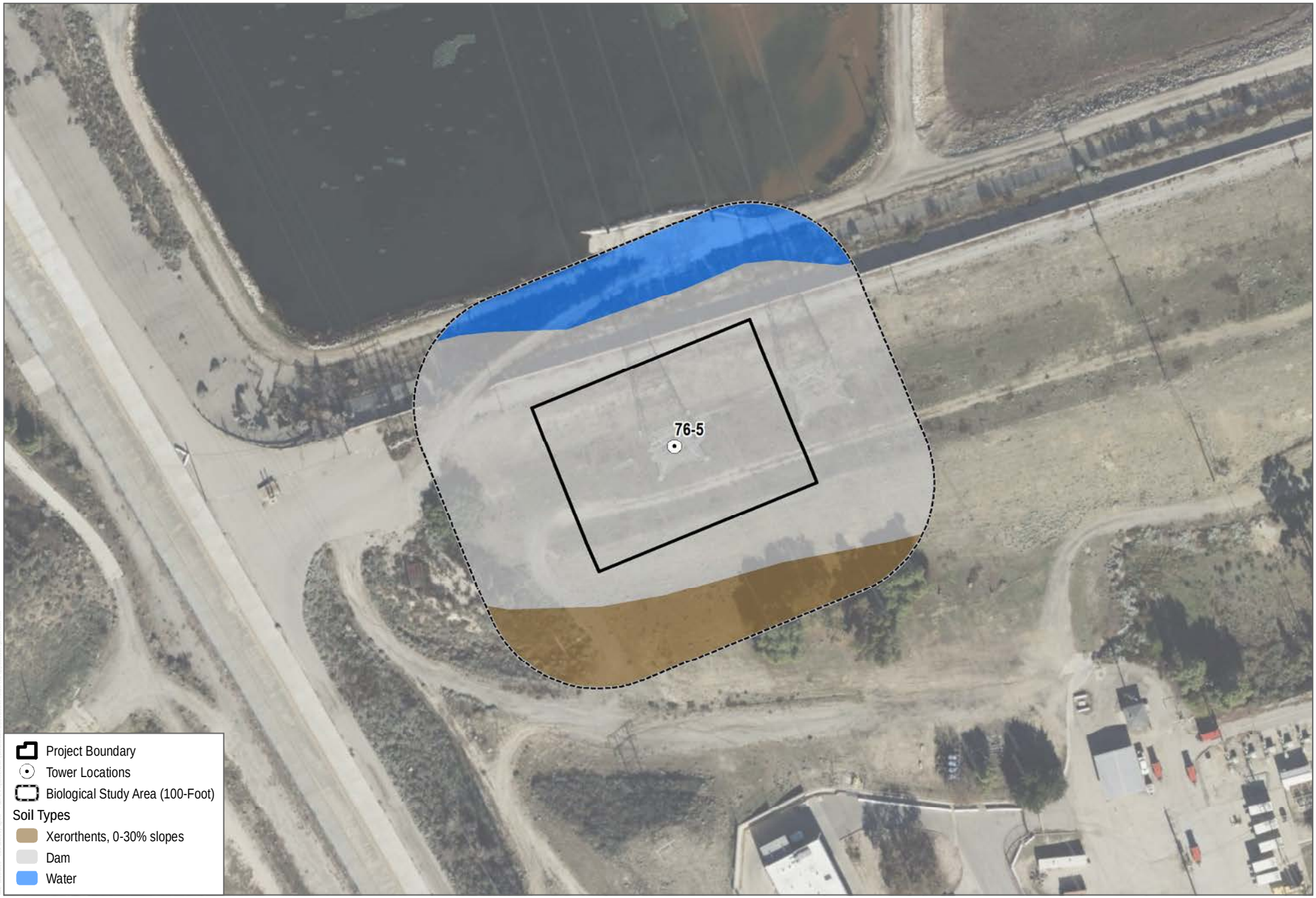
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FIGURE 2A

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

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FIGURE 2B

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

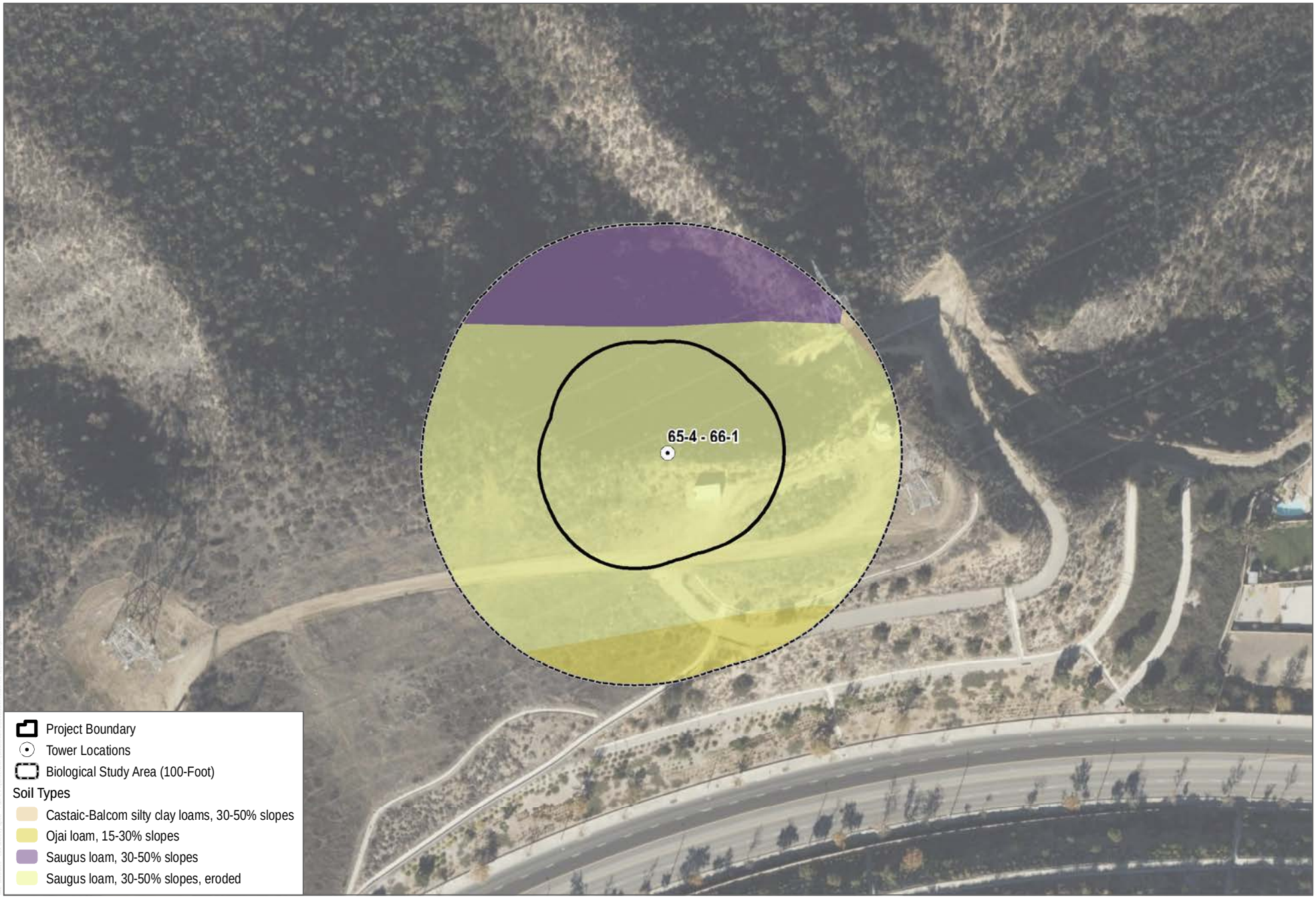
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FIGURE 2C

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

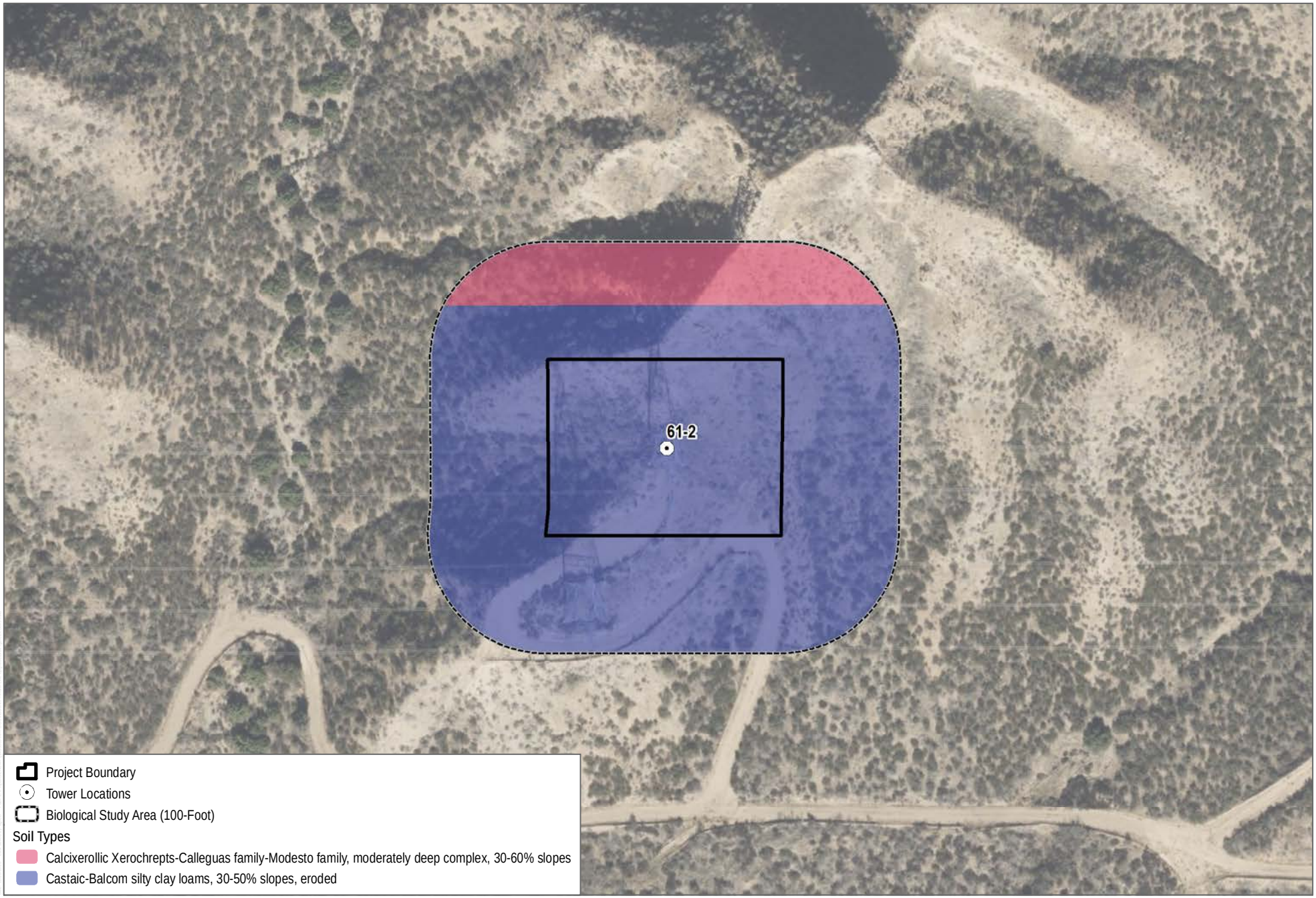
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FIGURE 2D

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

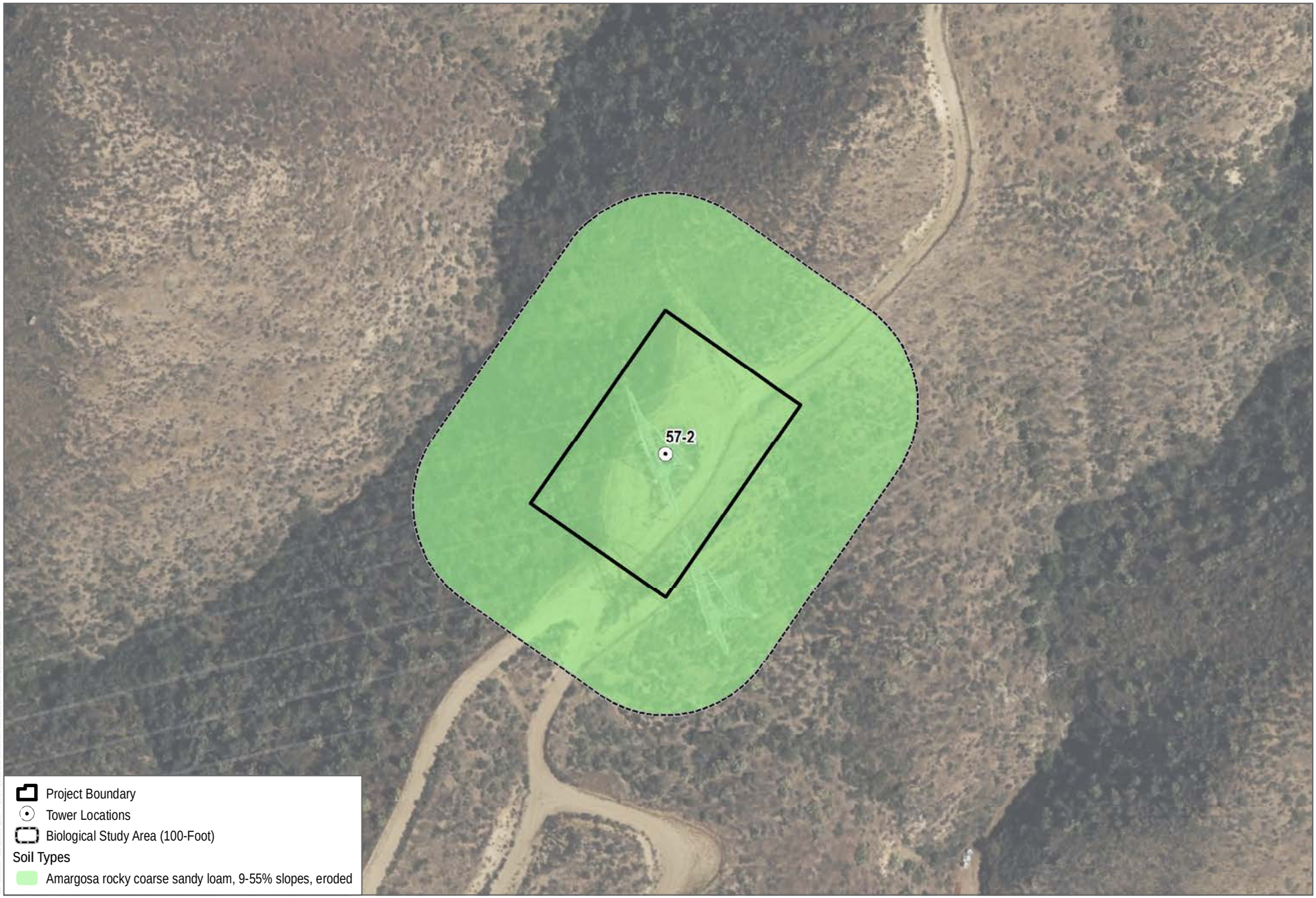
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FIGURE 2E

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

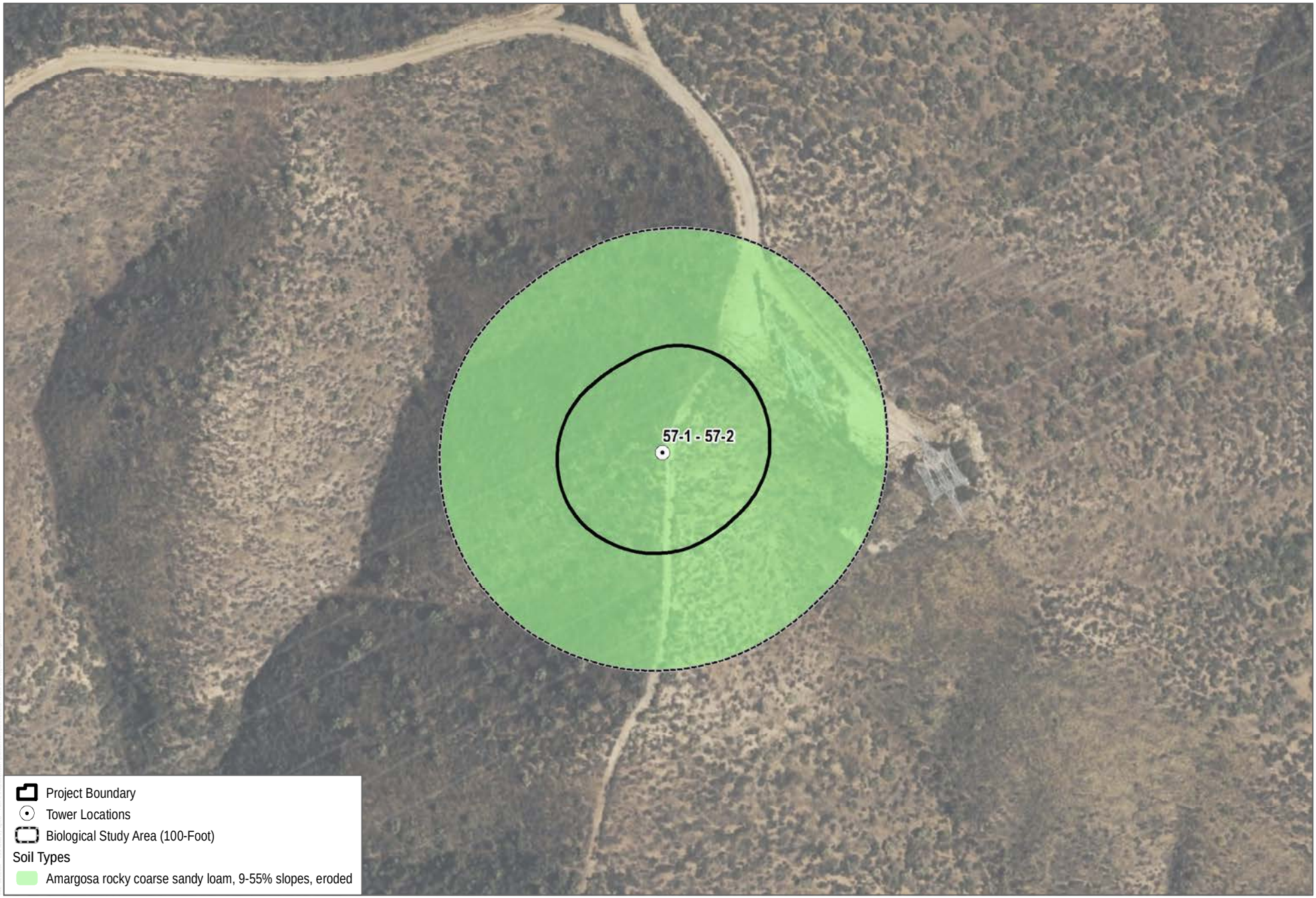
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FIGURE 2F

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

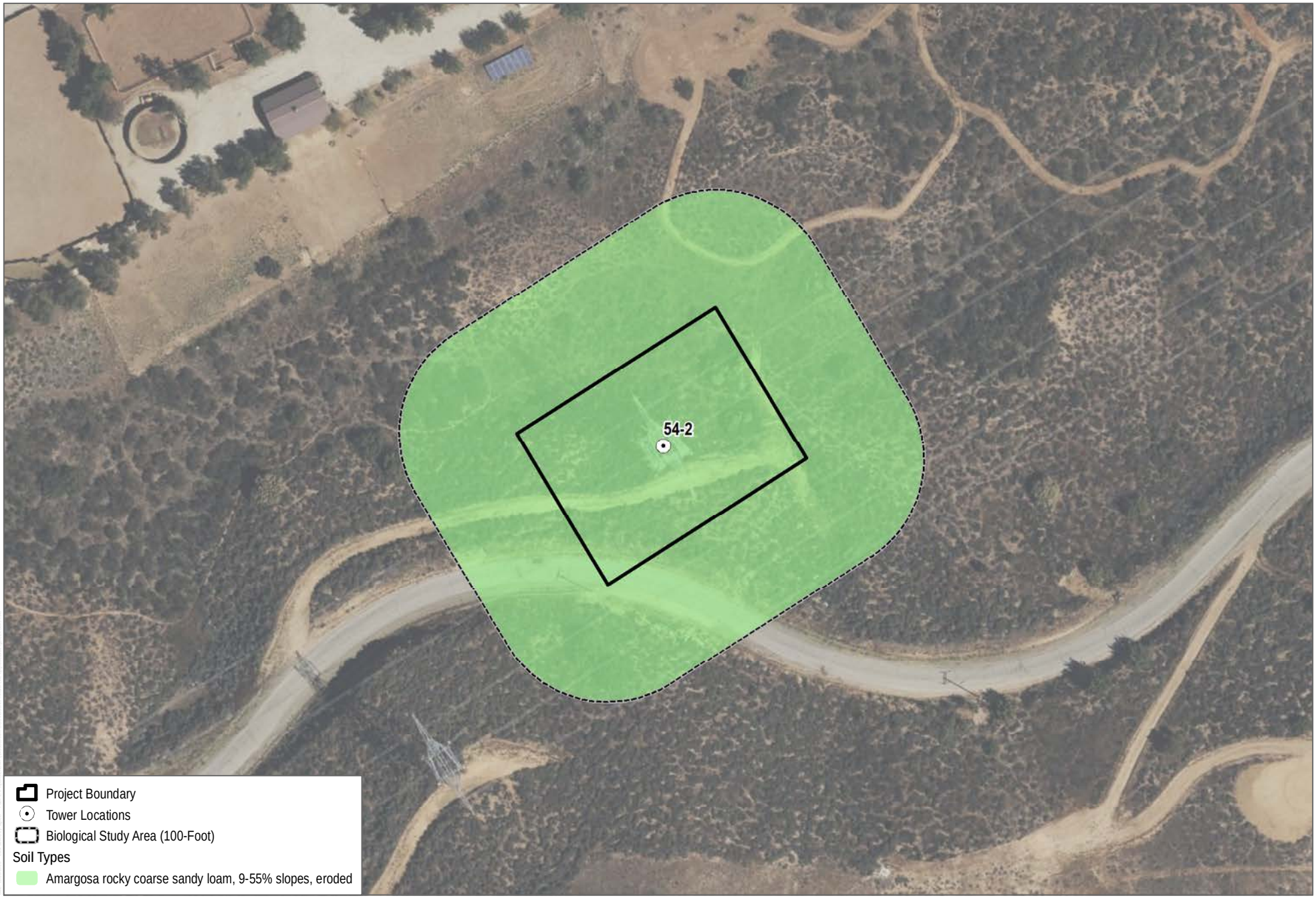
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FIGURE 2G

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

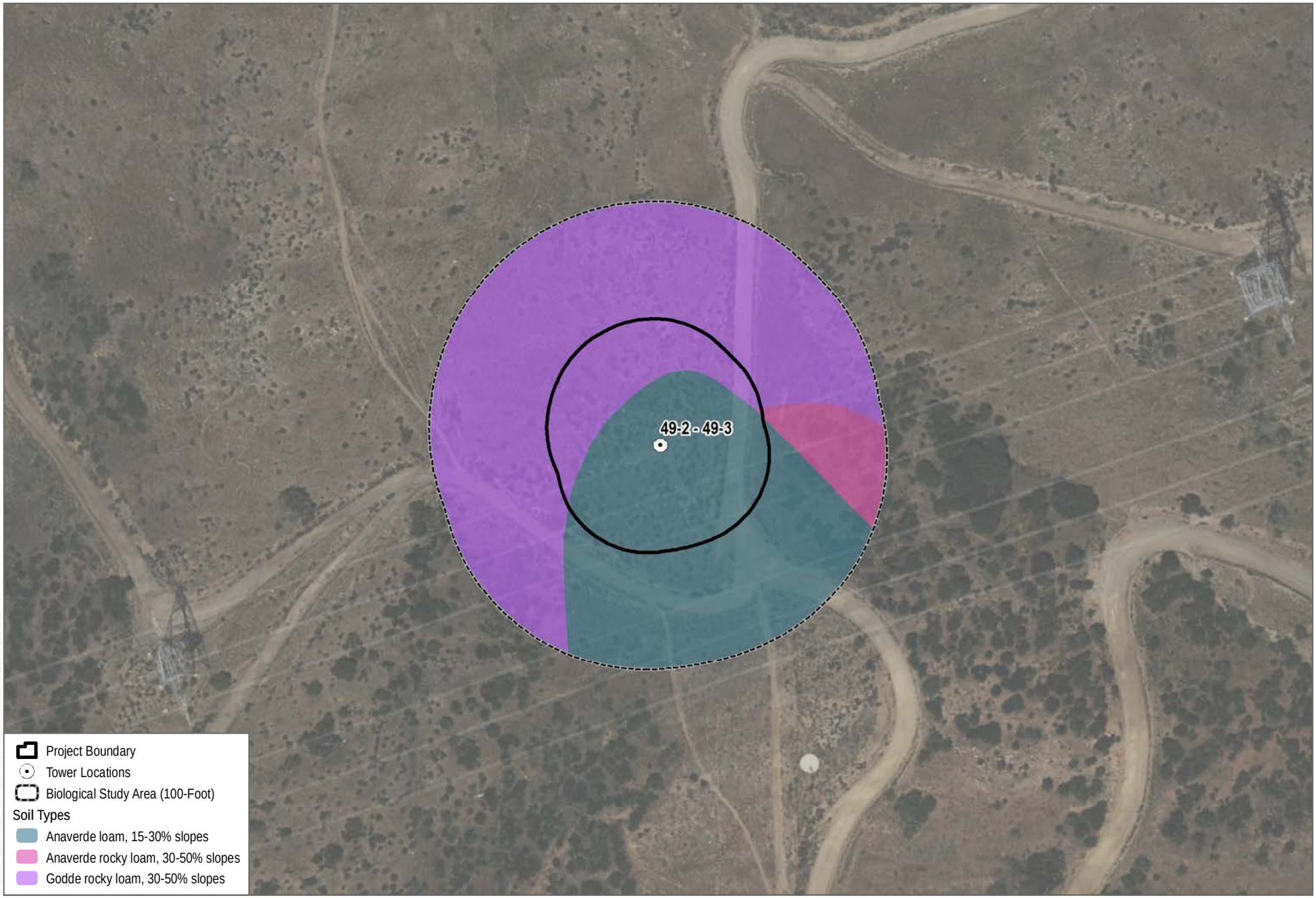
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FIGURE 2H

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

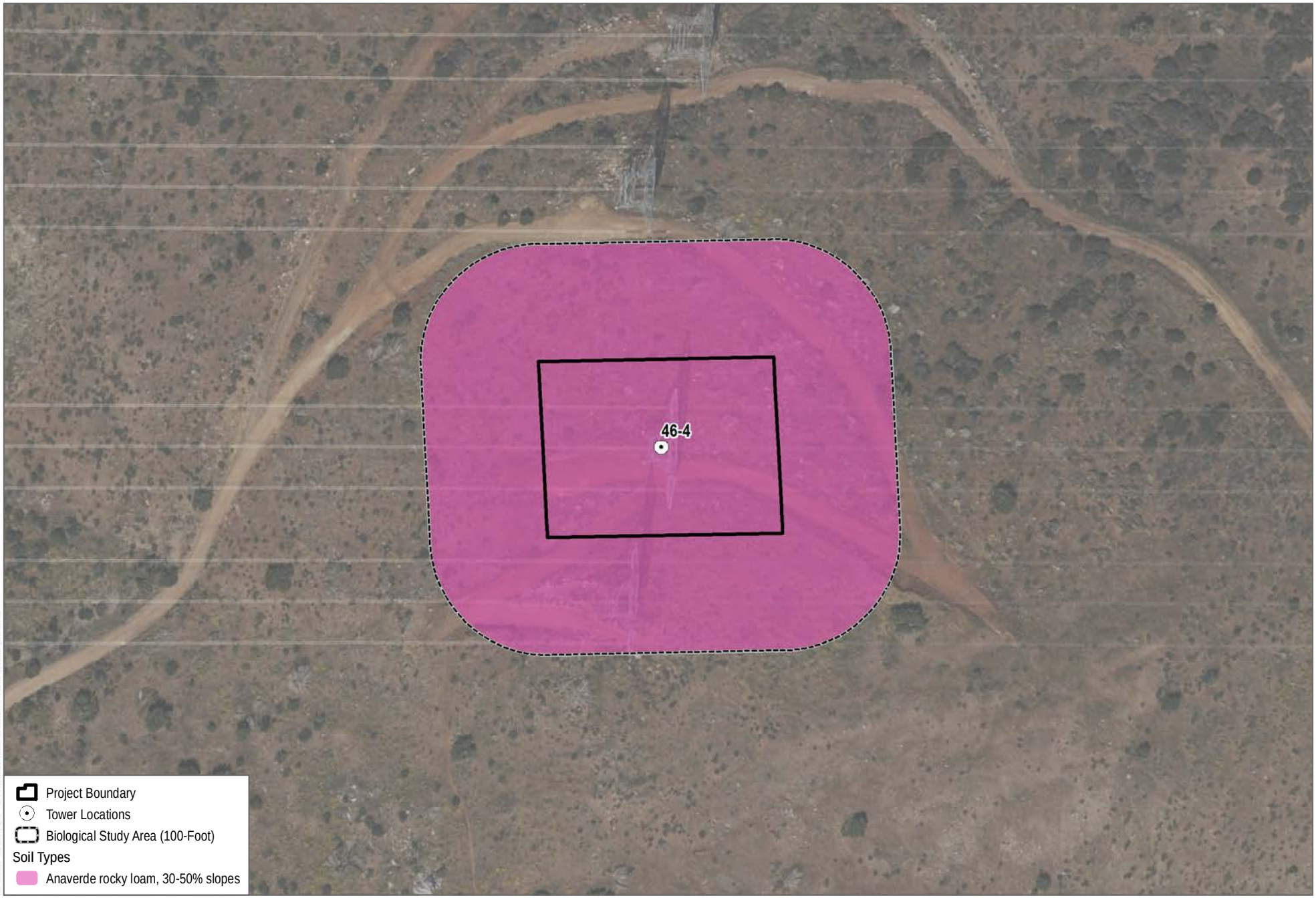
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FIGURE 2I

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

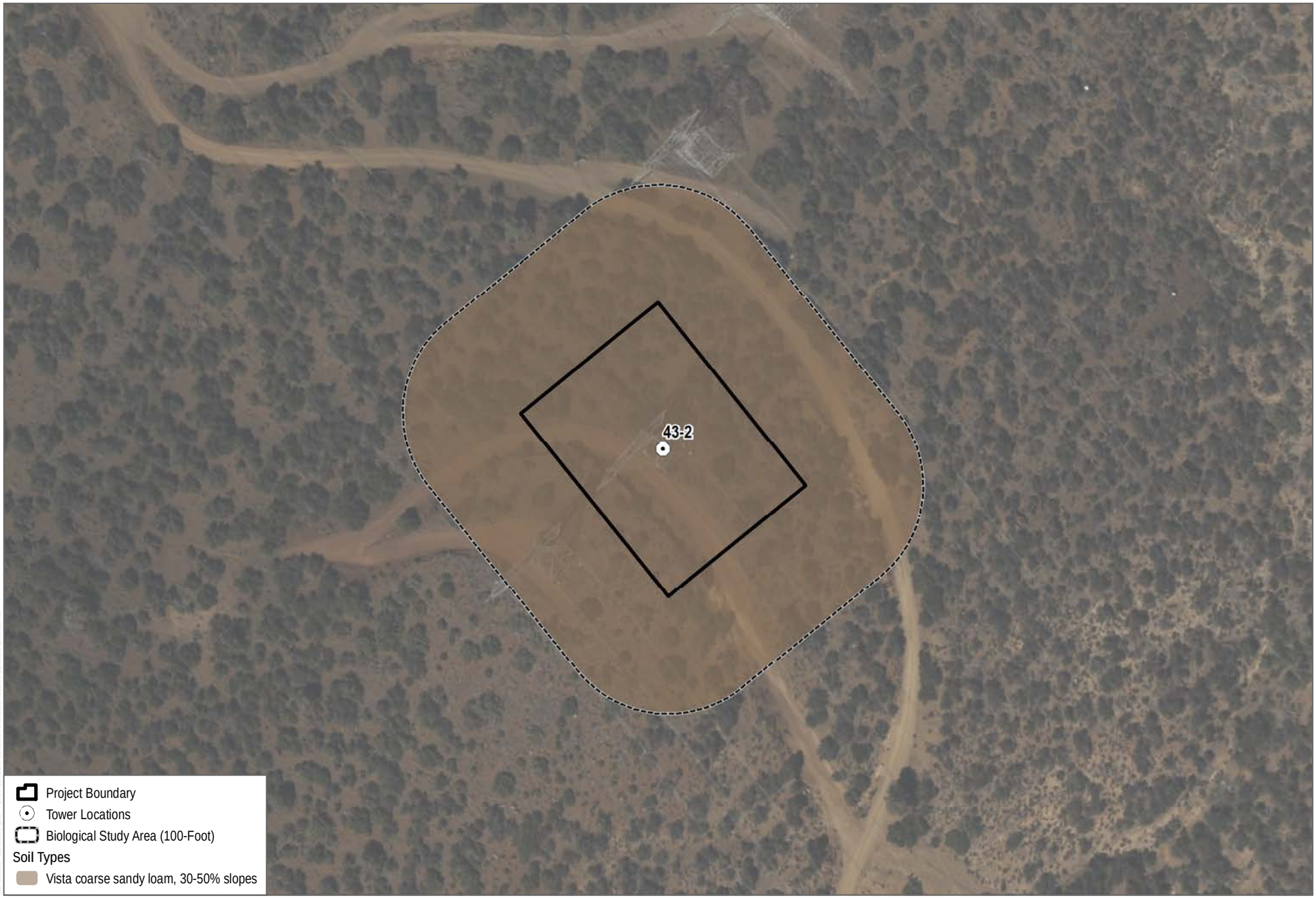
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FIGURE 2J

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

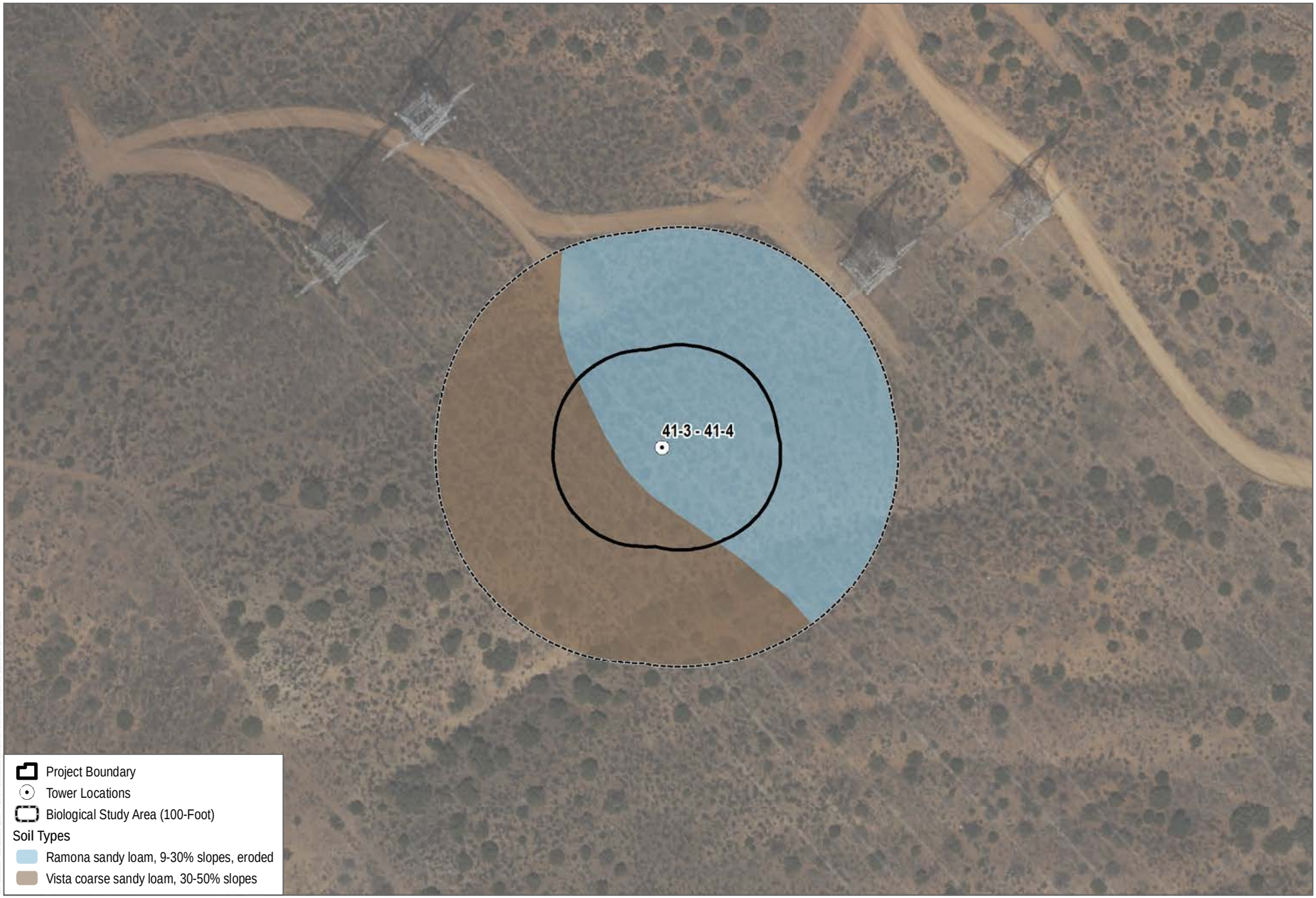
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FIGURE 2K

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

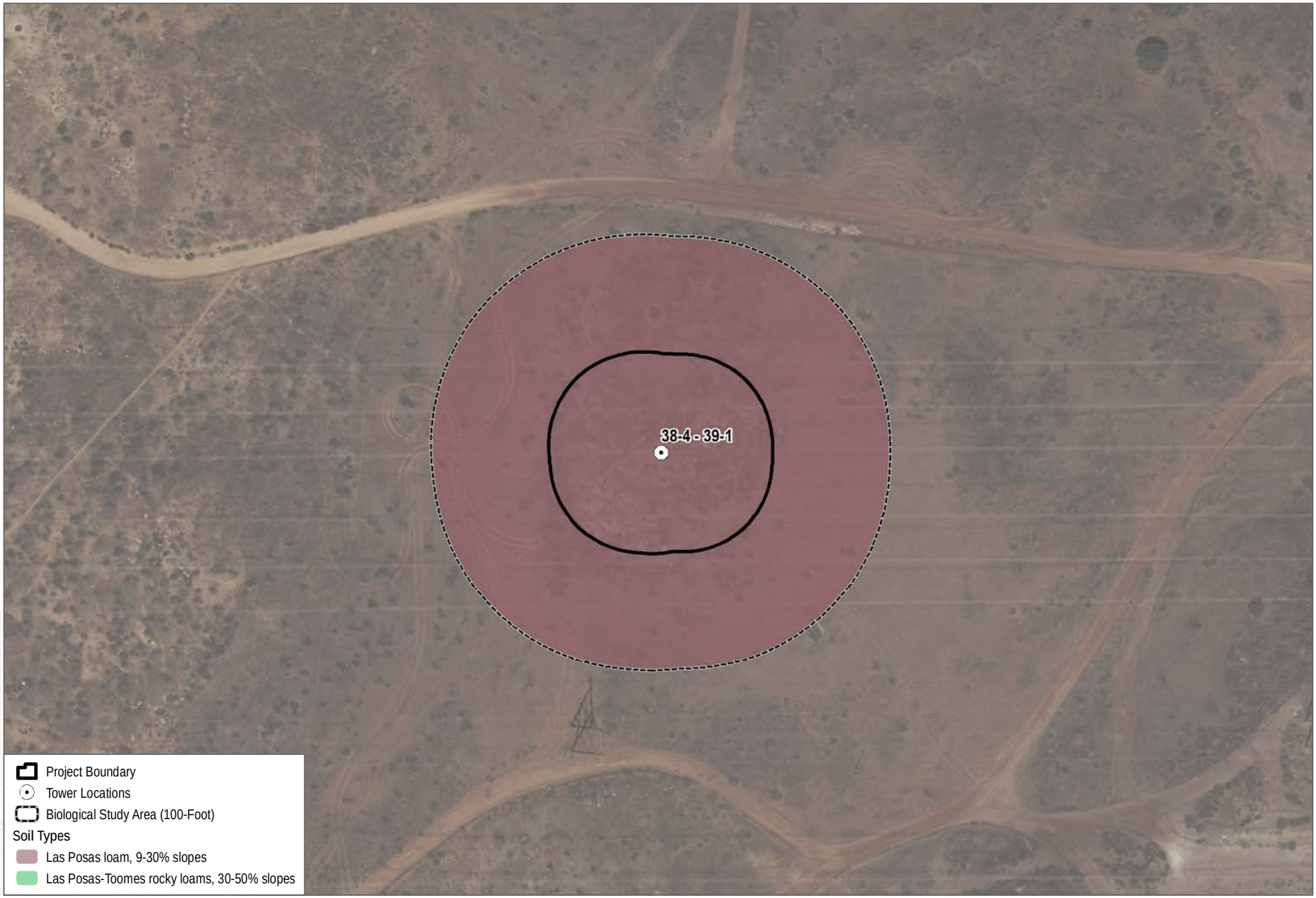
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FIGURE 2L

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

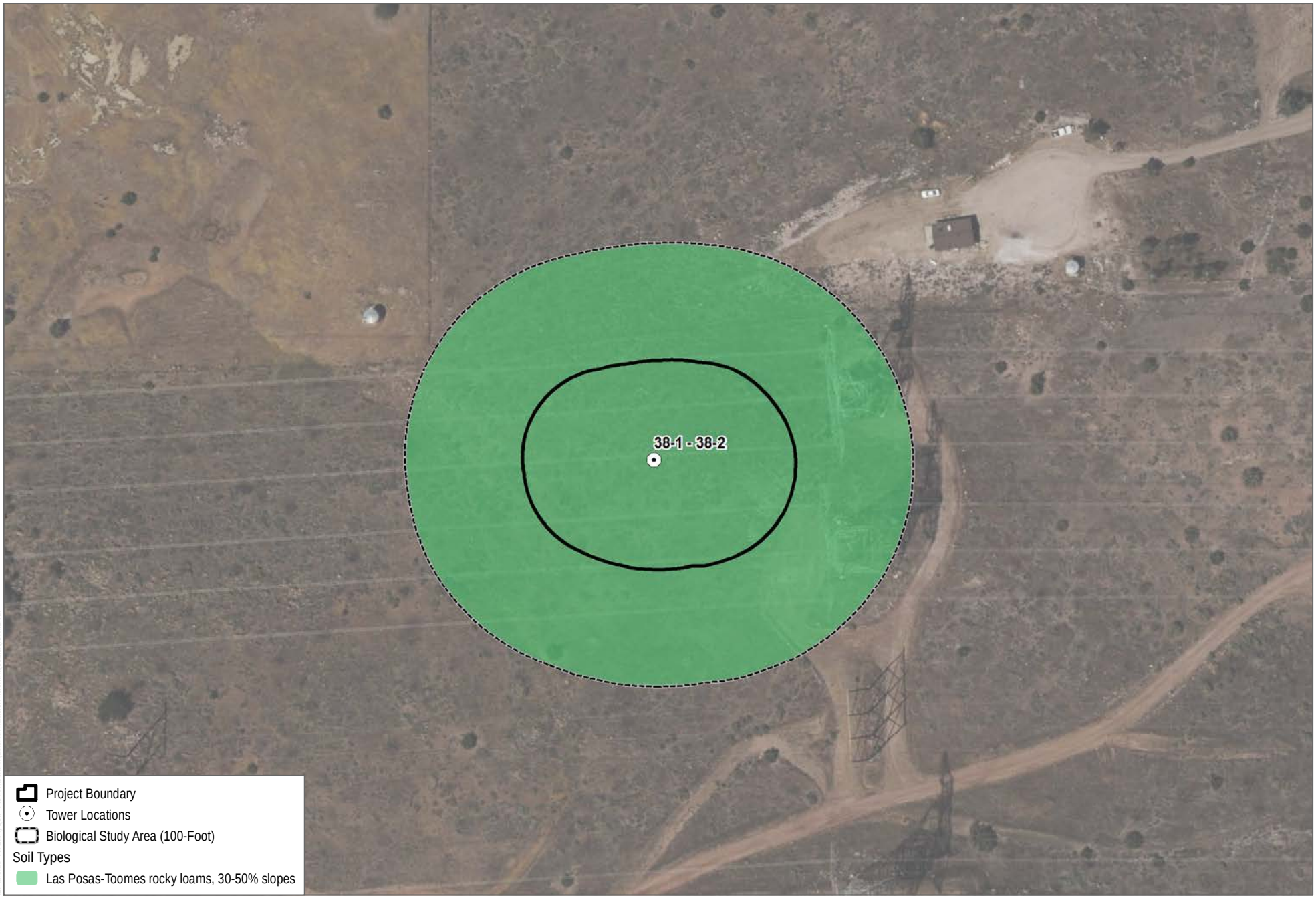
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FIGURE 2M

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

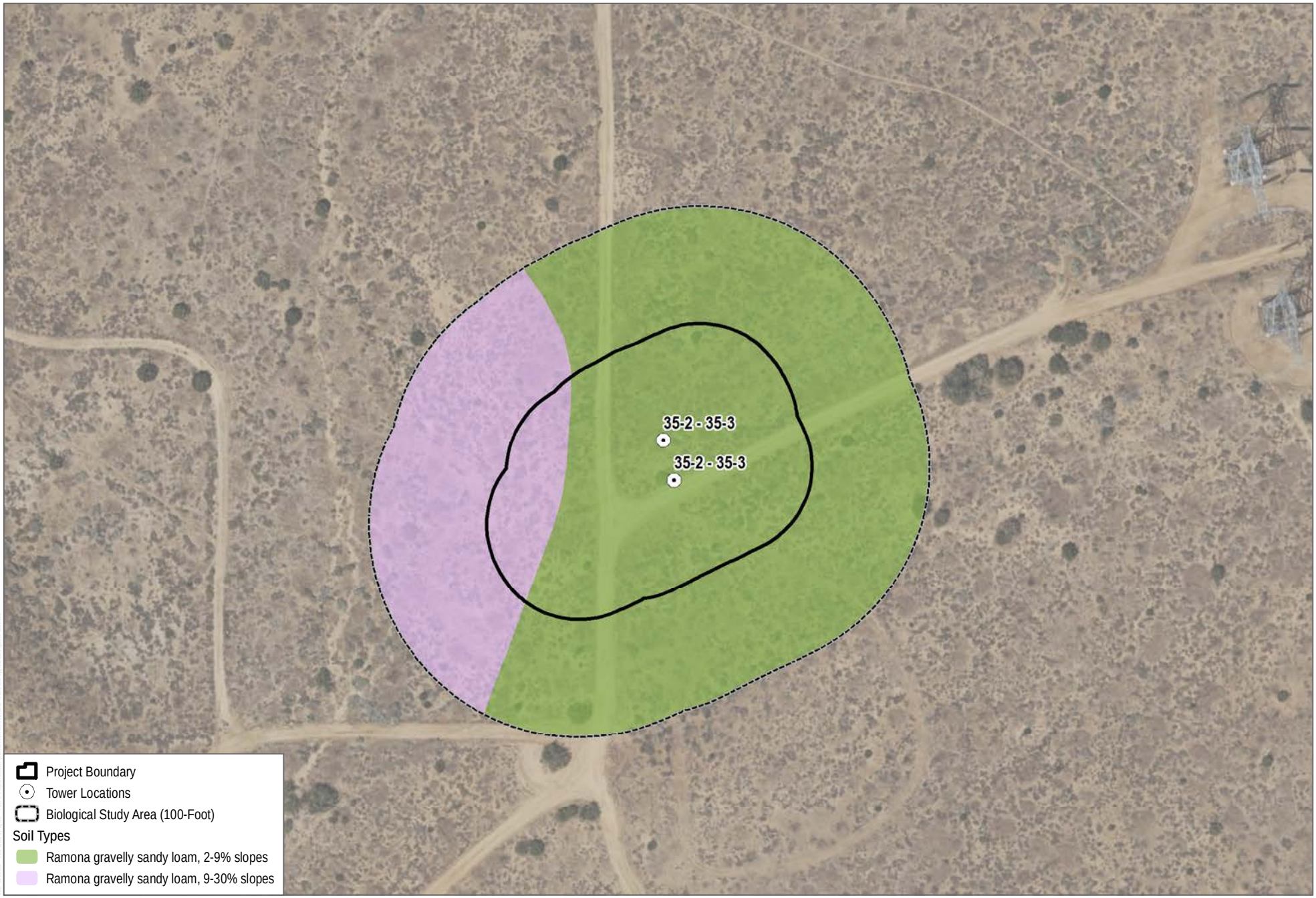
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FIGURE 2N

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

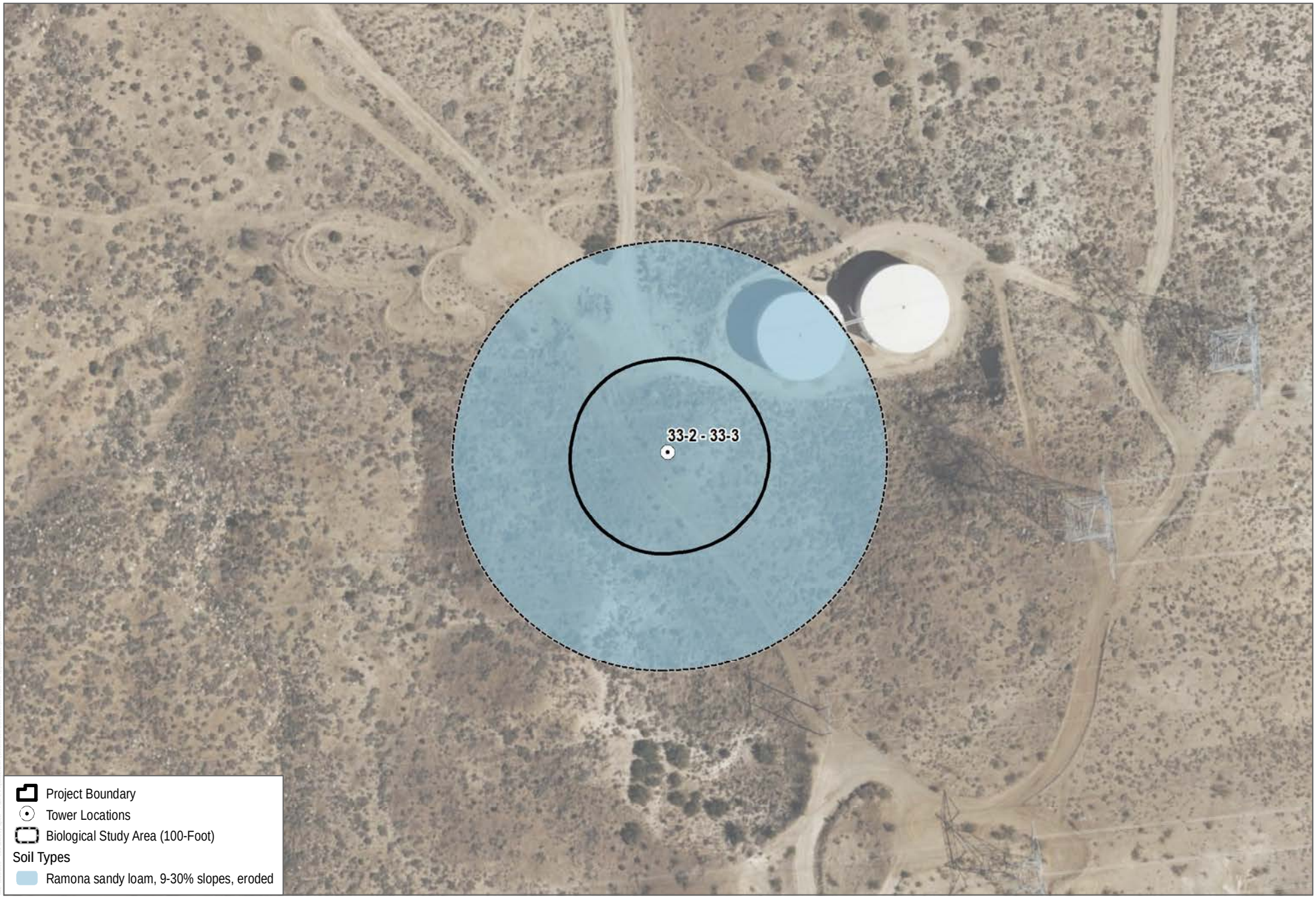
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FIGURE 2O

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

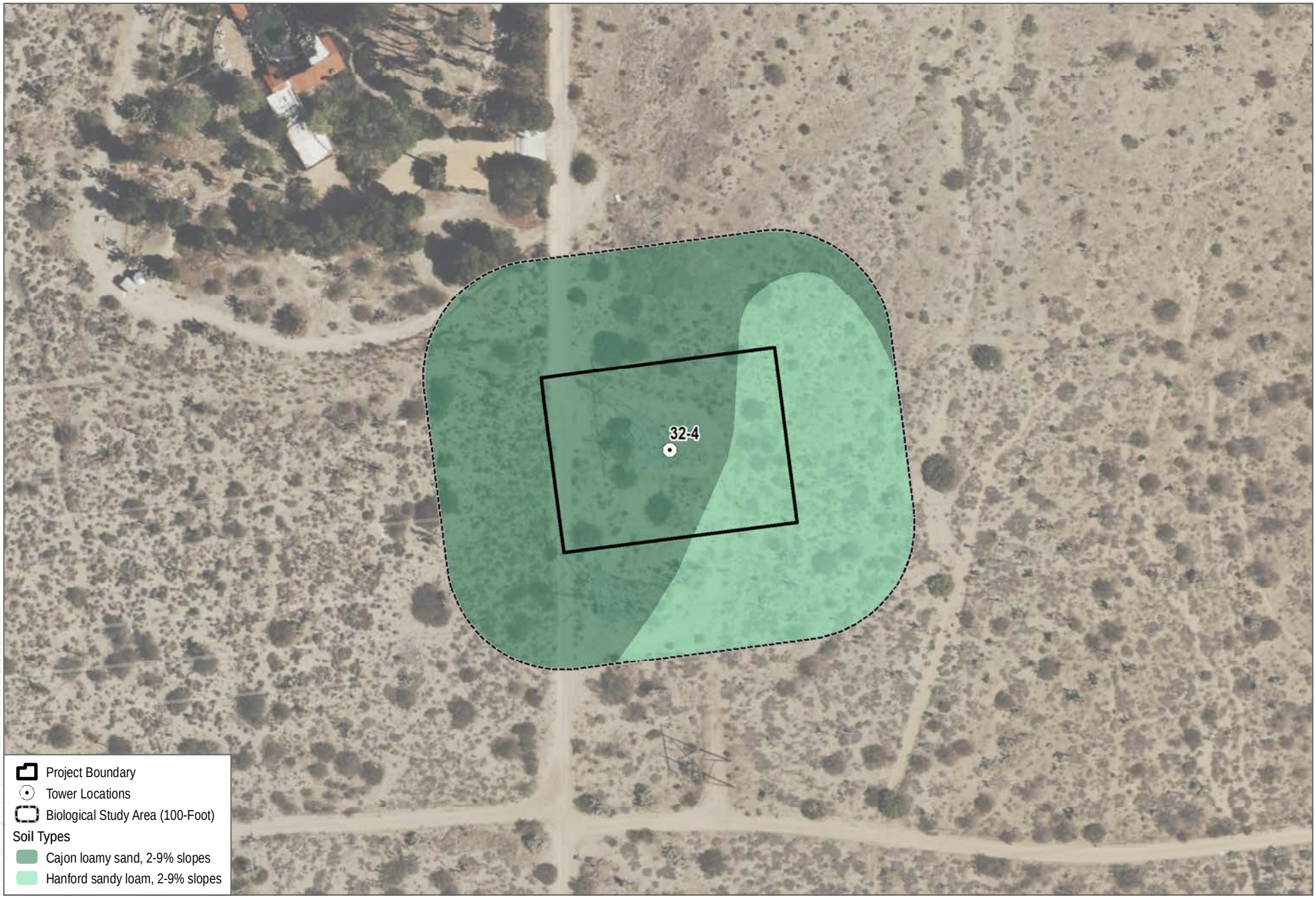
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FIGURE 2P

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; USDA NRCS; Bing Maps

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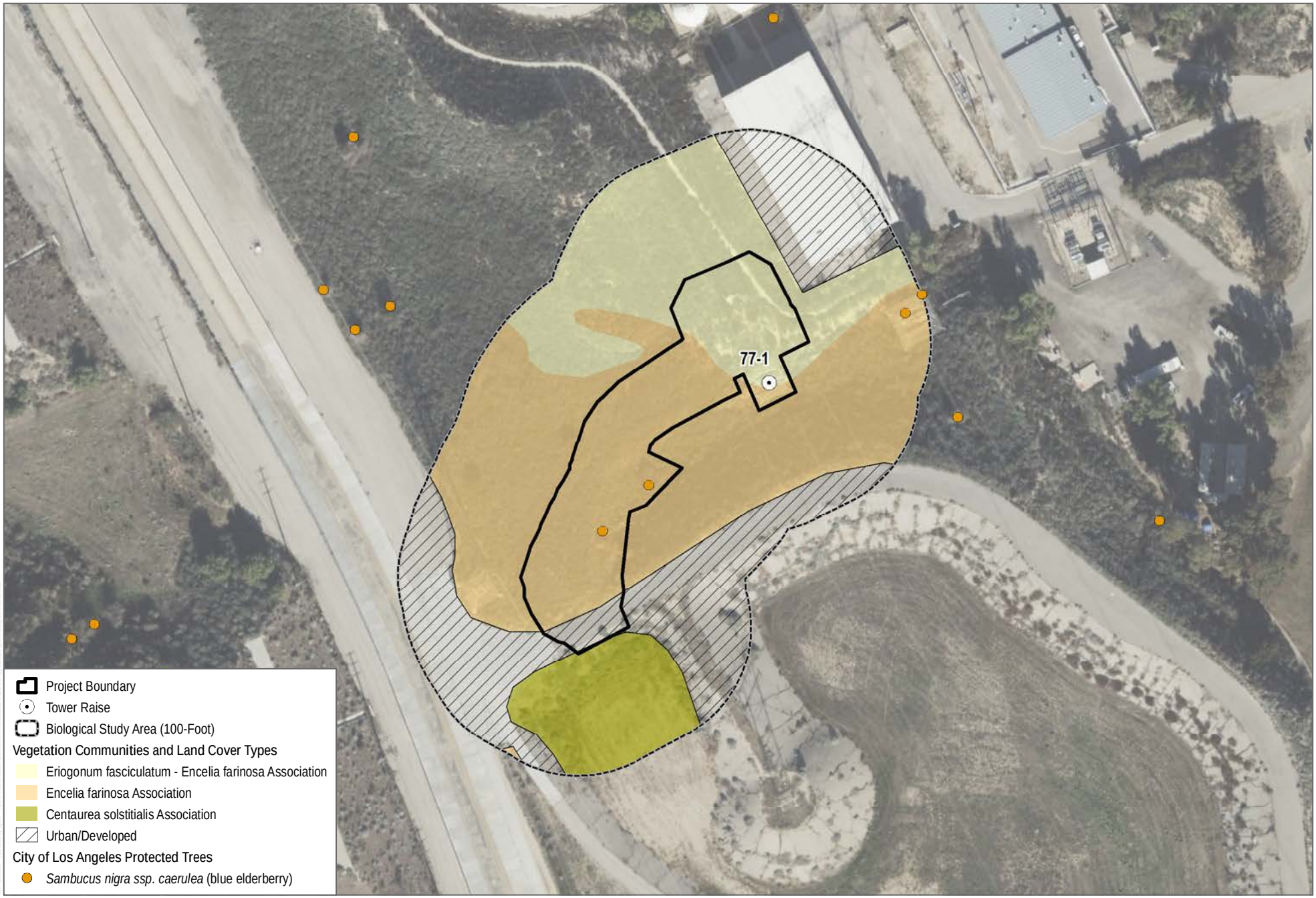
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FIGURE 2Q

Soils

LADWP Adelanto-Rinaldi Line Upgrade Project

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SOURCE: LADWP; Bing Maps

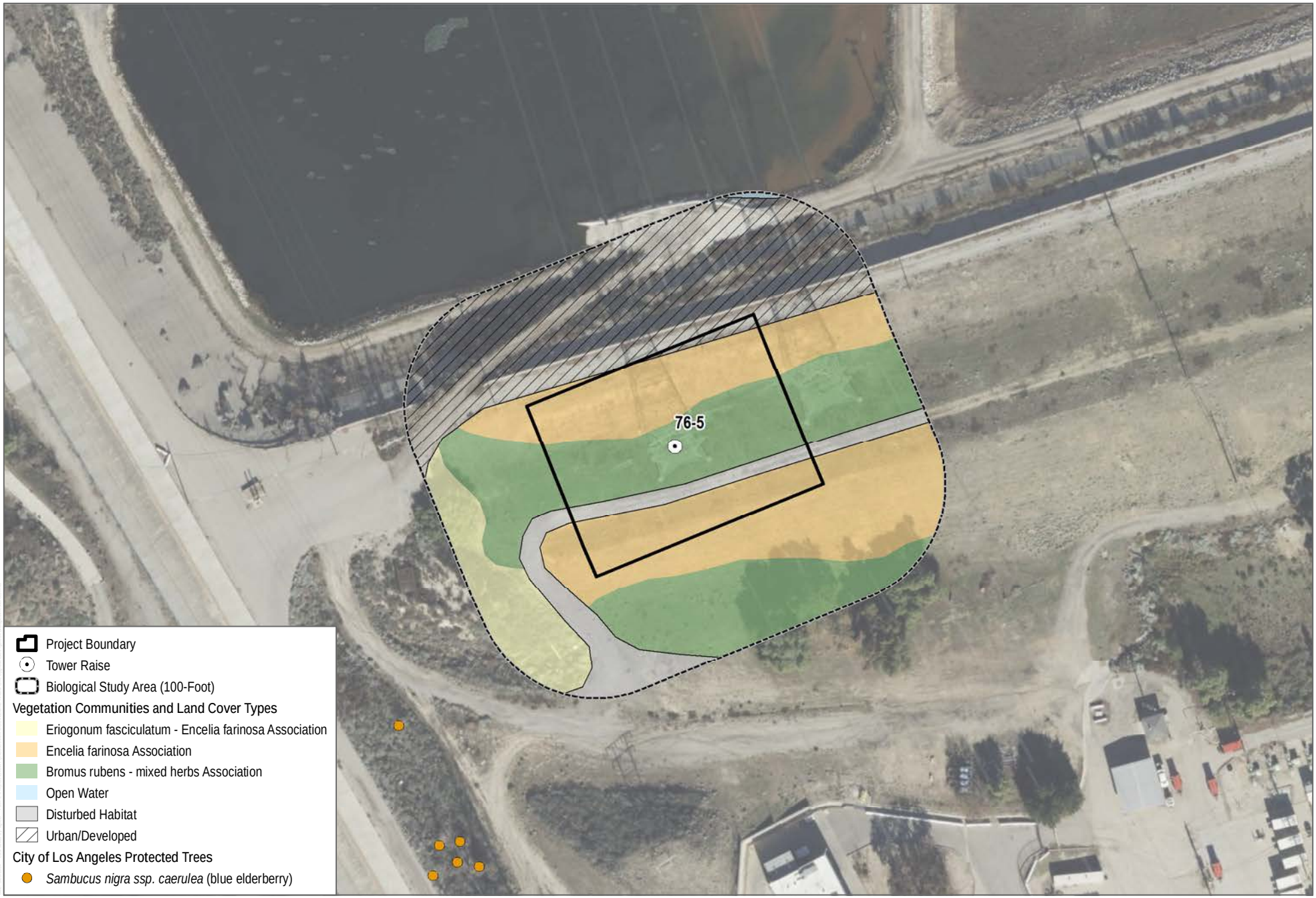
DUDEK

0 50 100 Feet

FIGURE 3A

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

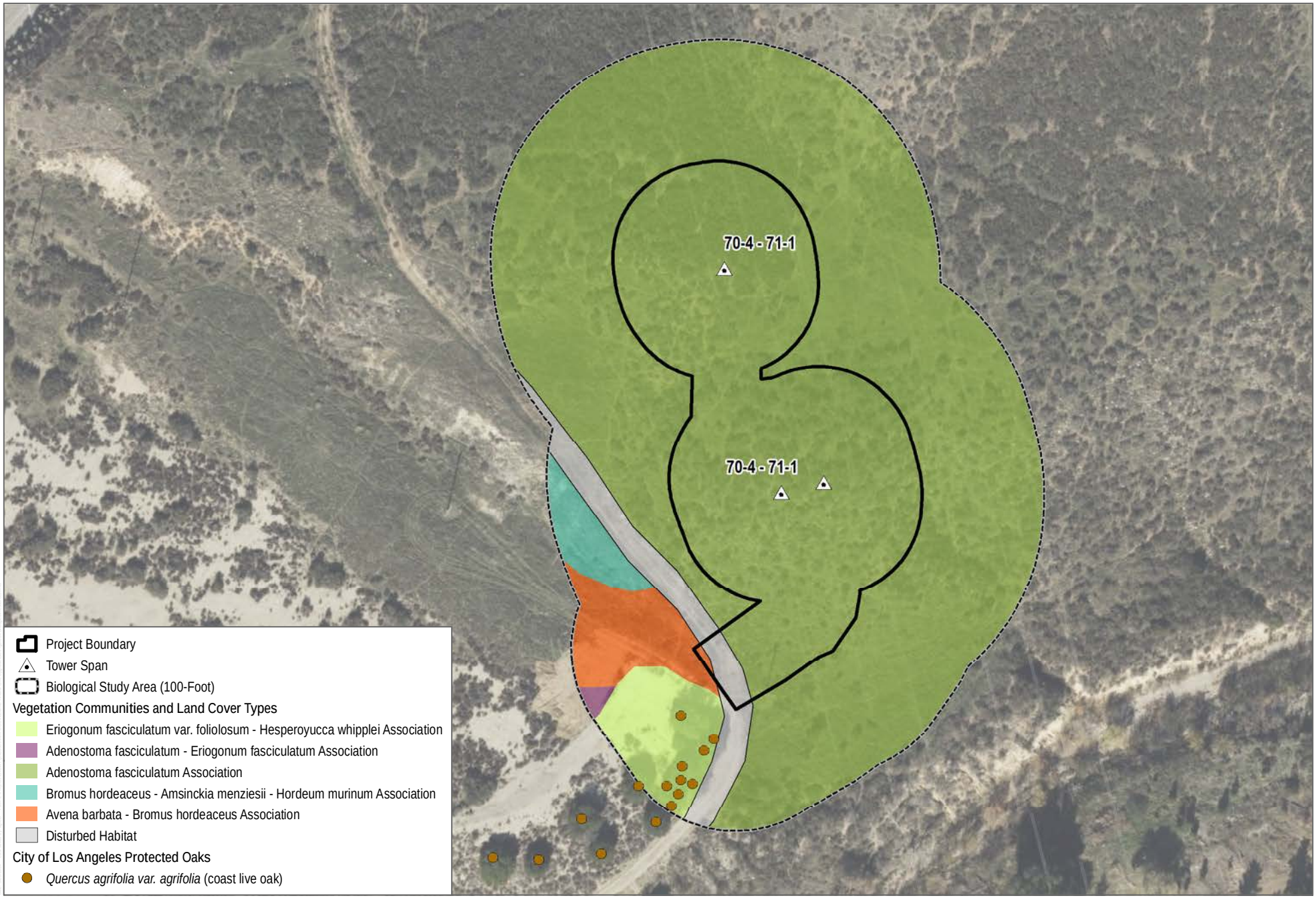
DUDEK

0 50 100 Feet

FIGURE 3B

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

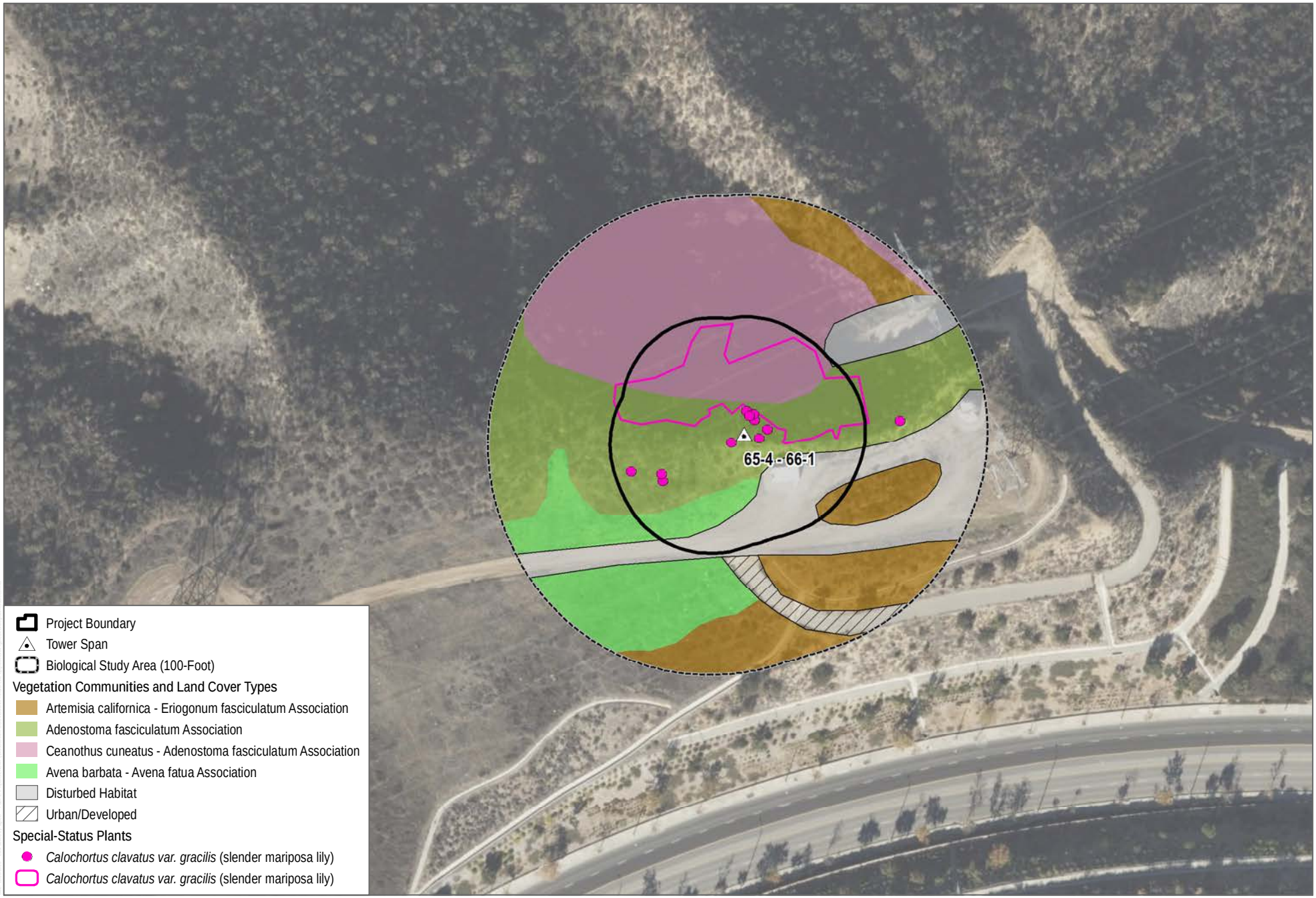
DUDEK

0 50 100 Feet

FIGURE 3C

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

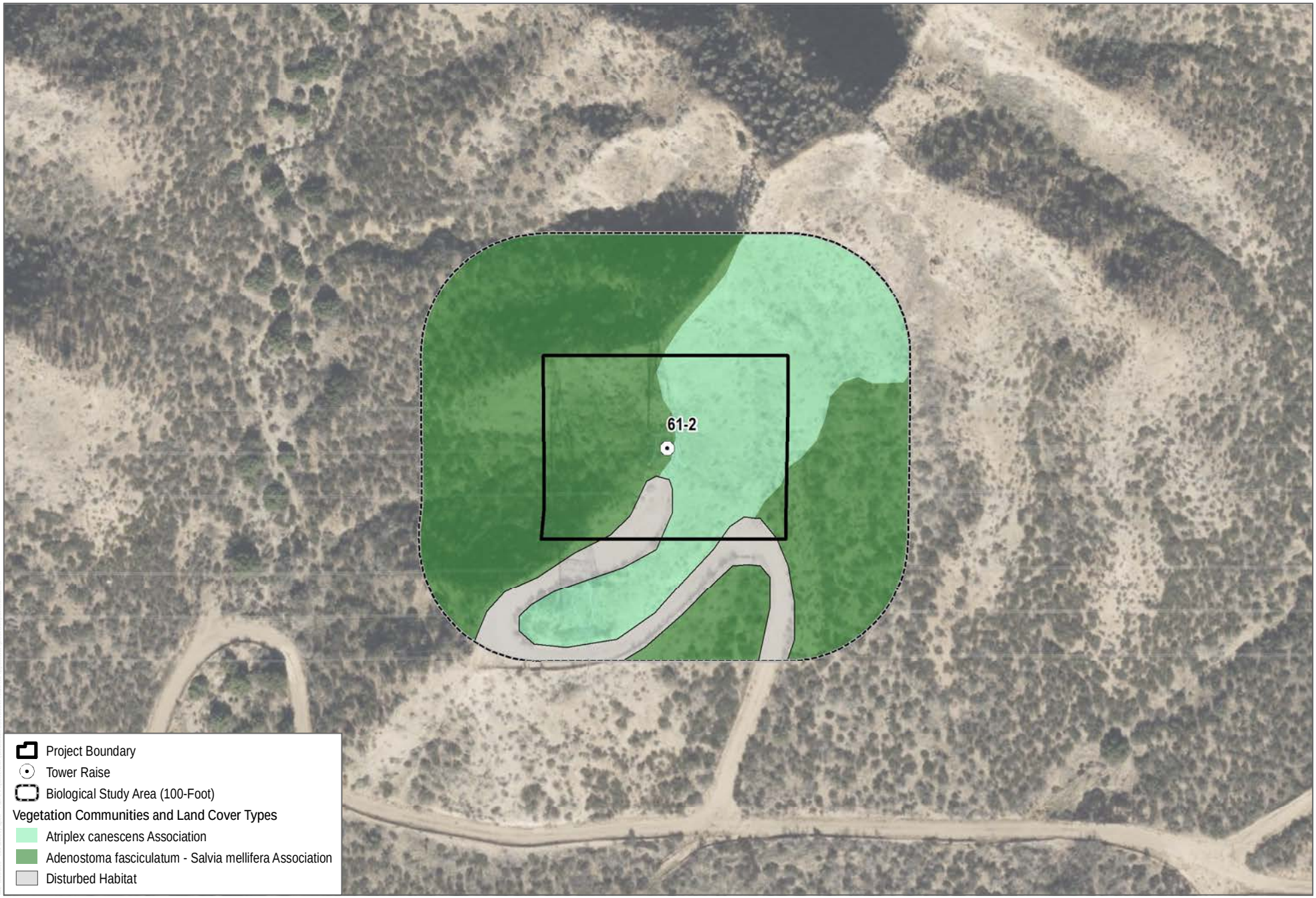
DUDEK

0 50 100 Feet

FIGURE 3D

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

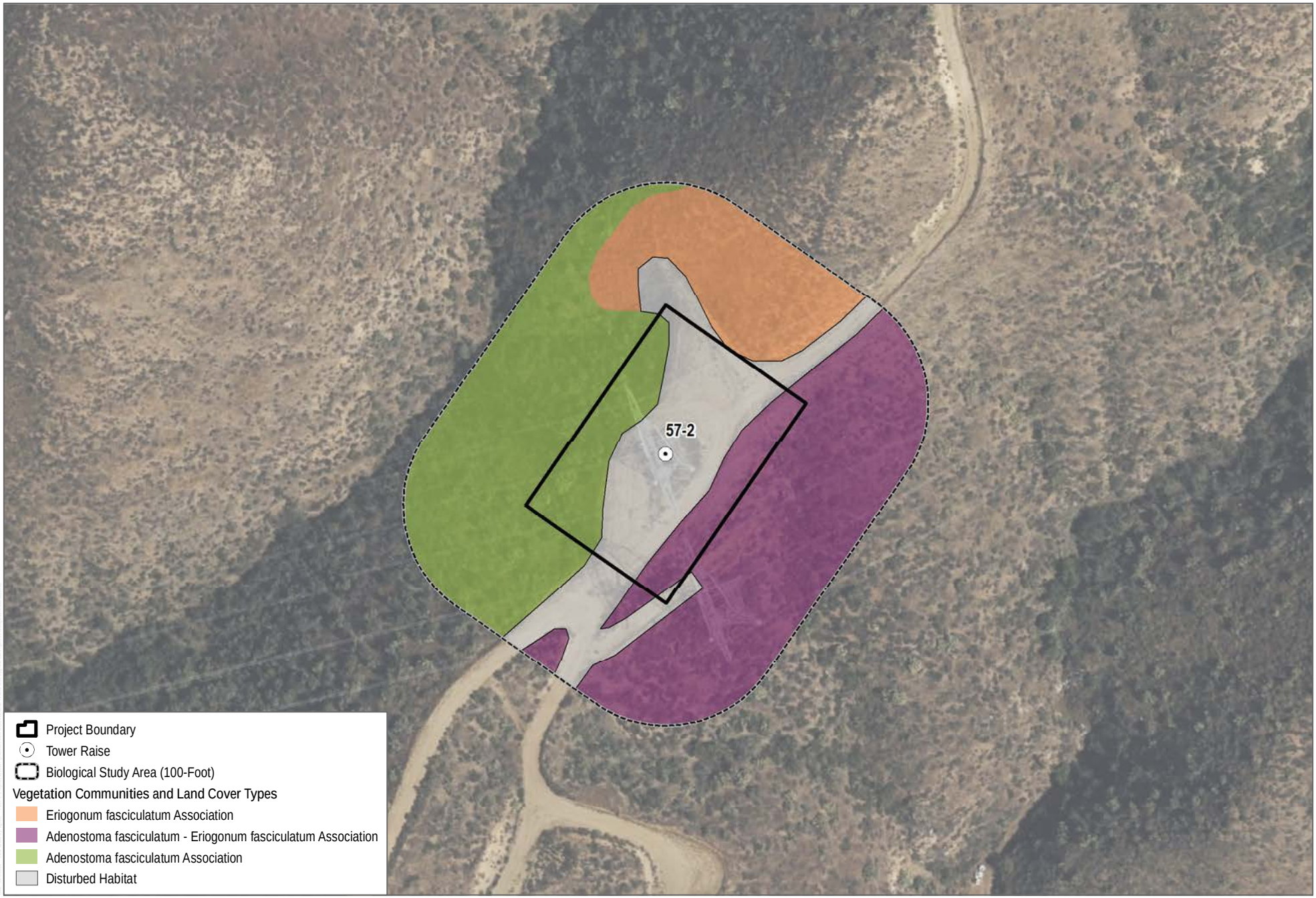
DUDEK

0 50 100 Feet

FIGURE 3E

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

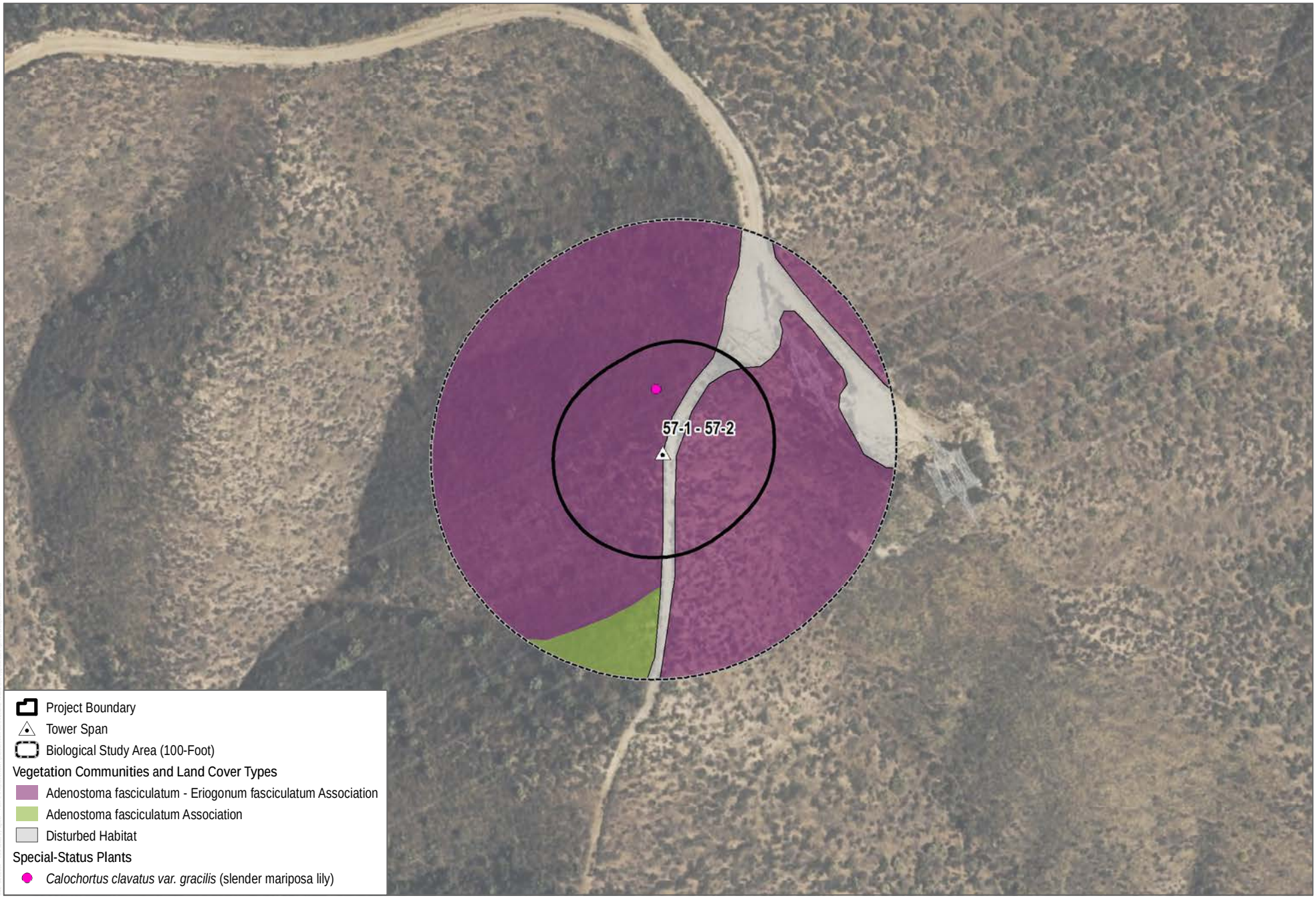
DUDEK

0 50 100 Feet

FIGURE 3F

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

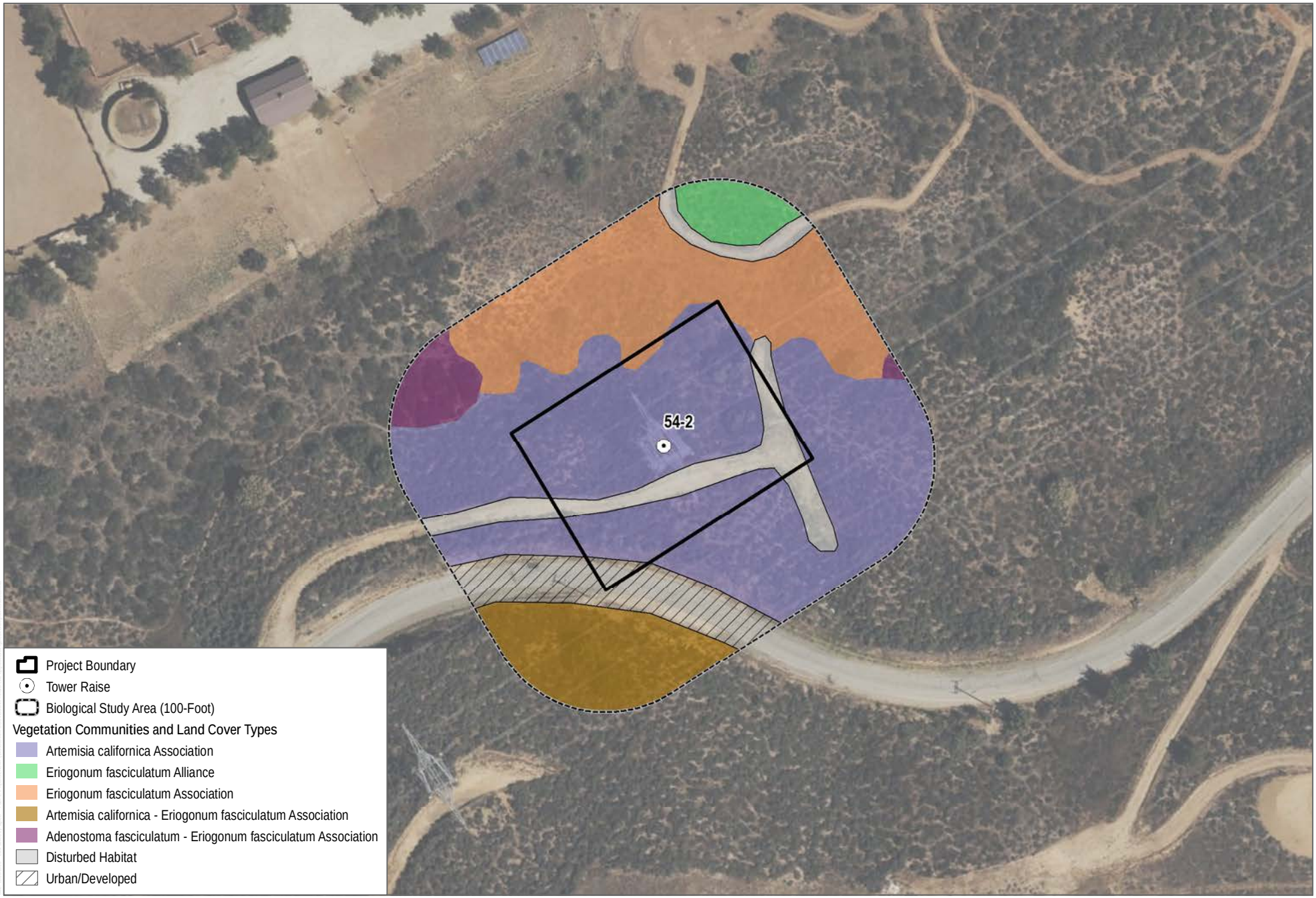
DUDEK

0 50 100 Feet

FIGURE 3G

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

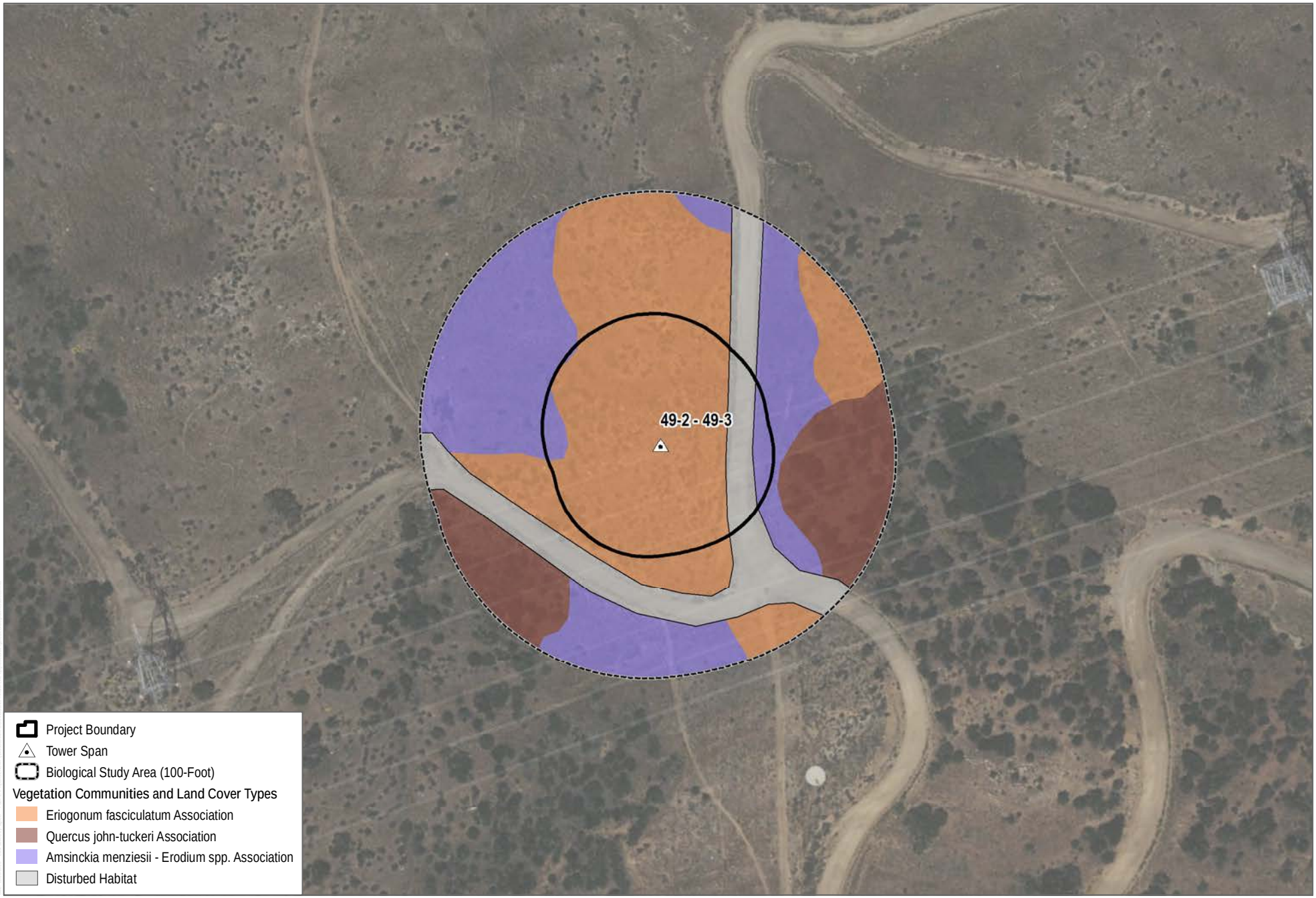
DUDEK

0 50 100 Feet

FIGURE 3H

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

DUDEK

0 50 100 Feet

FIGURE 3I

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

DUDEK

0 50 100 Feet

FIGURE 3J

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

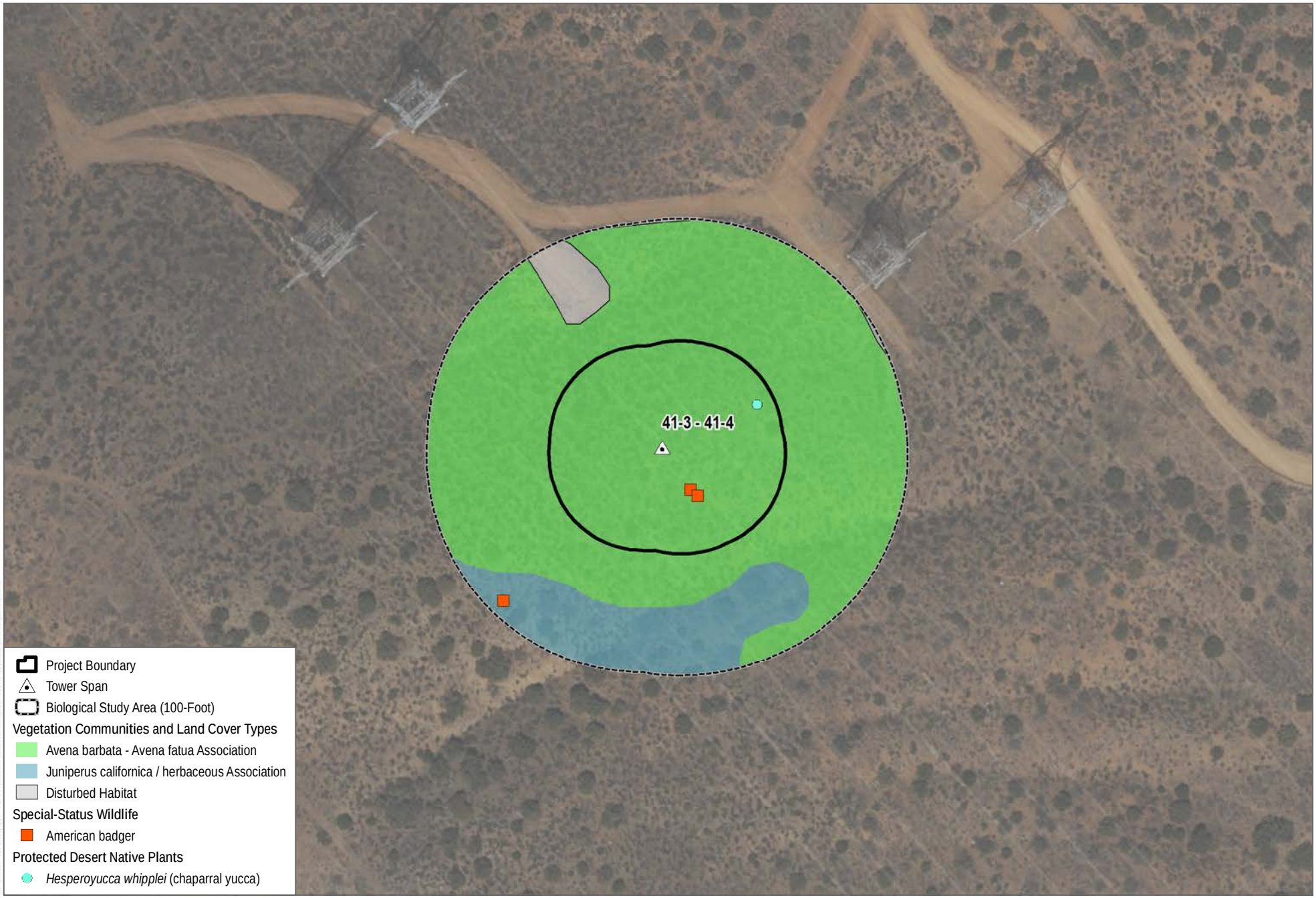
DUDEK

0 50 100 Feet

FIGURE 3K

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

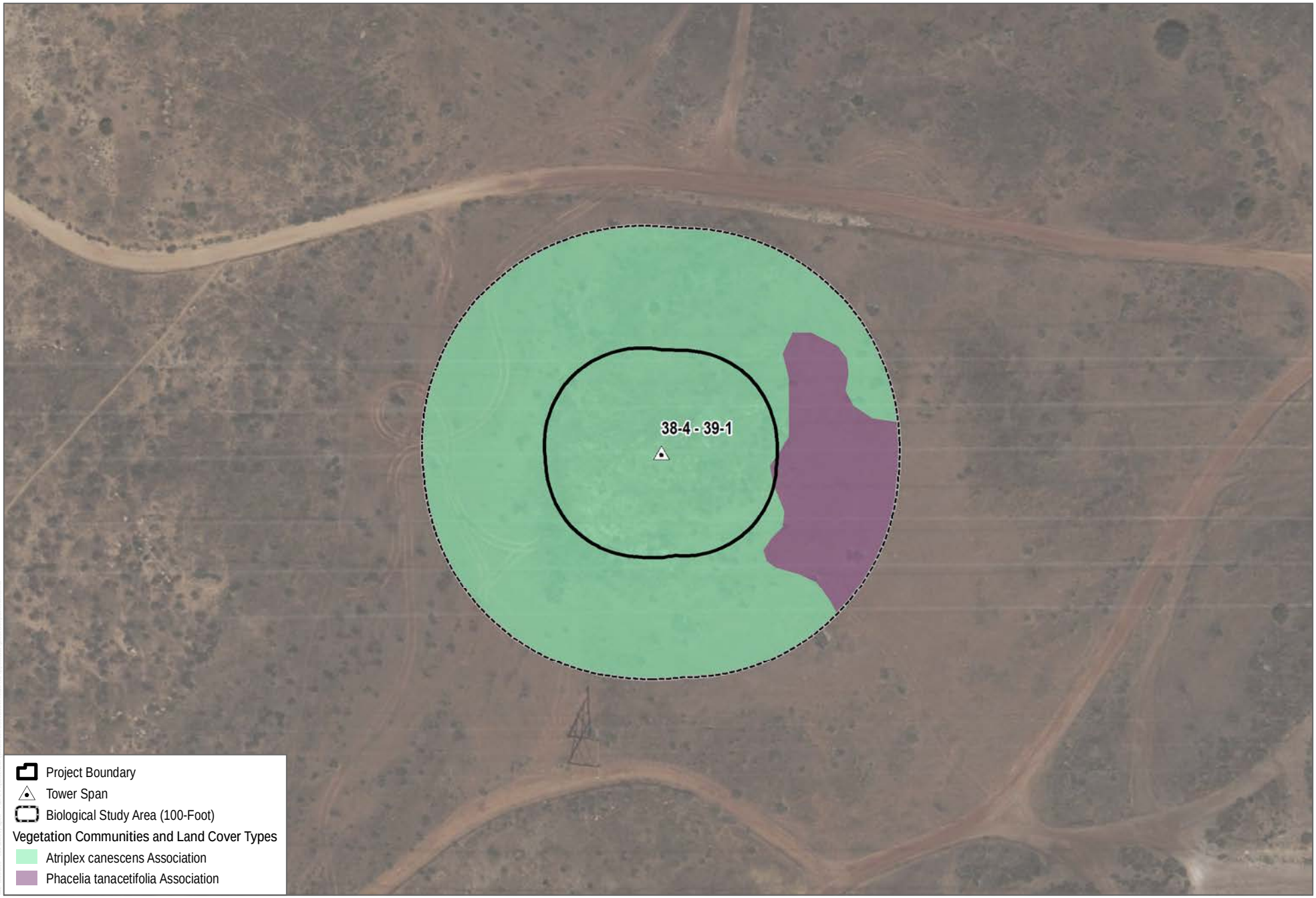
DUDEK

0 50 100 Feet

FIGURE 3L

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

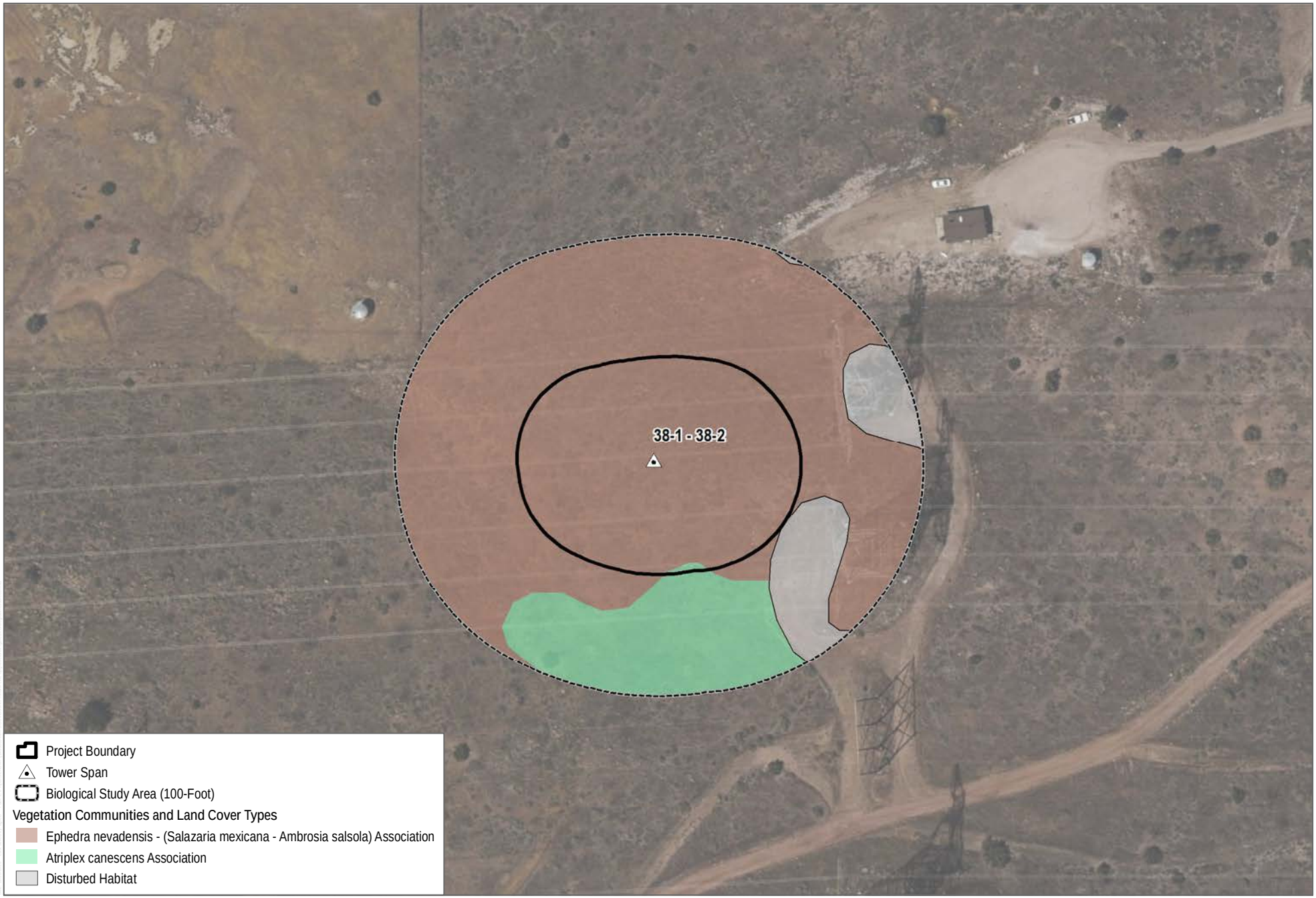
DUDEK

0 50 100 Feet

FIGURE 3M

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

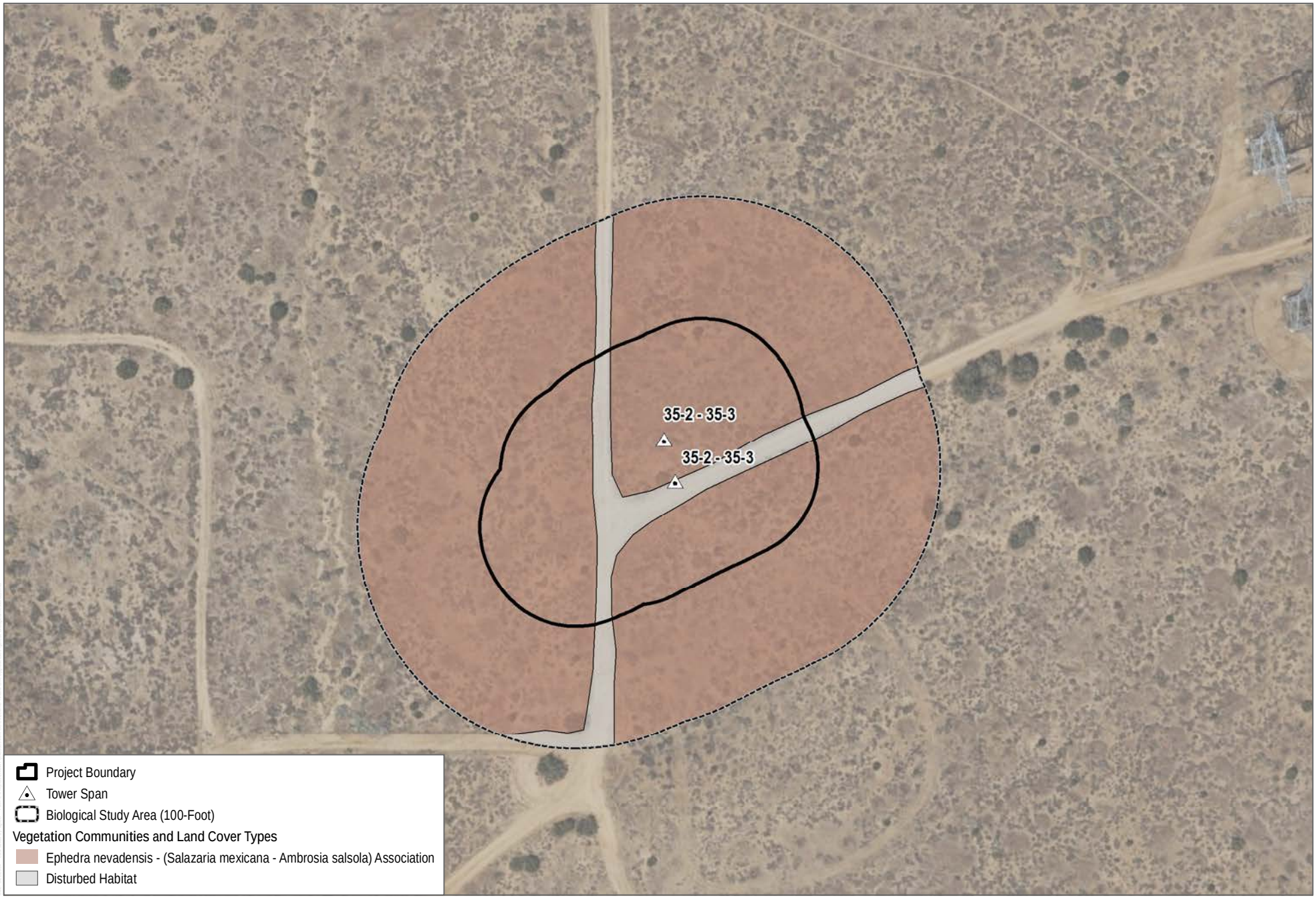
DUDEK

0 50 100 Feet

FIGURE 3N

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

DUDEK

0 50 100 Feet

FIGURE 3O

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

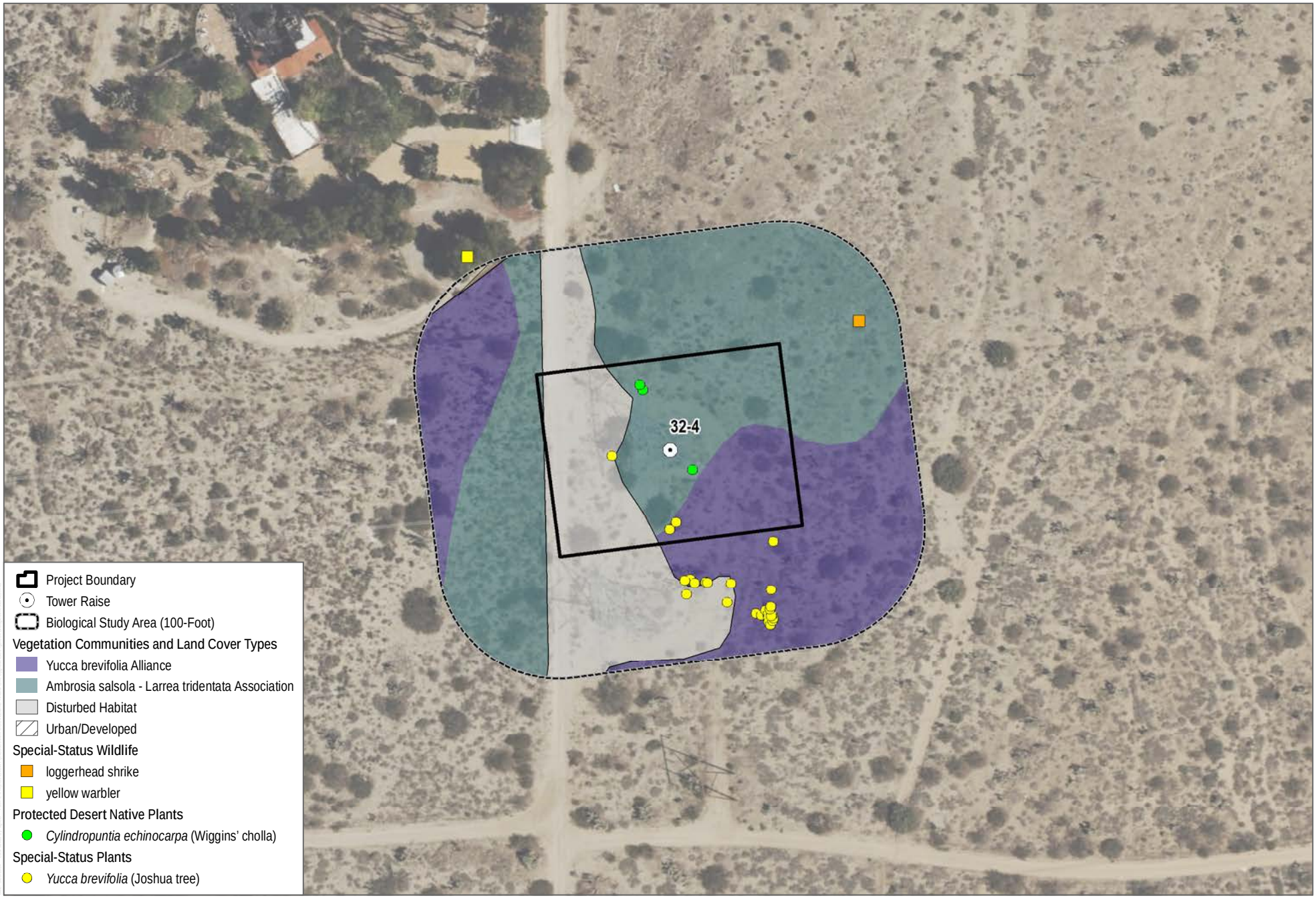
DUDEK

0 50 100 Feet

FIGURE 3P

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

DUDEK

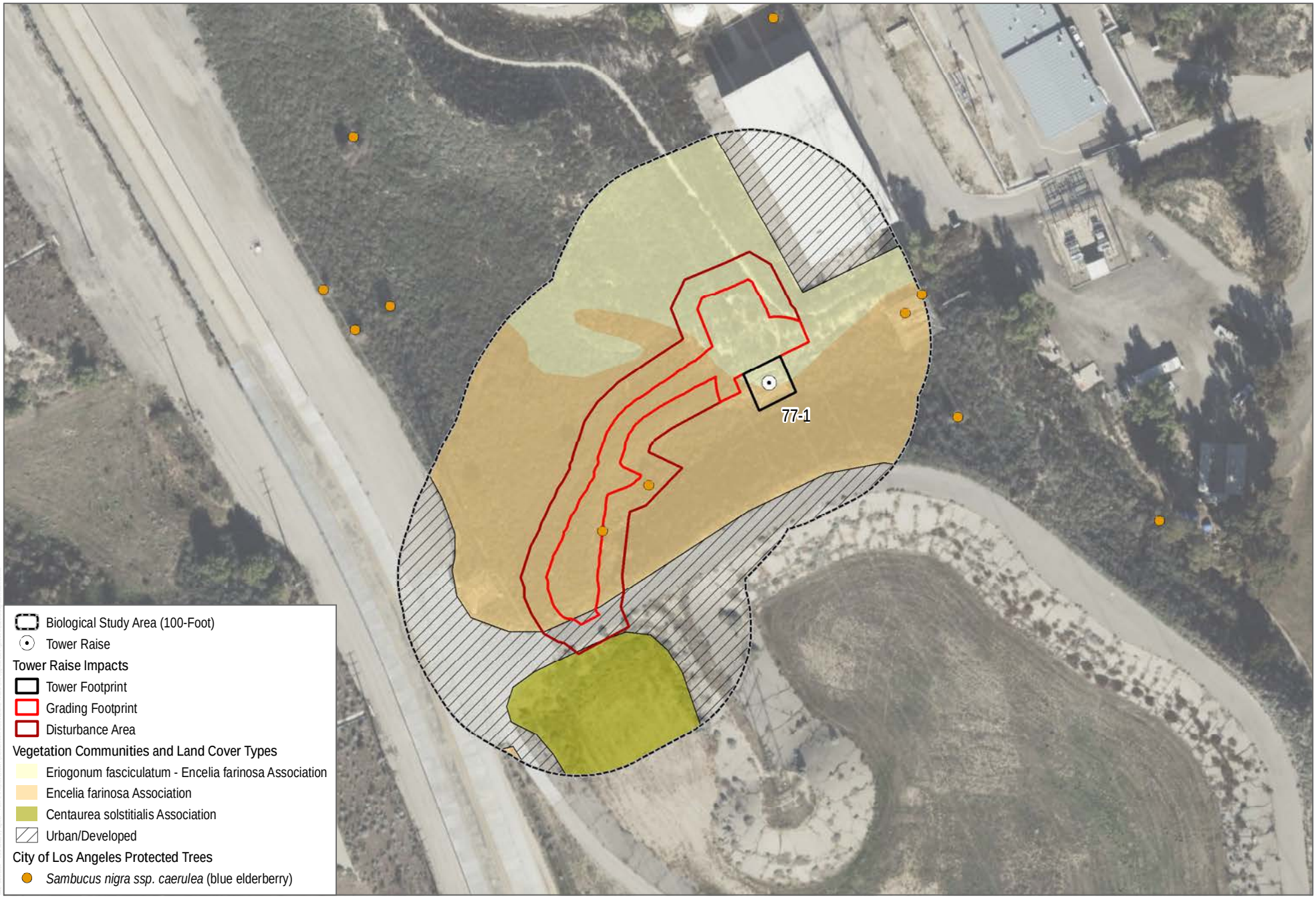
0 50 100 Feet

FIGURE 3Q

Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project

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SOURCE: LADWP; Bing Maps

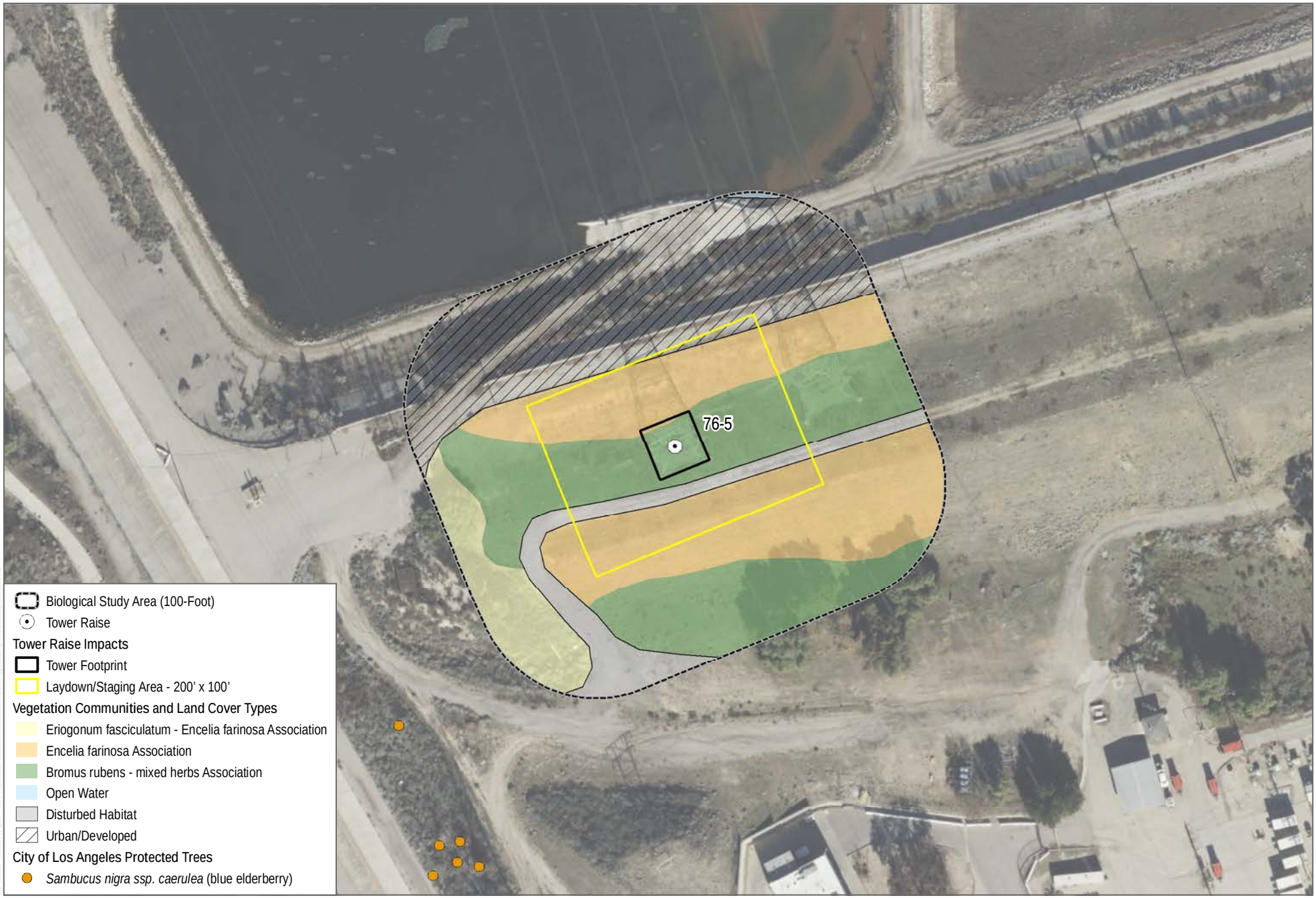
DUDEK

0 50 100 Feet

FIGURE 4A

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

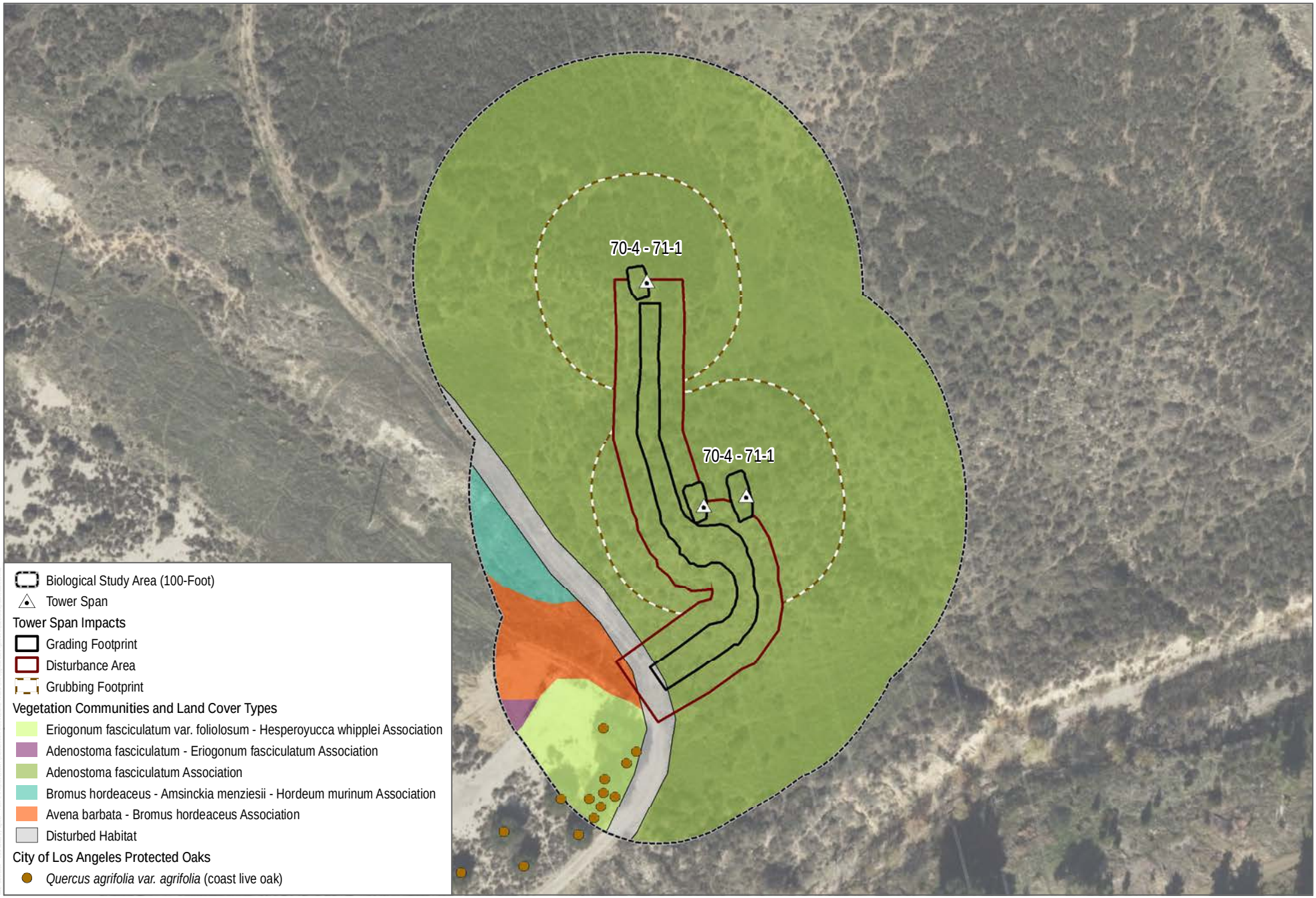
DUDEK

0 50 100 Feet

FIGURE 4B

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

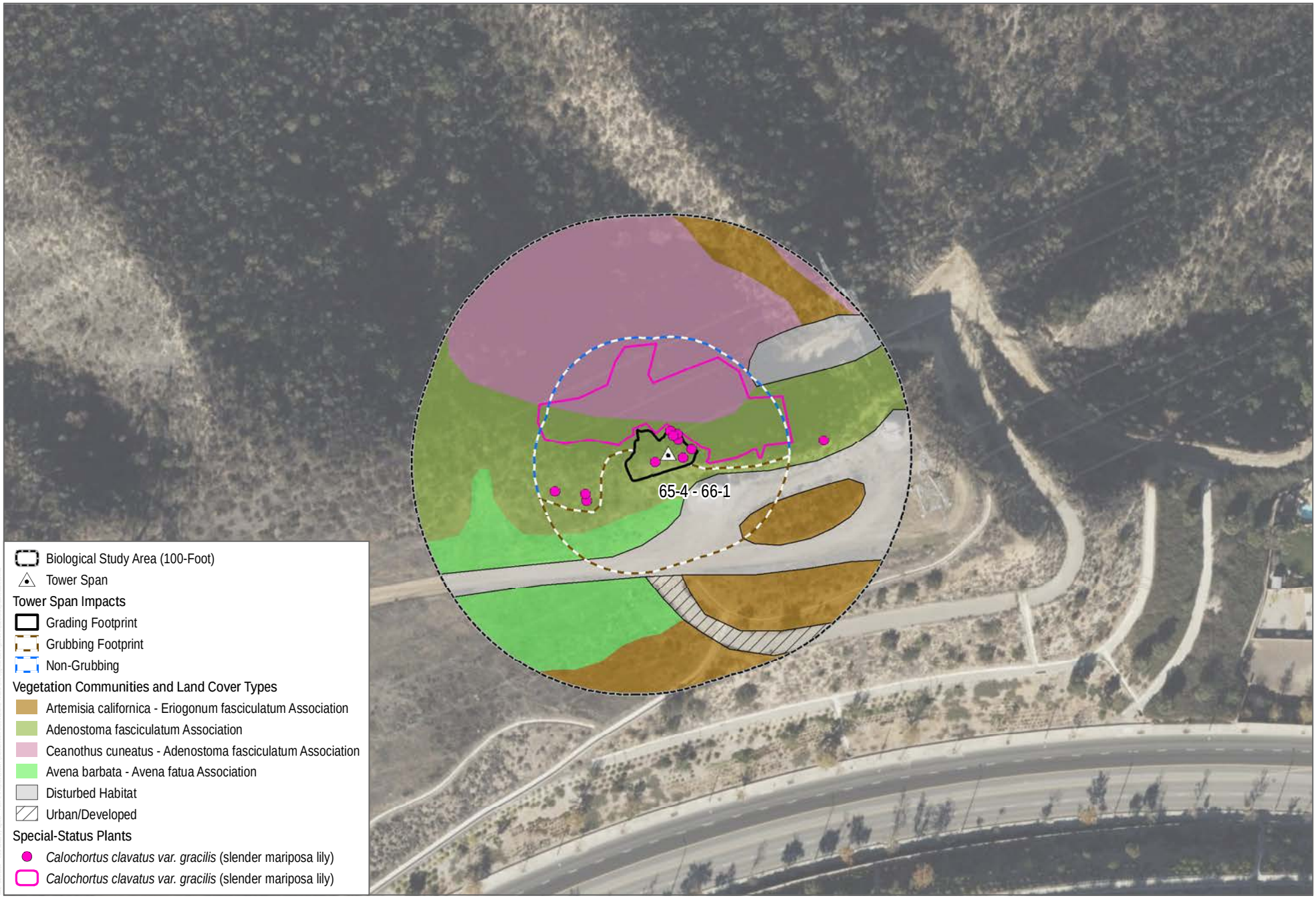
DUDEK

0 50 100 Feet

FIGURE 4C

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

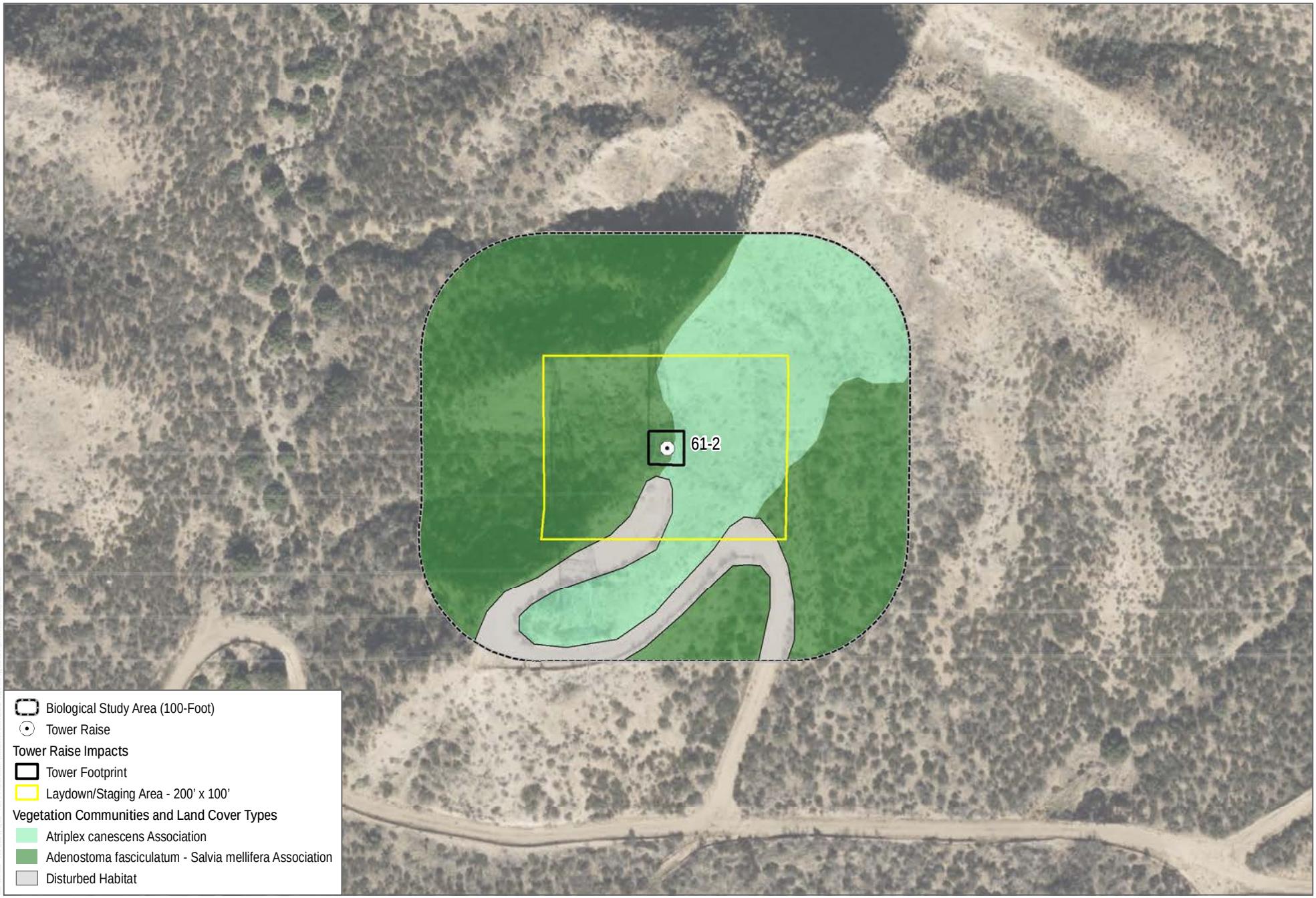
DUDEK

0 50 100 Feet

FIGURE 4D

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

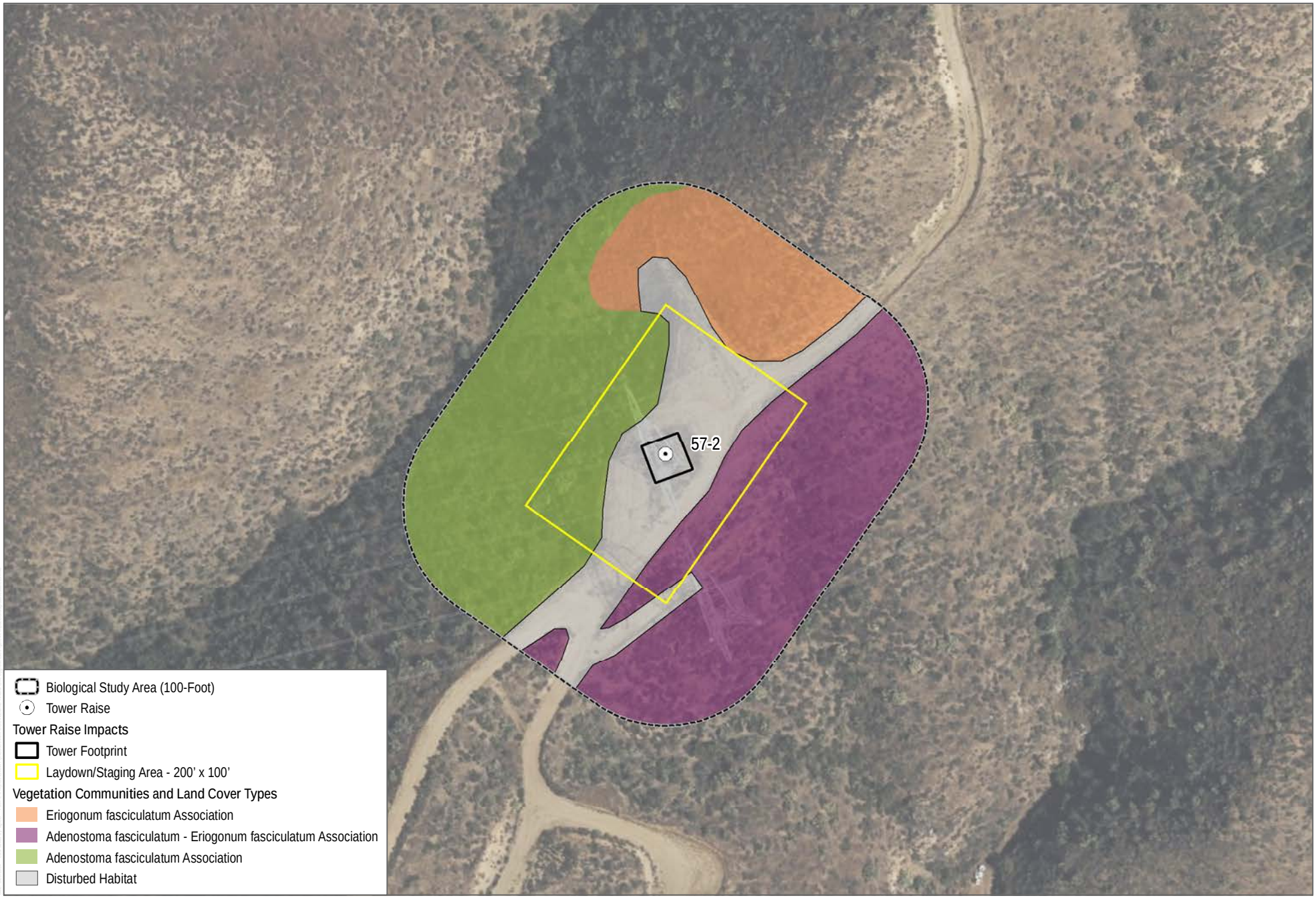
DUDEK

0 50 100 Feet

FIGURE 4E

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

DUDEK

0 50 100 Feet

FIGURE 4F

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

DUDEK

0 50 100 Feet

FIGURE 4G

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

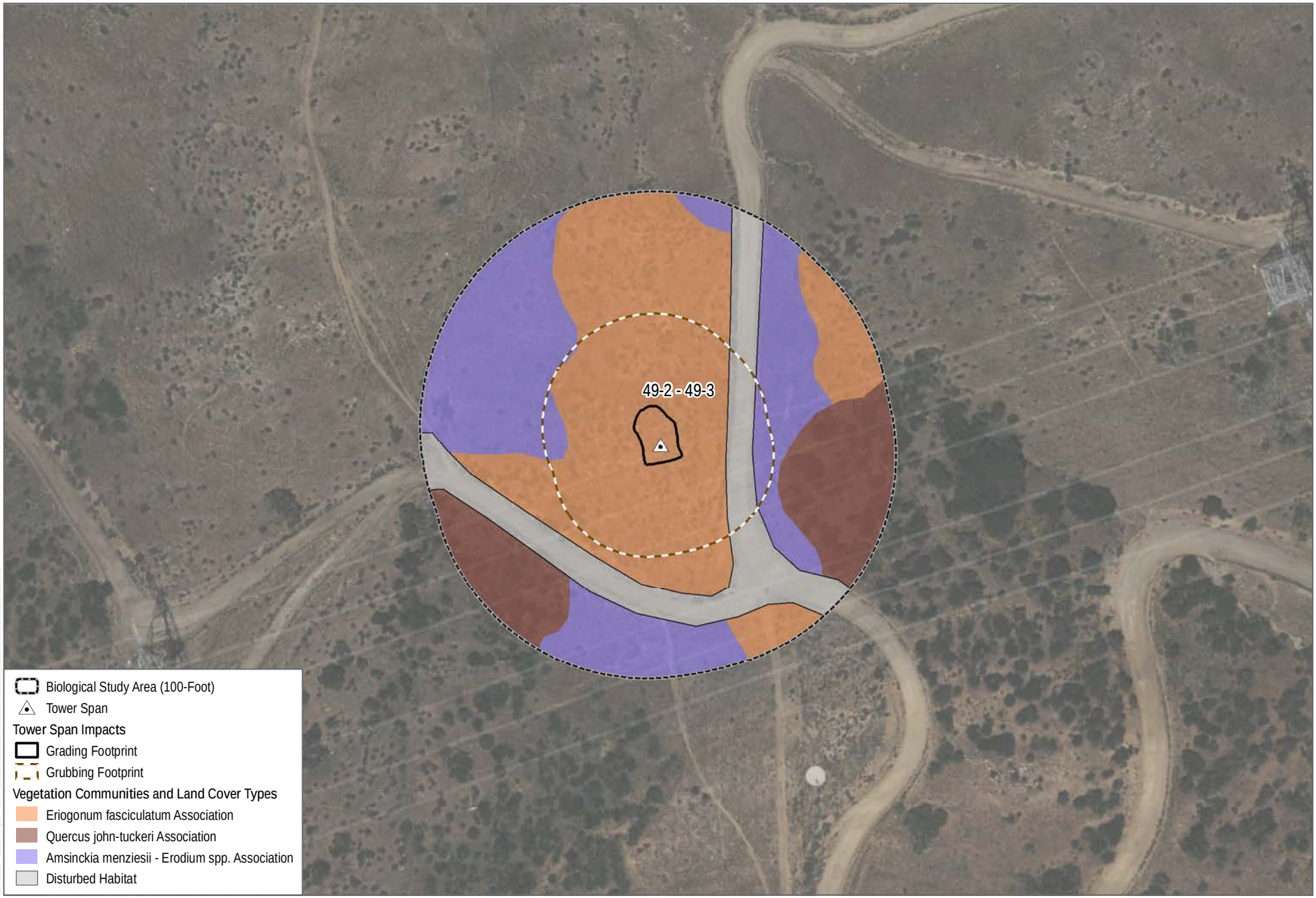
DUDEK

0 50 100 Feet

FIGURE 4H

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

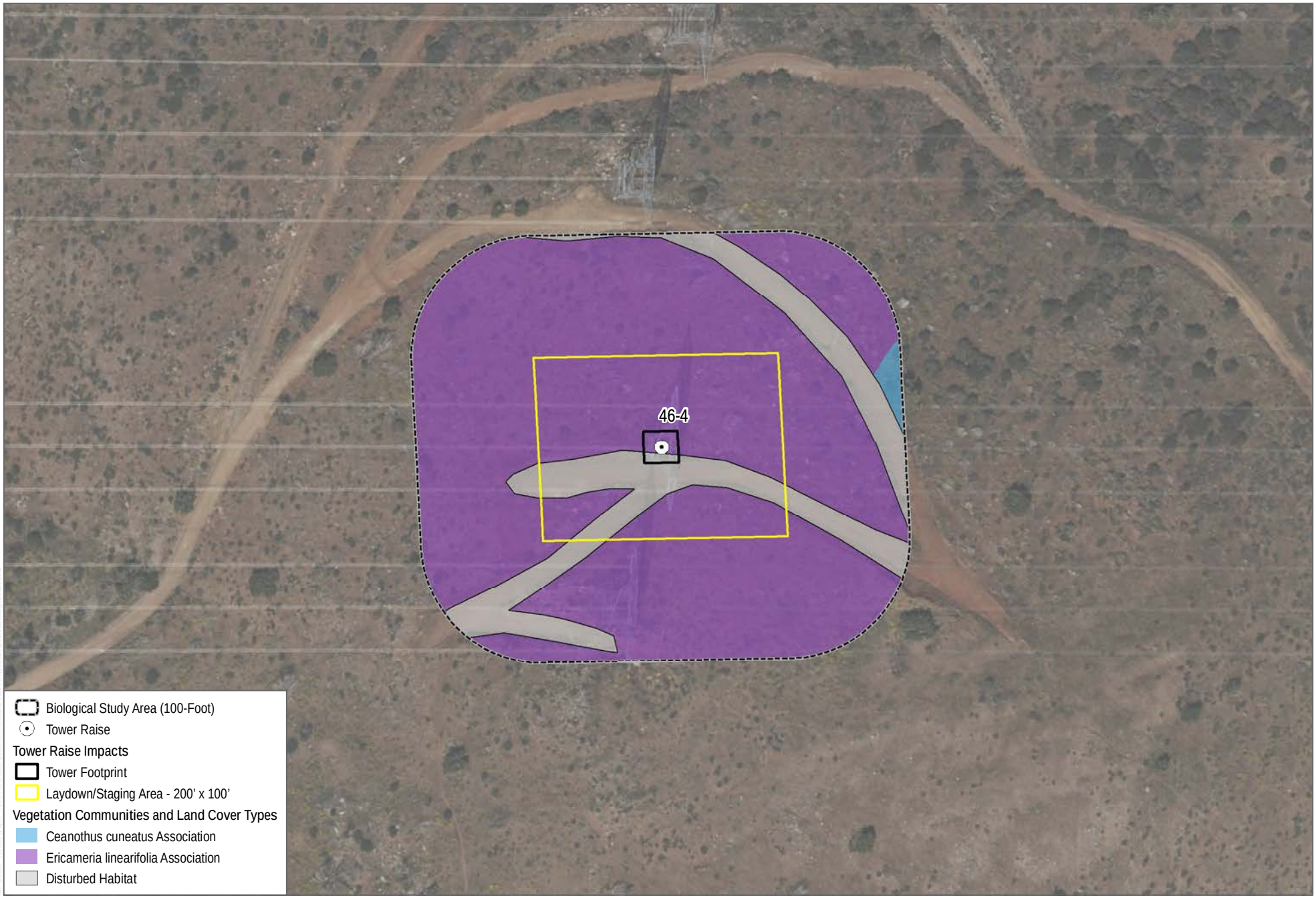
DUDEK

0 50 100 Feet

FIGURE 4I

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

DUDEK

0 50 100 Feet

FIGURE 4J

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

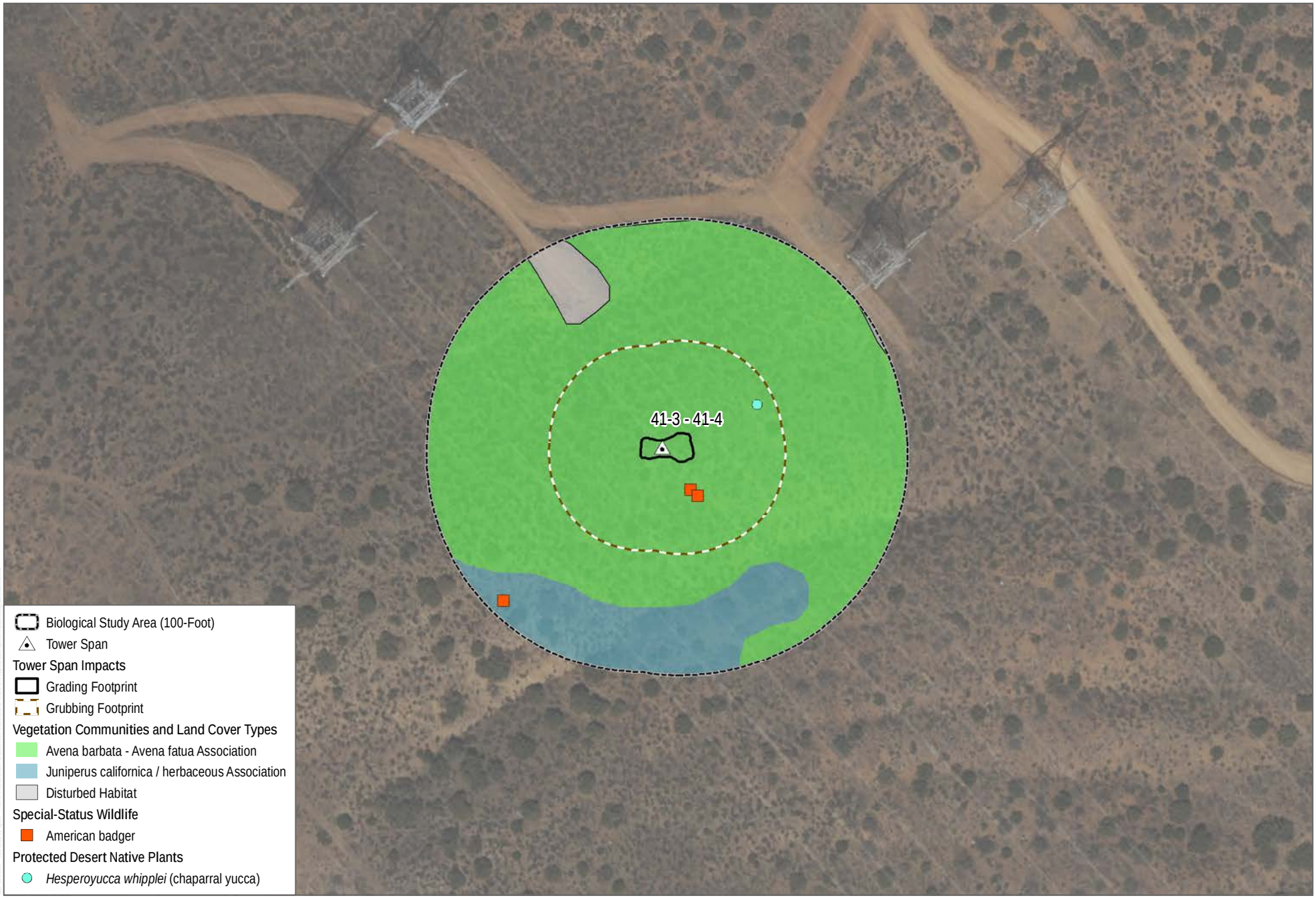
DUDEK

0 50 100 Feet

FIGURE 4K

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

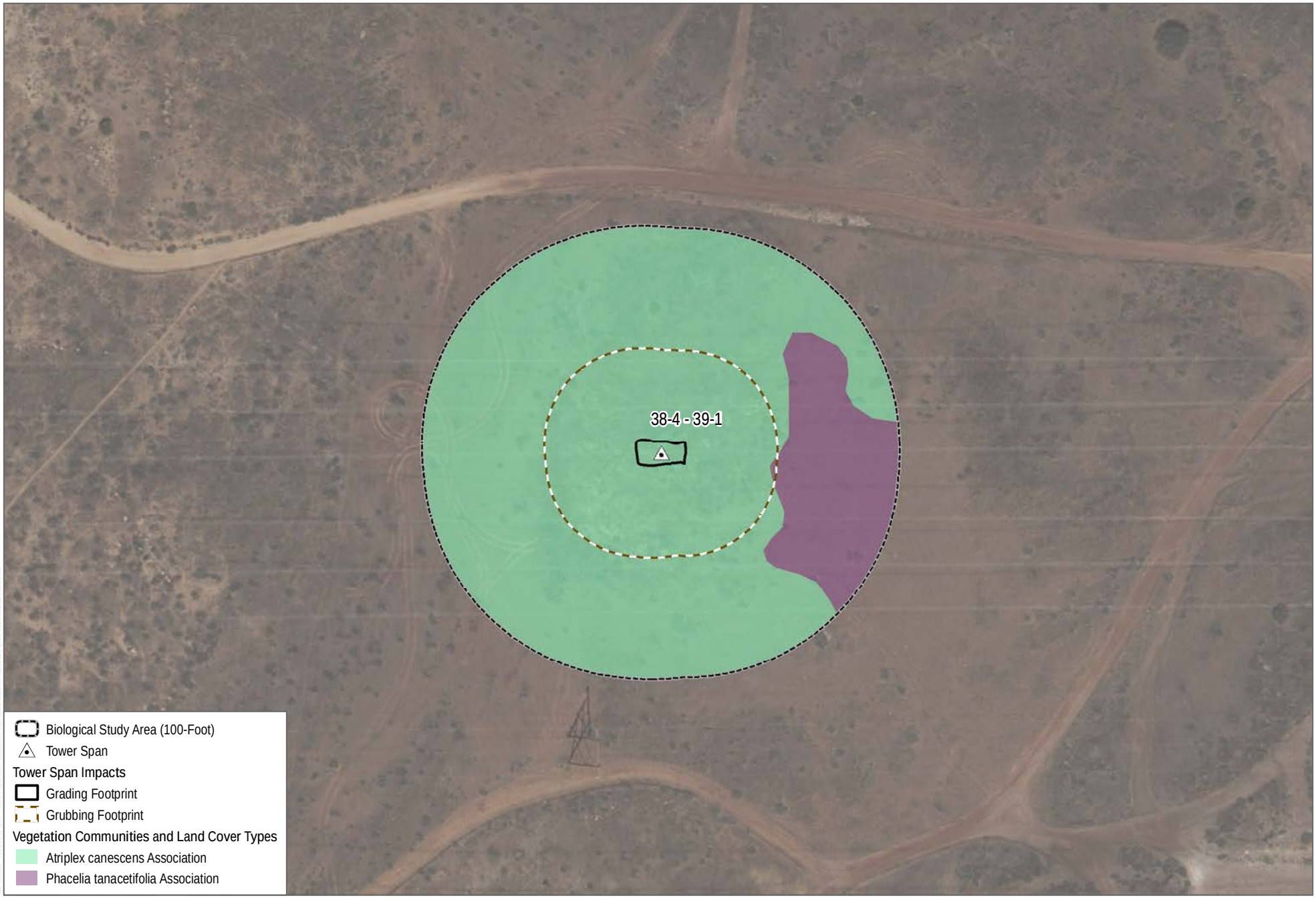
DUDEK

0 50 100 Feet

FIGURE 4L

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

DUDEK

0 50 100 Feet

FIGURE 4M

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

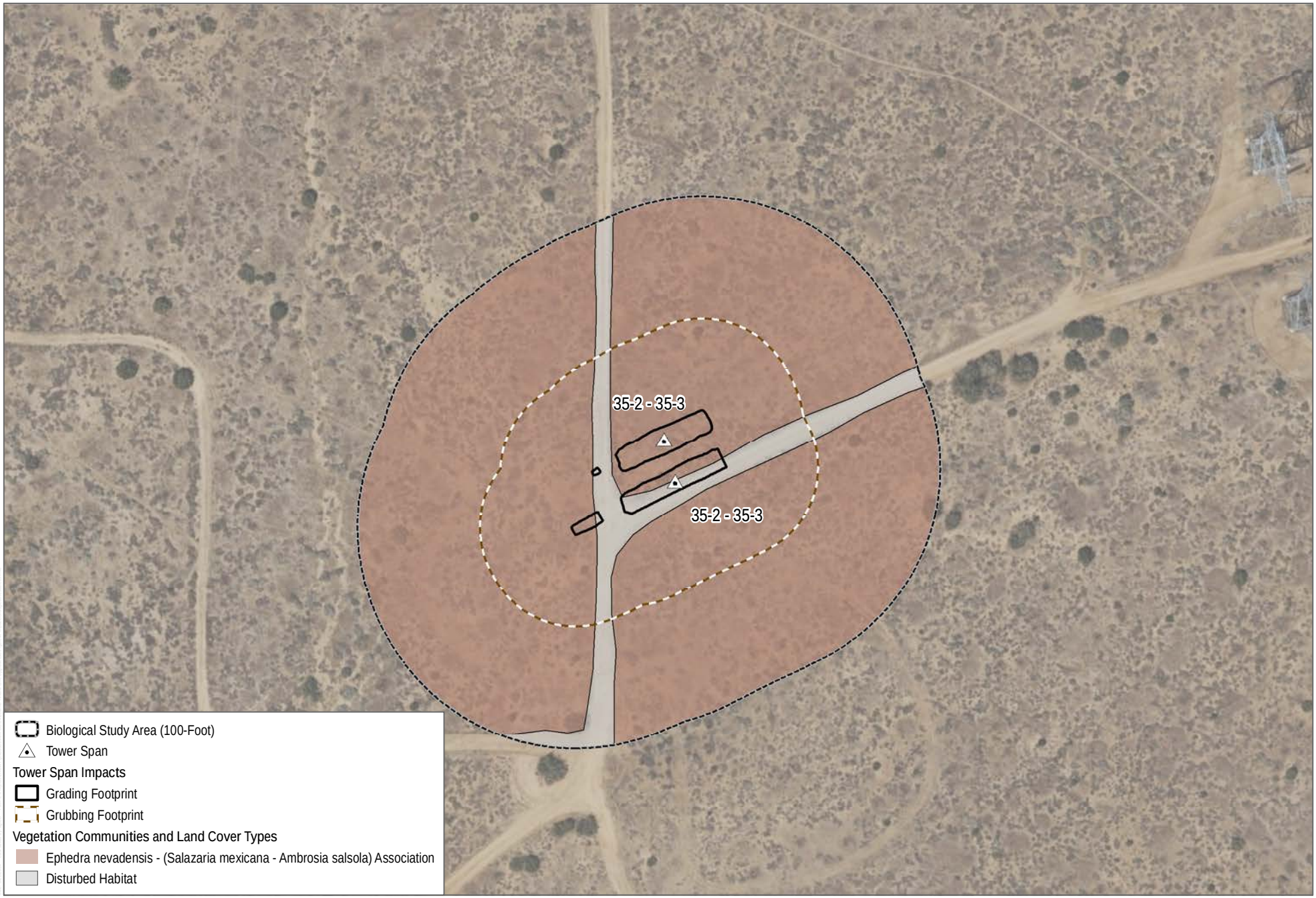
DUDEK

0 50 100 Feet

FIGURE 4N

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

DUDEK

0 50 100 Feet

FIGURE 4O

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

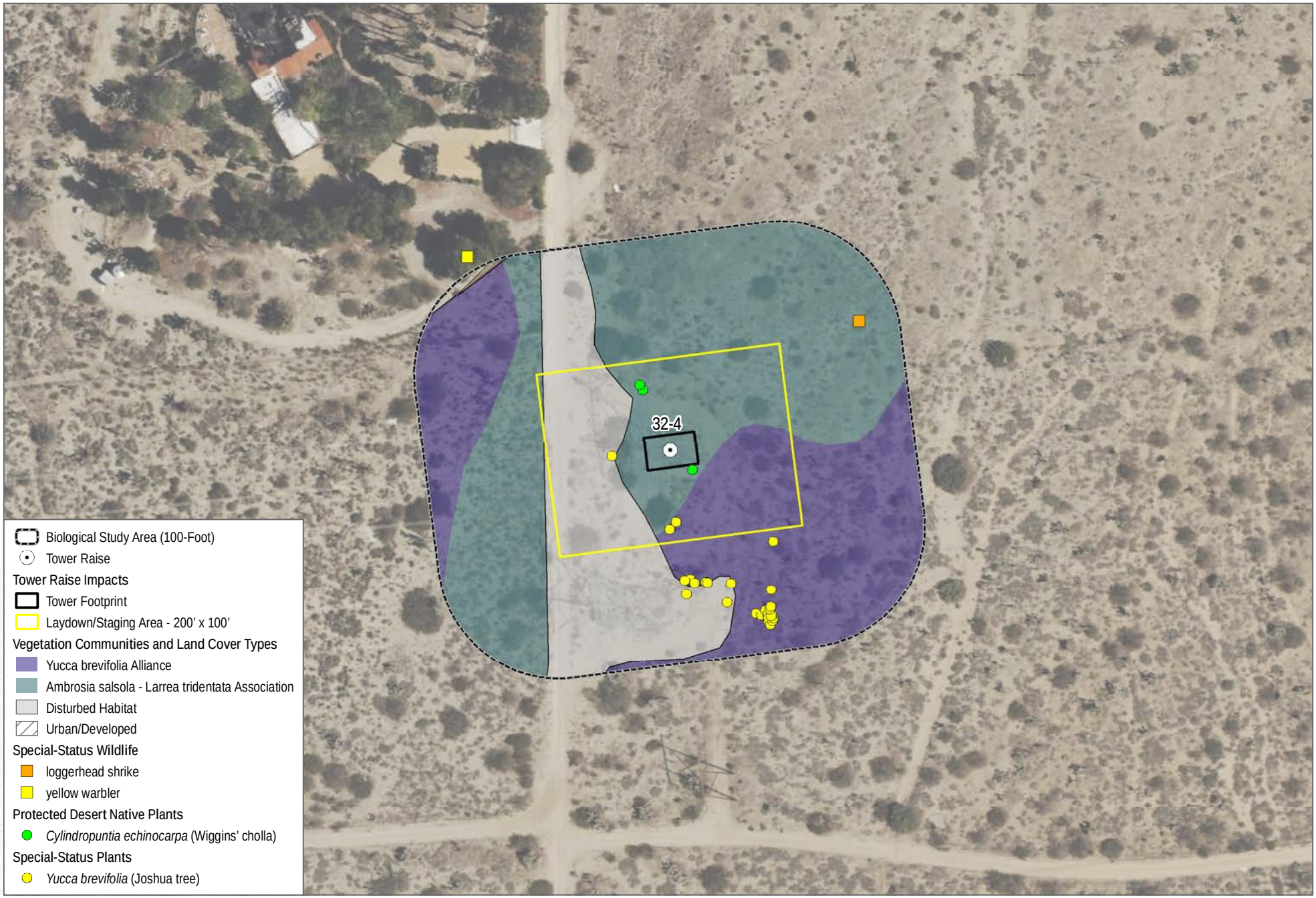
DUDEK

0 50 100 Feet

FIGURE 4P

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: LADWP; Bing Maps

DUDEK

0 50 100 Feet

FIGURE 4Q

Impacts to Biological Resources

LADWP Adelanto-Rinaldi Line Upgrade Project

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# Appendix A
Photo Exhibit



**Photo 1:** Facing southwest toward the Tower 77-1 tower raising work location.



**Photo 2:** Facing east-northeast toward the Tower 76-5 tower raising work location.

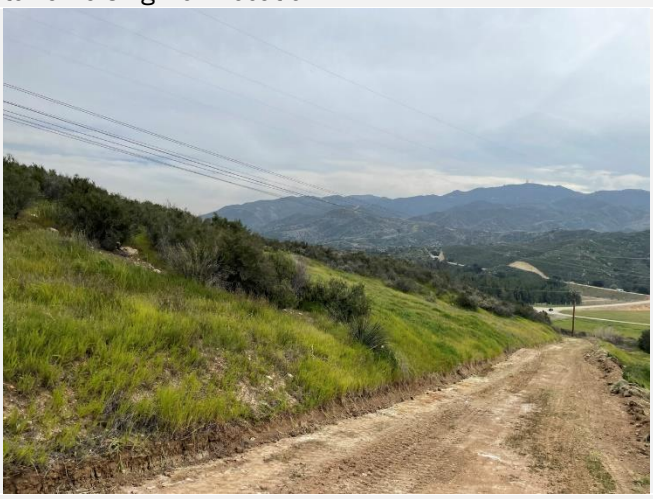


**Photo 3:** Facing southeast toward the Tower Span 70-4 to 71-1 work location.



**Photo 4:** Facing east-northeast toward the Tower Span 65-4 to 66-1 work location.



**Photo 5:** Facing north-northeast toward the Tower 61-2 tower raising work location.



**Photo 6:** Facing northeast toward the Tower 57-2 tower raising work location.



**Photo 7:** Facing north toward the Tower Span 57-1 to 57-2 work location.



**Photo 8:** Facing north-northeast toward the Tower 54-2 tower raising work location.



**Photo 9:** Facing north-northwest toward the Tower Span 49-2 to 49-3 work location.



**Photo 10:** Facing southeast toward the Tower 46-4 tower raising work location.



**Photo 11:** Facing northwest toward the Tower 43-2 tower raising work location.



**Photo 12:** Facing south toward the Tower Span 41-3 to 41-4 work location.



**Photo 13:** Facing southwest toward the Tower Span 38-4 to 39-1 work location.



**Photo 14:** Facing northeast toward the Tower Span 38-1 to 38-2 work location.



**Photo 15:** Facing northeast toward the Tower Span 35-2 to 35-3 work location.



**Photo 16:** Facing south-southwest toward the Tower Span 33-2 to 33-3 work location.



**Photo 17:** Facing northeast toward the Tower 32-4 tower raising work location.



**Photo 18:** Badger burrow detected within the biological study area for Tower Span 41-3 to 41-4.



**Photo 19:** Photo of slender mariposa lily detected within *Adenostoma fasciculatum-Eriogonum fasciculatum* association approximately 40 feet north of the Tower Span 57-1 to 57-2.



**Photo 20:** Facing east-northeast toward habitat (*Adenostoma fasciculatum* association and *Ceanothus cuneatus-Adenostoma fasciculatum* association), in which a total of 272 slender mariposa lily (*Calochortus clavatus* var. *gracilis*) were mapped within the biological study area for Tower Span 65-4 to 66-1.

# Appendix B
Plant Compendium

# Angiosperms (Dicots)

## ANACARDIACEAE—SUMAC FAMILY

*Malosma laurina*—laurel sumac
*Rhus aromatica*—skunkbush sumac
*Rhus integrifolia*—lemonade berry
* *Schinus molle*—Peruvian pepper tree
*Toxicodendron diversilobum*—poison oak

## APIACEAE—CARROT FAMILY

*Apiastrum angustifolium*—mock parsley
* *Conium maculatum*—poison hemlock
*Lomatium dasycarpum*—woollyfruit desertparsley
*Lomatium mohavense*—Mojave desertparsley
*Lomatium nevadense var. parishii—Parish's biscuitroot*

## ASTERACEAE—SUNFLOWER FAMILY

*Acourtia microcephala*—sacapellote
*Ambrosia dumosa*—white bursage
*Ambrosia salsola* var. *salsola*—burrobrush
*Artemisia californica*—California sagebrush
*Artemisia tridentata*—big sagebrush
*Baccharis salicifolia* ssp. *salicifolia*—mulefat
* *Carduus pycnocephalus* ssp. *pycnocephalus*—Italian plumeless thistle
* *Centaurea melitensis*—Maltese star-thistle
* *Centaurea solstitialis*—yellow star-thistle
*Chaenactis fremontii*—pincushion flower
*Chaenactis glabriuscula* var. *glabriuscula*—yellow pincushion
*Corethrogyne filaginifolia*—sand-aster
*Deinandra fasciculata*—clustered tarweed
* *Dittrichia graveolens*—stinkwort
*Encelia actoni*—Acton's brittle brush
*Encelia farinosa*—brittle bush
*Ericameria linearifolia*—narrowleaf goldenbush
*Ericameria nauseosa* var. *hololeuca*—rubber rabbitbrush
*Ericameria pinifolia*—pinebush
*Eriophyllum confertiflorum* var. *confertiflorum*—golden-yarrow
*Eriophyllum wallacei*—woolly easterbonnets
* *Gazania linearis*—treasureflower
*Gutierrezia californica*—California match weed

*Gutierrezia sarothrae*—broom snakeweed
*Helianthus annuus*—common sunflower
* *Helminthotheca echioides*—bristly oxtongue
*Heterotheca grandiflora*—telegraphweed
* *Lactuca serriola*—prickly lettuce
*Lasthenia californica* ssp. *californica*—California goldfields
*Lasthenia gracilis*—needle goldfields
*Layia glandulosa*—whitedaisy tidytips
*Layia platyglossa*—coastal tidytips
*Leptosyne bigelovii*—Bigelow's tickseed
*Lessingia glandulifera* var. *peirsonii*—valley lessingia
*Logfia filaginoides*—California cottonrose
*Malacothrix glabrata*—smooth desertdandelion
*Monolopia lanceolata*—common monolopia
* *Senecio vulgaris*—old-man-in-the-Spring
* *Sonchus asper* ssp. *asper*—spiny sowthistle
*Uropappus lindleyi*—Lindley's silverpuffs
*Xylorhiza tortifolia* var. *tortifolia*—Mojave woodyaster

## BIGNONIACEAE—BIGNONIA FAMILY

* *Jacaranda mimosifolia*—blue jacaranda

## BORAGINACEAE—BORAGE FAMILY

*Amsinckia menziesii*—Menzies' fiddleneck
*Amsinckia tessellata* var. *tessellata*—bristly fiddleneck
*Cryptantha intermedia*—Clearwater cryptantha
*Cryptantha muricata* var. *jonesii*—pointed cryptantha
*Cryptantha pterocarya* var. *pterocarya*—wingnut cryptantha
*Cryptantha simulans*—pinewoods cryptantha
*Eremocarya micrantha* var. *micrantha*—redroot cryptantha
*Eriodictyon crassifolium* var. *crassifolium*—thickleaf yerba santa
*Greeneocharis circumscissa* var. *circumscissa*—cushion cryptantha
*Nemophila menziesii* var. *menziesii*—baby blue eyes
*Pectocarya linearis* ssp. *ferocula*—sagebrush combseed
*Pectocarya setosa*—moth combseed
*Phacelia cicutaria* var. *hispida*—caterpillar phacelia
*Phacelia distans*—distant phacelia
*Phacelia fremontii*—Fremont's phacelia
*Phacelia parryi*—Parry's phacelia
*Phacelia ramosissima*—branching phacelia
*Phacelia tanacetifolia*—lacy phacelia

*Pholistoma membranaceum*—white fiestaflower
*Plagiobothrys nothofulvus*—popcorn flower

## BRASSICACEAE—MUSTARD FAMILY

*Boechera pulchra*—beautiful rockcress
* *Brassica nigra*—black mustard
*Caulanthus lasiophyllus*—California mustard
*Erysimum capitatum* var. *capitatum*—sanddune wallflower
* *Hirschfeldia incana*—short-pod mustard
*Lepidium nitidum*—shining pepperweed
* *Raphanus sativus*—cultivated radish
* *Sisymbrium altissimum*—tall tumblemustard
* *Sisymbrium irio*—London rocket
*Thysanocarpus laciniatus*—mountain fringepod
*Tropidocarpum gracile*—dobie pod

## CACTACEAE—CACTUS FAMILY

*Cylindropuntia echinocarpa*—silver cholla
*Opuntia basilaris* var. *basilaris*—beavertail pricklypear
* *Opuntia ficus-indica*—Barbary fig

## CHENOPODIACEAE—GOOSEFOOT FAMILY

*Atriplex canescens* var. *canescens*—fourwing saltbush
* Salsola tragus—prickly Russian thistle

## CONVOLVULACEAE—MORNING-GLORY FAMILY

*Calystegia peirsonii*—Peirson's morning-glory
* *Convolvulus arvensis*—field bindweed
*Cuscuta californica*—chaparral dodder

## CRASSULACEAE—STONECROP FAMILY

*Dudleya lanceolata*—lanceleaf liveforever

## CUCURBITACEAE—GOURD FAMILY

*Marah fabacea*—California man-root
*Marah macrocarpa*—Cucamonga man-root

## ERICACEAE—HEATH FAMILY

*Arctostaphylos glauca*—bigberry manzanita

## EUPHORBIACEAE—SPURGE FAMILY

*Euphorbia albomarginata*—whitemargin sandmat

* *Ricinus communis*—castorbean

## FABACEAE—LEGUME FAMILY

*Acmispon brachycarpus*—foothill deervetch
*Acmispon glaber* var. *glaber*—common deerweed
*Acmispon maritimus* var. *maritimus*—coastal bird's-foot trefoil
*Acmispon micranthus*—San Diego bird's-foot trefoil
*Astragalus didymocarpus* var. *dispermus*—dwarf white milkvetch
*Astragalus purshii* var. *tinctus*—woollypod milkvetch
*Astragalus trichopodus* var. *phoxus*—Santa Barbara milkvetch
*Lupinus bicolor*—miniature lupine
*Lupinus excubitus*—grape soda lupine
*Lupinus hirsutissimus*—stinging annual lupine
*Lupinus sparsiflorus*—Coulter's lupine
*Lupinus succulentus*—hollowleaf annual lupine
* *Melilotus albus*—yellow sweetclover
* *Melilotus indicus*—annual yellow sweetclover
*Trifolium gracilentum*—pinpoint clover

## FAGACEAE—OAK FAMILY

*Quercus agrifolia* var. *agrifolia*—coast live oak
*Quercus berberidifolia*—inland scrub oak
*Quercus john-tuckeri*—Tucker oak

## GARRYACEAE—SILK TASSEL FAMILY

*Garrya flavescens*—ashy silktassel

## GERANIACEAE—GERANIUM FAMILY

* Erodium botrys—longbeak stork's bill
* Erodium cicutarium—redstem stork's bill

## LAMIACEAE—MINT FAMILY

* *Marrubium vulgare*—horehound
*Salvia apiana*—white sage
*Salvia columbariae*—chia
*Salvia dorrii* var. *pilosa*—purple sage
*Salvia mellifera*—black sage
*Scutellaria mexicana*—Mexican bladdersage
*Trichostema lanceolatum*—vinegarweed

## LOASACEAE—LOASA FAMILY

*Mentzelia albicaulis*—whitestem blazingstar

## LYTHRACEAE—LOOSESTRIFE FAMILY

* *Lythrum hyssopifolia*—hyssop loosestrife

## MALVACEAE—MALLOW FAMILY

*Malacothamnus fasciculatus* var. *fasciculatus*—Mendocino bushmallow

## MONTIACEAE—MONTIA FAMILY

*Calandrinia menziesii*—red maids

*Claytonia exigua* ssp. *exigua*—serpentine springbeauty

*Claytonia parviflora* ssp. *parviflora*—streambank springbeauty

## MYRTACEAE—MYRTLE FAMILY

* *Eucalyptus camaldulensis*—river redgum

## NYCTAGINACEAE—FOUR O'CLOCK FAMILY

*Mirabilis laevis* var. *crassifolia*—California four o'clock

## OLEACEAE—OLIVE FAMILY

* *Fraxinus uhdei*—evergreen ash

## ONAGRACEAE—EVENING PRIMROSE FAMILY

*Camissonia strigulosa*—sandysoil suncup

*Camissoniopsis micrantha*—miniature suncup

## OROBANCHACEAE—BROOM-RAPE FAMILY

*Castilleja miniata* ssp. *miniata*—giant red Indian paintbrush

## PAPAVERACEAE—POPPY FAMILY

*Eschscholzia californica*—California poppy

*Eschscholzia minutiflora*—pygmy poppy

## PLANTAGINACEAE—PLANTAIN FAMILY

* *Plantago coronopus*—buckhorn plantain

*Plantago erecta*—dwarf plantain

* *Plantago lanceolata*—narrowleaf plantain

## POLEMONIACEAE—PHLOX FAMILY

*Gilia capitata* ssp. *staminea*—bluehead gilia

*Gilia modocensis*—Modoc gilia

*Loeseliastrum matthewsii*—desert calico

## POLYGONACEAE—BUCKWHEAT FAMILY

*Centrostegia thurberi*—red triangles

*Eriogonum deflexum* var. *baratum*—flatcrown buckwheat
*Eriogonum elongatum* var. *elongatum*—longstem buckwheat
*Eriogonum fasciculatum* var. *foliolosum*—California buckwheat
*Eriogonum fasciculatum* var. *polifolium*—California buckwheat
*Mucronea perfoliata*—perfoliate spineflower

## RANUNCULACEAE—BUTTERCUP FAMILY

*Delphinium parishii* ssp. *parishii*—Parish's larkspur
*Delphinium parryi* ssp. *parryi*—San Bernardino larkspur

## RHAMNACEAE—BUCKTHORN FAMILY

*Ceanothus cuneatus* var. *cuneatus*—buckbrush
*Rhamnus ilicifolia*—hollyleaf redberry

## ROSACEAE—ROSE FAMILY

*Adenostoma fasciculatum* var. *fasciculatum*—chamise
*Cercocarpus betuloides* var. *betuloides*—birchleaf mountain mahogany
*Prunus ilicifolia* ssp. *ilicifolia*—mainland cherry
*Purshia stansburyana*—Stansbury cliff rose

## RUBIACEAE—MADDER FAMILY

*Galium angustifolium* ssp. *angustifolium*—narrowleaf bedstraw
*Galium aparine*—stickywilly
*Galium californicum* ssp. *flaccidum*—California bedstraw

## SALICACEAE—WILLOW FAMILY

*Salix exigua*—sandbar willow
*Salix gooddingii*—Goodding's willow
*Salix lasiolepis*—arroyo willow

## SOLANACEAE—NIGHTSHADE FAMILY

*Datura wrightii*—sacred thorn-apple
*Lycium andersonii*—Anderson’s boxthorn
*Lycium cooperi*—peach thorn
* *Nicotiana glauca*—tree tobacco
*Solanum douglasii*—greenspot nightshade
*Solanum xanti*—Purple nightshade

## URTICACEAE—NETTLE FAMILY

*Urtica dioica*—stinging nettle
* *Urtica urens*—dwarf nettle

### VIBURNACEAE—MUSKROOT FAMILY

*Sambucus mexicana*—blue elderberry

### ZYGOPHYLLACEAE—CALTROP FAMILY

*Larrea tridentata*—creosote bush

## Gymnosperms & Gnetophytes

### CUPRESSACEAE—CYPRESS FAMILY

*Juniperus californica*—California juniper

### EPHEDRACEAE—EPHEDRA FAMILY

*Ephedra californica*—California joint fir

*Ephedra nevadensis*—Nevada joint fir

*Ephedra viridis*—Mormon tea

### PINACEAE—PINE FAMILY

* *Pinus halepensis*—Aleppo pine

## Monocots

### AGAVACEAE—AGAVE FAMILY

*Agave americana*—American century plant

*Chlorogalum pomeridianum* var. *pomeridianum*—wavyleaf soap plant

*Hesperoyucca whipplei*—chaparral yucca

*Yucca brevifolia*—Joshua tree

### ALLIACEAE—ONION FAMILY

*Allium fimbriatum* var. *fimbriatum*—fringed onion

### IRIDACEAE—IRIS FAMILY

*Sisyrinchium bellum*—western blue-eyed grass

### LILIACEAE—LILY FAMILY

*Calochortus clavatus* var. *gracilis*—slender mariposa-lily

*Calochortus kennedyi* var. *kennedyi*—desert mariposa lily

*Calochortus venustus*—butterfly mariposa lily

### POACEAE—GRASS FAMILY

*Aristida purpurea* var. *longiseta*—Fendler threeawn

* *Avena barbata*—slender oat

* *Avena fatua*—wild oat

* *Bromus hordeaceus*—soft brome
* *Bromus rubens*—red brome
* *Bromus tectorum*—cheatgrass
* *Cynodon dactylon*—Bermudagrass
  *Elymus condensatus*—giant wild rye
  *Elymus elymoides* var. *elymoides*—squirreltail
* *Festuca myuros*—rat-tail fescue
* *Festuca perennis*—perennial rye grass
* *Hordeum murinum*—mouse barley
* *Lamarckia aurea*—goldentop grass
  *Melica imperfecta*—smallflower melicgrass
  *Poa secunda* ssp. *secunda*—Sandberg bluegrass
* *Schismus barbatus*—common Mediterranean grass
* *Stipa hymenoides*—Indian rice grass
* *Stipa speciosa*—desert needlegrass

## THEMIDACEAE—BRODIAEA FAMILY

*Bloomeria crocea* var. *crocea*—common goldenstar
*Dipterostemon capitatus* ssp. *capitatus*—bluedicks

## TYPHACEAE—CATTAIL FAMILY

*Typha* sp.—cattail species

* signifies introduced (non-native) species

# Appendix C

Special-Status Plant Species
Not Expected to Occur in the Biological Study Area

| Scientific Name | Common Name | Status[1] (Federal/State/CRPR) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Acanthoscyphus parishii* var. *abramsii* | Abrams' oxytheca | None/None/1B.2 | Chaparral/annual herb/June–Aug/3,750–6,745 | Not expected to occur. The study area is located outside of the species' known geographic range, which is limited to the westernmost western transverse ranges (i.e., Santa Monica Mountains, Topa Topa Mountains; Mount Pinos), the coastal slope of the San Gabriel Mountains, and the Santa Ana Mountains (Jepson 2023). |
| *Arctostaphylos glandulosa* ssp. *gabrielensis* | San Gabriel manzanita | None/None/1B.2 | Chaparral/perennial evergreen shrub/Mar/1,950–4,920 | Not expected to occur. Suitable habitat is present within the study area; however, this conspicuous shrub was not observed. |
| *Arenaria paludicola* | marsh sandwort | FE/SE/1B.1 | Marshes and swamps; Openings, Sandy/perennial stoloniferous herb/May–Aug/10–560 | Not expected to occur. The study area is located outside of the species' known elevation range. |
| *Astragalus brauntonii* | Braunton's milk-vetch | FE/None/1B.1 | Chaparral, Coastal scrub, Valley and foothill grassland; Burned areas (sometimes), Carbonate, Disturbed areas (sometimes), Sandstone (usually)/perennial herb/Jan–Aug/15–2,095 | Not expected to occur. The study area is located outside of the species known geographic range, which is limited to Santa Monica Mountains, Santa Susana Mountains, Simi Hills, the coastal slope of the San Gabriel Mountains, and the Santa Ana Mountains (Jepson Flora Project 2023). |
| *Astragalus hornii* var. *hornii* | Horn's milk-vetch | None/None/1B.1 | Meadows and seeps, Playas; Alkaline, Lake Margins/annual herb/May–Oct/195–2,785 | Not expected to occur. The study area lacks suitable habitat for this species. |
| *Astragalus lentiginosus* var. *Antonius* | San Antonio milk-vetch | None/None/1B.3 | Lower montane coniferous forest, Upper montane coniferous forest/perennial herb/Apr–July/4,920–8,530 | Not expected to occur. The study area is located outside of the species' known elevation range. |

| Scientific Name | Common Name | Status[1] (Federal/State/CRPR) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Astragalus preussii* var. *laxiflorus* | Lancaster milk-vetch | None/None/1B.1 | Chenopod scrub/perennial herb/Mar–May/2,295–2,295 | Not expected to occur. This species was not observed during focused surveys conducted within the species' peak blooming period (Jepson Flora Project 2023; CCH 2023). This species is a conspicuous perennial herb that would have been detected if present. |
| *Atriplex parishii* | Parish's brittlescale | None/None/1B.1 | Chenopod scrub, Playas, Vernal pools; Alkaline/annual herb/June–Oct/80–6,230 | Not expected to occur. The study area lacks suitable habitat for this species. |
| *Berberis nevinii* | Nevin's barberry | FE/SE/1B.1 | Chaparral, Cismontane woodland, Coastal scrub, Riparian scrub; Gravelly (sometimes), Sandy (sometimes)/perennial evergreen shrub/(Feb)Mar–June/230–2,705 | Not expected to occur. Suitable habitat is present within the study area; however, this conspicuous shrub was not observed. |
| *Calochortus clavatus* var. *avius* | Pleasant Valley mariposa-lily | None/None/1B.2 | Lower montane coniferous forest/perennial bulbiferous herb/May–July/1,000–5,905 | Not expected to occur. The study area lacks suitable habitat and is located outside of the known geographical range of this species (i.e., the northern Sierra Nevada Foothills floristic province) (Jepson Flora Project 2023). |
| *Calochortus palmeri* var. *palmeri* | Palmer's mariposa lily | None/None/1B.2 | Chaparral, Lower montane coniferous forest, Meadows and seeps; Mesic/perennial bulbiferous herb/Apr–July/2,325–7,840 | Not expected to occur. The study area lacks suitable micro-habitat for this species. |
| *Calochortus striatus* | alkali mariposa-lily | None/None/1B.2 | Chaparral, Chenopod scrub, Meadows and seeps, Mojavean desert scrub; Alkaline, Mesic/perennial bulbiferous herb/Apr–June/230–5,230 | Not expected to occur. The study area lacks suitable micro-habitat for this species. Additionally, this species was not observed during focused surveys conducted within the species' peak blooming period (Jepson Flora Project 2023; CCH 2023). |

| Scientific Name | Common Name | Status[1] (Federal/State/CRPR) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Castilleja gleasoni* | Mt. Gleason paintbrush | None/SR/1B.2 | Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland; Granitic/perennial herb (hemiparasitic)/May–June(Sep)/3,805–7,115 | Not expected to occur. The study area is located outside of the species' known geographic range (i.e., the San Gabriel Mountains floristic province) (Jepson Flora Project 2023). |
| *Centromadia parryi* ssp. *australis* | southern tarplant | None/None/1B.1 | Marshes and swamps, Valley and foothill grassland, Vernal pools/annual herb/May–Nov/0–1,570 | Not expected to occur. The study area lacks suitable micro-habitat for the species. |
| *Chorizanthe parryi* var. *fernandina* | San Fernando Valley spineflower | None/SE/1B.1 | Coastal scrub, Valley and foothill grassland/annual herb/Apr–July/490–4,000 | Not expected to occur. This species was not observed during focused surveys conducted within the species' peak blooming period (Jepson Flora Project 2023; CCH 2023). |
| *Chorizanthe parryi* var. *parryi* | Parry's spineflower | None/None/1B.1 | Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland; Openings, Rocky (sometimes), Sandy (sometimes)/annual herb/Apr–June/900–4,000 | Not expected to occur. This species was not observed during focused surveys conducted within the species' peak blooming period (Jepson Flora Project 2023; CCH 2023). |
| *Claytonia peirsonii* ssp. *peirsonii* | Peirson's spring beauty | None/None/1B.2 | Subalpine coniferous forest, Upper montane coniferous forest; Granitic, Metamorphic, Scree, Talus/perennial herb/(Mar)May–June/4,950–9,005 | Not expected to occur. The study area is located outside of the species' known elevation range. |
| *Cryptantha clokeyi* | Clokey's cryptantha | None/None/1B.2 | Mojavean desert woodland or chaparral; rocky to gravelly slopes, ridge crests, granite, rhyolite, or schist/annual herb/Apr–Jun/2,375–4,475 | Not expected to occur. The study area lacks suitable micro-habitat for this species. |
| *Deinandra minthornii* | Santa Susana tarplant | None/SR/1B.2 | Chaparral, Coastal scrub; rocky, often on sandstone /perennial deciduous shrub/July–Nov/920–2490 | Not expected to occur. The study area is located outside of the species known geographic range, which is limited to the southern the western transverse ranges (i.e., Santa Monica Mountains, Santa Susana Mountains) (Jepson Flora Project 2023). |

| Scientific Name | Common Name | Status[1] (Federal/State/CRPR) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Dodecahema leptoceras* | slender-horned spineflower | FE/SE/1B.1 | Chaparral, Cismontane woodland, Coastal scrub; alluvial fans, Sandy/annual herb/Apr–June/655–2,490 | Not expected to occur. The study area lacks suitable sandy alluvial fan micro-habitat for this species. |
| *Dudleya blochmaniae* ssp. *blochmaniae* | Blochman's dudleya | None/None/1B.1 | Chaparral, Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; Clay (often), Rocky, Serpentinite/perennial herb/Apr–June/15–1,475 | Not expected to occur. This species was not observed during focused surveys conducted within the species' peak blooming period (Jepson Flora Project 2023; CCH 2023). This species is a conspicuous fleshy perennial that would have been detected if present. |
| *Dudleya densiflora* | San Gabriel Mountains dudleya | None/None/1B.1 | Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Riparian woodland; Granitic/perennial herb/Mar–July/800–2,000 | Not expected to occur. The study area is located outside of the species' known geographic range (i.e., the San Gabriel Mountains floristic province) (Jepson Flora Project 2023). |
| *Dudleya multicaulis* | many-stemmed dudleya | None/None/1B.2 | Chaparral, Coastal scrub, Valley and foothill grassland; Clay (often)/perennial herb/Apr–July/50–2,590 | Not expected to occur. This species was not observed during focused surveys conducted within the species' peak blooming period (Jepson Flora Project 2023; CCH 2023). This species is a conspicuous fleshy perennial that would have been detected if present. |
| *Eriastrum rosamondense* | Rosamond eriastrum | None/None/1B.1 | Chenopod scrub, Vernal pools; Alkaline, Sandy (often)/annual herb/Apr–May(June–July)/2,295–3,850 | Not expected to occur. The study area lacks suitable habitat and is located outside of the known geographical range of this species (i.e., limited to Rosamond Dry Lake area) (Jepson Flora Project 2023). |
| *Helianthus inexpectatus* | Newhall sunflower | None/None/1B.1 | Marshes and swamps, Riparian woodland; freshwater seeps/perennial rhizomatous herb/Aug–Oct/1,000–1,000 | Not expected to occur. The study area lacks suitable habitat and is located outside of the species' known elevation range. |

| Scientific Name | Common Name | Status[1] (Federal/State/CRPR) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Horkelia cuneata* var. *puberula* | mesa horkelia | None/None/1B.1 | Chaparral, Cismontane woodland, Coastal scrub; Gravelly (sometimes), Sandy (sometimes)/perennial herb/Feb–July(Sep)/230–2,655 | Not expected to occur. This species was not observed during focused surveys conducted within the species' peak blooming period (Jepson Flora Project 2023; CCH 2023). This species is a conspicuous perennial herb that would have been detected if present. |
| *Imperata brevifolia* | California satintail | None/None/2B.1 | Chaparral, Coastal scrub, Meadows and seeps, Mojavean desert scrub, Riparian scrub; Mesic/perennial rhizomatous herb/Sep–May/0–3,985 | Not expected to occur. The study area lacks suitable mesic micro-habitat for this species. |
| *Lasthenia glabrata* ssp. *coulteri* | Coulter's goldfields | None/None/1B.1 | Marshes and swamps, Playas, Vernal pools/annual herb/Feb–June/5–4,000 | Not expected to occur. The study area lacks suitable habitat for this species. Additionally, this species was not observed during the biological reconnaissance and focused surveys conducted during this species' peak blooming period (CCH 2023). |
| *Lepechinia rossii* | Ross' pitcher sage | None/None/1B.2 | Chaparral/perennial shrub/May–Sep/1,000–2,590 | Not expected to occur. Suitable habitat is present within the study area; however, this conspicuous shrub was not observed. |
| *Lilium parryi* | lemon lily | None/None/1B.2 | Lower montane coniferous forest, Meadows and seeps, Riparian forest, Upper montane coniferous forest; Mesic/perennial bulbiferous herb/July–Aug/4,000–9,005 | Not expected to occur. The study area lacks suitable habitat for this species. |
| *Linanthus concinnus* | San Gabriel linanthus | None/None/1B.2 | Chaparral, Lower montane coniferous forest, Upper montane coniferous forest; Openings, Rocky/annual herb/Apr–July/4,985–9,185 | Not expected to occur. The study area is located outside of the species' known elevation range. |

| Scientific Name | Common Name | Status[1] (Federal/State/CRPR) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Loeflingia squarrosa* var. *artemisiarum* | sagebrush loeflingia | None/None/2B.2 | Desert dunes, Great Basin scrub, Sonoran desert scrub; Sandy/annual herb/Apr–May/2,295–5,295 | Not expected to occur. The study area lacks suitable habitat. Additionally, this species was not observed during focused surveys conducted within the species' peak blooming period (Calflora 2023; CCH 2023). This species is a perennial herb that would have been detected if present. |
| *Lupinus paynei* | Payne's bush lupine | None/None/1B.1 | Coastal scrub, Riparian scrub, Valley and foothill grassland; Sandy/perennial shrub/Mar–Apr (May–July)/720–1,375 | Not expected to occur. Suitable habitat is present within the study area; however, this conspicuous shrub was not observed. |
| *Lupinus peirsonii* | Peirson's lupine | None/None/1B.3 | Joshua tree "woodland", Lower montane coniferous forest, Pinyon and juniper woodland, Upper montane coniferous forest; Gravelly, Rocky/perennial herb/Apr–June/3,280–8,200 | Not expected to occur. This species was not observed during focused surveys conducted within the species' blooming period (Jepson Flora Project 2023; CCH 2023). This species is a conspicuous perennial herb that would have been detected if present. |
| *Malacothamnus davidsonii* | Davidson's bush-mallow | None/None/1B.2 | Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland/perennial deciduous shrub/June–Jan/605–3,740 | Not expected to occur. Suitable habitat is present within the study area; however, this conspicuous shrub was not observed. |
| *Monardella australis* ssp. *gabrielensis* | San Gabriel Mountains monardella | None/None/1B.2 | Broadleafed upland forest, Chaparral, Lower montane coniferous forest; Granitic, Openings/shrub/July–Sep/5,245–7,215 | Not expected to occur. The study area is located outside of the species' known elevation range. |
| *Monardella hypoleuca* ssp. *hypoleuca* | white-veined monardella | None/None/1B.3 | Chaparral, Cismontane woodland/perennial herb/(Apr)May–Aug(Sep–Dec)/165–5,000 | Not expected to occur. This species was not observed during focused surveys conducted within the species' blooming period (Jepson Flora Project 2023; CCH 2023). This species is a conspicuous perennial herb that would have been detected if present. |

| Scientific Name | Common Name | Status[1] (Federal/State/CRPR) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Nasturtium gambelii* | Gambel's water cress | FE/ST/1B.1 | Marshes and swamps (freshwater or brackish)/perennial rhizomatous herb/Apr–Oct/15–1,080 | Not expected to occur. The study area lacks suitable habitat for this species. |
| *Navarretia fossalis* | spreading navarretia | FT/None/1B.1 | Chenopod scrub, Marshes and swamps (assorted shallow freshwater), Playas, Vernal pools; alkali or clay soil with hydrological regimes similar to vernal pools/annual herb/Apr–June/95–2,145 | Not expected to occur. The study area lacks suitable habitat for this species. |
| *Navarretia setiloba* | Piute Mountains navarretia | None/None/1B.1 | Cismontane woodland, Pinyon and juniper woodland, Valley and foothill grassland; Clay (sometimes), Gravelly (sometimes), Loam (sometimes)/annual herb/Apr–July/935–6,885 | Not expected to occur. This species was not observed during focused surveys conducted within the species' peak blooming period (Jepson Flora Project 2023; CCH 2023). |
| *Nemacladus secundiflorus* var. *robbinsii* | Robbins' nemacladus | None/None/1B.2 | Chaparral, Valley and foothill grassland; Openings/annual herb/Apr–June/1,145–5,575 | Not expected to occur. This species was not observed during focused surveys conducted within the species' peak blooming period (Jepson Flora Project 2023; CCH 2023). |
| *Opuntia basilaris* var. *brachyclada* | short-joint beavertail | None/None/1B.2 | Chaparral, Joshua tree woodland, Mojavean desert scrub, Pinyon and juniper woodland/perennial stem succulent/Apr–June(Aug)/1,390–5,905 | Not expected to occur. This species was not observed during focused surveys conducted within the species' peak blooming period (Jepson Flora Project 2023; CCH 2023). This species is a conspicuous perennial that would have been detected if present. |
| *Orcuttia californica* | California Orcutt grass | FE/SE/1B.1 | Vernal pools/annual herb/Apr–Aug/50–2,165 | Not expected to occur. The study area lacks suitable habitat for this species. |
| *Oreonana vestita* | woolly mountain-parsley | None/None/1B.3 | Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest; Gravelly (sometimes), Talus (sometimes)/perennial herb/Mar–Sep/5,295–11,480 | Not expected to occur. The study area is located outside of the species' known elevation range. |

| Scientific Name | Common Name | Status[1] (Federal/State/CRPR) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Orobanche valida* ssp. *valida* | Rock Creek broomrape | None/None/1B.2 | Chaparral, Pinyon and juniper woodland; Granitic/perennial herb (parasitic)/May–Sep/3,375–6,560 | Not expected to occur. The study area lacks suitable micro-habitat for this species. |
| *Plagiobothrys parishii* | Parish's popcornflower | None/None/1B.1 | Great Basin scrub, Joshua tree "woodland"; Alkaline, Mesic/annual herb/Mar–June(Nov)/2,460–4,590 | Not expected to occur. The study area lacks suitable micro-habitat for this species. |
| *Pseudognaphalium leucocephalum* | white rabbit-tobacco | None/None/2B.2 | Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland; sandy, gravelly benches, dry stream bottoms, canyon bottoms/perennial herb/(July)Aug–Nov(Dec)/0–6,885 | Not expected to occur. Marginally suitable habitat is present within the study area; however, this conspicuous subshrub that can be identified to species without being in bloom was not observed during surveys. |
| *Sagittaria sanfordii* | Sanford's arrowhead | None/None/1B.2 | Marshes and swamps/perennial rhizomatous herb (emergent)/May–Oct(Nov)/0–2,130 | Not expected to occur. The study area lacks suitable habitat for this species. |
| *Senecio aphanactis* | chaparral ragwort | None/None/2B.2 | Chaparral, Cismontane woodland, Coastal scrub; Alkaline flats/annual herb/Jan–May/50–2,620 | Not expected to occur. The study area lacks suitable micro-habitat for this species. In addition, this species was not observed during the biological reconnaissance conducted during this species' peak blooming period (CCH 2023). |
| *Sidalcea neomexicana* | salt spring checkerbloom | None/None/2B.2 | Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas; Alkaline, Mesic/perennial herb/Mar–June/50–5,015 | Not expected to occur. The study area lacks suitable micro-habitat for this species. |
| *Spermolepis lateriflora* | western bristly scaleseed | None/None/2A | Sonoran desert scrub; Rocky (sometimes), Sandy (sometimes)/annual herb/Mar–Apr/1,195–2,195 | Not expected to occur. The study area lacks suitable habitat for this species and is located outside of the species' known geographic range (i.e., San Diego County, Arizona, New Mexico) (Calflora 2023; iNaturalist 2023). |

| Scientific Name | Common Name | Status[1] (Federal/State/CRPR) | Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet) | Potential to Occur[2] |
|---|---|---|---|---|
| *Streptanthus campestris* | southern jewelflower | None/None/1B.3 | Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland; rocky/perennial herb/(Apr)May–July/2,950–7,545 | Not expected to occur. This species was not observed during focused surveys conducted within the species' peak blooming period (Jepson Flora Project 2023; CCH 2023). This species is a conspicuous perennial herb that would have been detected if present. |
| *Stylocline masonii* | Mason's neststraw | None/None/1B.1 | Chenopod scrub, Pinyon and juniper woodland; loose sand of washes and flats/annual herb/Mar–May/330–3,935 | Not expected to occur. The study area lacks suitable micro-habitat for this species. |
| *Symphyotrichum greatae* | Greata's aster | None/None/1B.3 | Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Riparian woodland; Mesic/perennial rhizomatous herb/June–Oct/985–6,590 | Not expected to occur. The study area lacks suitable micro-habitat for this species. |
| *Thysanocarpus rigidus* | rigid fringepod | None/None/1B.2 | Pinyon and juniper woodland; Dry, Rocky, Slopes/annual herb/Feb–May/1,965–7,215 | Not expected to occur. This species was not observed during focused surveys conducted within the species' peak blooming period (Jepson Flora Project 2023; CCH 2023). |

**Notes:**

[1] **Status Abbreviations**

**Federal and State Statuses**

FE: Federally listed as endangered
FT: Federally listed as threatened
SE: State listed as endangered
ST: State listed as threatened
SR: State designated as rare
SC: State Candidate for listing

**CRPR: California Rare Plant Rank**

CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2A: Plants presumed extirpated in California but common elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California but more common elsewhere
- Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
- Moderately threatened in California (20% - 80% of occurrences threatened/moderate degree and immediacy of threat)

– Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat)

[2] Refers to records within the subject U.S. Geological Survey (USGS) 7.5-minute quadrangles: Little Rock, Palmdale, Ritter Ridge, Sleepy Valley, Agua Dulce, San Fernando, and Mint Canyon, and surrounding quadrangles (i.e., Alpine Butte, Lancaster East, Hi Vista, Valyermo, Lovejoy Buttes, Juniper Hills, Pacifico Mountain, Lancaster West, Acton, Del Sur, Condor Peak, Green Valley, Sunland, Warm Springs Mountain, Newhall, Oat Mountain, Burbank, Canoga Park, Van Nuys, and Lake Hughes).

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# Appendix D
Wildlife Compendium

# Wildlife Species

## Reptiles

### PHRYNOSOMATIDAE—IGUANID LIZARDS

*Sceloporus occidentalis*—western fence lizard

*Uta stansburiana*—common side-blotched lizard

### TEIIDAE—WHIPTAIL LIZARDS

*Aspidoscelis tigris*—tiger whiptail

## Birds

### ACCIPITRIDAE—HAWKS

*Buteo jamaicensis*—red-tailed hawk

### AEGITHALIDAE—LONG-TAILED TITS & BUSHTITS

*Psaltriparus minimus*—bushtit

### ALAUDIDAE—LARKS

*Eremophila alpestris*—horned lark

### ANATIDAE—DUCKS, GEESE, & SWANS

*Anas crecca*—green-winged teal

*Anas platyrhynchos*—mallard

*Branta canadensis*—Canada goose

*Bucephala albeola*—bufflehead

*Lophodytes cucullatus*—hooded merganser

*Mareca americana*—American wigeon

*Mareca strepera*—gadwall

*Oxyura jamaicensis*—ruddy duck

*Spatula clypeata*—northern shoveler

### CARDINALIDAE—CARDINALS & ALLIES

*Passerina amoena*—lazuli bunting

*Pheucticus melanocephalus*—black-headed grosbeak

*Piranga ludoviciana*—western tanager

### CATHARTIDAE—NEW WORLD VULTURES

*Cathartes aura*—turkey vulture

## CHARADRIIDAE—LAPWINGS & PLOVERS

*Charadrius vociferus*—killdeer

## COLUMBIDAE—PIGEONS AND DOVES

*Zenaida macroura*—mourning dove

* *Streptopelia decaocto*—Eurasian collared-dove

## CORVIDAE—JAYS AND CROWS

*Aphelocoma californica*—California scrub-jay

*Corvus corax*—common raven

## CUCULIDAE—CUCKOOS, ROADRUNNERS, & ANIS

*Geococcyx californianus*—greater roadrunner

## FRINGILLIDAE—FINCHES

*Haemorhous mexicanus*—house finch

*Spinus lawrencei*—Lawrence's goldfinch

*Spinus psaltria*—lesser goldfinch

## HIRUNDINIDAE—SWALLOWS

*Stelgidopteryx serripennis*—northern rough-winged swallow

## ICTERIDAE—BLACKBIRDS

*Agelaius phoeniceus*—red-winged blackbird

*Icterus bullockii*—Bullock’s oriole

*Sturnella neglecta*—western meadowlark

## LANIIDAE—SHRIKES

*Lanius ludovicianus*—loggerhead shrike

## MIMIDAE—MOCKINGBIRDS & THRASHERS

*Mimus polyglottos*—northern mockingbird

*Toxostoma redivivum*—California thrasher

## ODONTOPHORIDAE—NEW WORLD QUAIL

*Callipepla californica*—California quail

*Oreortyx pictus*—mountain quail

## PARULIDAE—WOOD-WARBLERS

*Cardellina pusilla*—Wilson's warbler

*Geothlypis trichas*—common yellowthroat

*Setophaga coronata*—yellow-rumped warbler

*Setophaga petechia*—yellow warbler

## PASSERELLIDAE—NEW WORLD SPARROWS

*Aimophila ruficeps canescens*—Southern California rufous-crowned sparrow
*Amphispiza bilineata*—black-throated sparrow
*Chondestes grammacus*—lark sparrow
*Junco hyemalis*—dark-eyed junco
*Melozone crissalis*—California towhee
*Passerculus sandwichensis*—savannah sparrow
*Pipilo maculatus*—spotted towhee
*Zonotrichia leucophrys*—white-crowned sparrow

## PASSERIDAE—OLD WORLD SPARROWS

* *Passer domesticus*—house sparrow

## PICIDAE—WOODPECKERS & ALLIES

*Colaptes auratus*—northern flicker

## PODICIPEDIDAE—GREBES

*Podilymbus podiceps*—pied-billed grebe

## RALLIDAE—RAILS, GALLINULES, & COOTS

*Fulica americana*—American coot

## REMIZIDAE—PENDULINE TITS & VERDINS

*Auriparus flaviceps*—verdin

## STURNIDAE—STARLINGS

* *Sturnus vulgaris*—European starling

## SYLVIIDAE—SYLVIID WARBLERS

*Chamaea fasciata*—wrentit

## TROCHILIDAE—HUMMINGBIRDS

*Calypte anna*—Anna's hummingbird
*Calypte costae*—Costa's hummingbird

## TROGLODYTIDAE—WRENS

*Campylorhynchus brunneicapillus*—cactus wren
*Salpinctes obsoletus*—rock wren
*Thryomanes bewickii*—Bewick's wren

## TURDIDAE—THRUSHES

*Sialia currucoides*—mountain bluebird

### TYRANNIDAE—TYRANT FLYCATCHERS

*Myiarchus cinerascens*—ash-throated flycatcher
*Sayornis nigricans*—black phoebe
*Sayornis saya*—Say's phoebe
*Tyrannus verticalis*—western kingbird
*Tyrannus vociferans*—Cassin's kingbird

### VIREONIDAE—VIREOS

*Vireo gilvus*—warbling vireo

## Mammals

### CANIDAE—WOLVES & FOXES

*Canis latrans*—coyote

### CERVIDAE—DEERS

*Odocoileus hemionus*—mule deer

### MUSTELIDS—WEASELS, SKUNKS, AND OTTERS

*Taxidea taxus*—American badger

### SCIURIDAE—SQUIRRELS

*Otospermophilus beecheyi*—California ground squirrel

* signifies introduced (non-native) species

# Appendix E

Special-Status Wildlife Species
With Low Potential or Not Expected to Occur
in the Biological Study Area

| Scientific Name | Common Name | Status[1] (Federal/State) | Habitat | Potential to Occur[2] |
|---|---|---|---|---|
| **Invertebrates** | | | | |
| *Branchinecta lynchi* | vernal pool fairy shrimp | FT/None | Vernal pools, seasonally ponded areas within vernal swales, and ephemeral freshwater habitats | Not expected to occur. Suitable habitat for the species is not present in the Study Area. |
| *Euphydryas editha quino* | quino checkerspot butterfly | FE/None | Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include Plantago erecta, P. patagonica, and Antirrhinum coulterianum, among others | Not expected to occur. Although a host plant for this species (i.e., *Plantago erecta*) was identified within the study area, this species is considered extirpated from Los Angeles County (USFWS 2019). |
| *Streptocephalus woottoni* | Riverside fairy shrimp | FE/None | Vernal pools, non-vegetated ephemeral pools | Not expected to occur. Suitable habitat for the species is not present in the study area. |
| *Danaus plexippus plexippus pop. 1* | monarch - California overwintering population | FC; USFS/None | Wind-protected tree groves with nectar sources and nearby water sources | Not expected to occur. Suitable overwintering habitat for the species is not present in the study area. |
| **Fish** | | | | |
| *Catostomus santaanae* | Santa Ana sucker | FT/None | Small, shallow, cool, clear streams less than 7 meters (23 feet) in width and a few centimeters to more than a meter (1.5 inches to more than 3 feet) in depth; substrates are generally coarse gravel, rubble, and boulder | Not expected to occur. The study area lacks perennial aquatic habitat suitable for this species. |
| *Gasterosteus aculeatus williamsoni* | unarmored threespine stickleback | FE/FP, SE | Slow-moving and backwater areas | Not expected to occur. The study area lacks perennial aquatic habitat suitable for this species. |
| *Gila orcuttii* | arroyo chub | USFS /SSC | Warm, fluctuating streams with slow-moving or backwater sections of warm to cool streams at depths >40 centimeters (16 inches); substrates of sand or mud | Not expected to occur. The study area lacks permanent streams suitable for this species. |

| Scientific Name | Common Name | Status[1] (Federal/State) | Habitat | Potential to Occur[2] |
|---|---|---|---|---|
| *Rhinichthys osculus* ssp. 8 | Santa Ana speckled dace | None/SSC | Headwaters of the Santa Ana and San Gabriel Rivers; may be extirpated from the Los Angeles River system | Not expected to occur. The study area lacks perennial aquatic habitat suitable for this species. |
| **Amphibians** | | | | |
| *Anaxyrus californicus* | arroyo toad | FE; USFS/SSC | Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering | Not expected to occur. Suitable habitat for the species is not present in the study area. |
| *Rana draytonii* | California red-legged frog | FT/SSC | Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands | Not expected to occur. Suitable habitat for the species is not present in the study area. |
| *Rana muscosa* | mountain yellow-legged frog | FE; USFS/SE | Lakes, ponds, meadow streams, isolated pools, and open riverbanks; rocky canyons in narrow canyons and in chaparral | Not expected to occur. Suitable habitat for the species is not present in the study area. |
| *Spea hammondii* | western spadefoot | None/SSC | Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture | Low potential to occur. Although some work locations (i.e., Tower 61-2, TS 65-4 through 66-1, TS 70-4 through 71-1, Tower 76-5, and Tower 77-1) occur within the known geographic range for the species and contain chaparral and coastal scrub vegetation communities, suitable breeding habitat for this species is not present within the project footprint. |
| *Taricha torosa* (Monterey Co. south only) | California newt | None/SSC | Wet forests, oak forests, chaparral, and rolling grassland | Not expected to occur. Suitable habitat for the species is not present in the study area. |

| Scientific Name | Common Name | Status[1] (Federal/State) | Habitat | Potential to Occur[2] |
|---|---|---|---|---|
| **Reptiles** | | | | |
| *Anniella stebbinsi* | southern California legless lizard | USFS/SSC | Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and moist sandy or loose, loamy soils | Not expected to occur. The project is outside of this species' known geographic range (Nafis 2023). |
| *Emys marmorata* | western pond turtle | USFS/SSC | Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter | Not expected to occur. Suitable habitat for the species is not present in the study area. |
| *Gopherus agassizii* | Mojave desert tortoise | FT/ST | Arid and semi-arid habitats in Mojave and Sonoran Deserts, including sandy or gravelly locations along riverbanks, washes, sandy dunes, canyon bottoms, desert oases, rocky hillsides, creosote flats, and hillsides | Low potential to occur. The study area contains suitable Mojavean desert habitat at TS 33-2 through 33-3 and Tower 32-4 occur at the southwestern boundary of the geographic range for this species; however, no suitable burrows were detected within the study area. |
| *Thamnophis hammondii* | two-striped gartersnake | None/SSC | Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools | Not expected to occur. Suitable habitat for the species is not present within the project footprint. |
| **Birds** | | | | |
| *Agelaius tricolor* (nesting colony) | tricolored blackbird | None/SSC, ST | Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberrry; forages in grasslands, woodland, and agriculture | Not expected to occur. Suitable habitat for the species is not present in the study area. |
| *Ammodramus savannarum* (nesting) | grasshopper sparrow | None/SSC | Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches | Not expected to occur. Suitable habitat for the species is not present in the study area. |

| Scientific Name | Common Name | Status[1] (Federal/State) | Habitat | Potential to Occur[2] |
|---|---|---|---|---|
| *Aquila chrysaetos* (nesting & wintering) | golden eagle | None/FP | Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats | Not expected to nest, low potential to forage. The project site lacks large trees or open cliffs for this species to use as nesting habitat. This species has a low potential to forage or would be a rare migrant over the project vicinity. |
| *Athene cunicularia* (burrow sites and some wintering sites) | burrowing owl | None/SSC | Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows | Low potential to occur. The study area contains suitable habitat at work locations on the northeastern portion of the project (i.e.,Tower 32-4, TS 33-2 through 33-3, TS 35-2 through 35-3, TS 38-1 through 38-2, TS 38-4 through 39-1, TS 41-3 through 41-4); however, no suitable burrows were detected within the study area. |
| *Buteo swainsoni* (nesting) | Swainson's hawk | None/ST | Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture | Not expected to nest. The study area lacks suitable nesting habitat. This species may occur as a rare transient during migration. |
| *Charadrius montanus* (wintering) | mountain plover | None/SSC | Winters in plowed fields, grazed grasslands, burned fields | Low potential to occur. The study area lacks suitable wintering habitat typical for this species and would only occur as an uncommon transient. |
| *Coccyzus americanus occidentalis* (nesting) | western yellow-billed cuckoo | FT; USFS/SE | Nests in dense, wide riparian woodlands and forest with well-developed understories | Not expected to occur. Suitable habitat for the species is not present in the study area. |
| *Elanus leucurus* (nesting) | white-tailed kite | None/FP | Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands | Not expected to occur. The study area lacks suitable nesting habitat for this species. In addition, suitable foraging habitat in close proximity to potential nesting habitat is not present in the study area. |

| Scientific Name | Common Name | Status[1] (Federal/State) | Habitat | Potential to Occur[2] |
|---|---|---|---|---|
| *Empidonax traillii extimus* (nesting) | southwestern willow flycatcher | FE/SE | Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration | Not expected to occur. Suitable habitat for the species is not present in the study area. |
| *Gymnogyps californianus* | California condor | FE/FP, SE | Nests in rock formations, deep caves, and occasionally in cavities in giant sequoia trees (Sequoiadendron giganteus); forages in relatively open habitats where large animal carcasses can be detected | Not expected to nest or forage. The large majority of the study area is located outside of the known geographical range for this species (CDFW 2023b). Although TS 65-4 through 66-1 occurs within their range, this work location lacks suitable habitat. |
| *Haliaeetus leucocephalus* (nesting & wintering) | bald eagle | FPD, USFS/FP, SE | Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains | Not expected to occur. Suitable habitat for the species is not present in the study area. |
| *Polioptila californica californica* | coastal California gnatcatcher | FT/SSC | Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level | Not expected to occur. Tower 77-1 is the only proposed work location that both contains coastal sage scrub habitat and is located within the known geographic range for this species. However, the coastal sage scrub habitat within the Tower 77-1 footprint is primarily composed of a monotypic stand of brittle bush, which is not typically used by the species (Beyers and Pena 1995). Final critical habitat for this species occurs approximately 130 feet from Tower Span 70-4 to 71-1, there is no suitable coastal sage scrub habitat present at this work location. |
| *Vireo bellii pusillus* (nesting) | least Bell's vireo | FE/SE | Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season | Not expected to occur. Riparian habitat within the study area for TS 70-4 through 71-1 is too isolated and narrow to provide suitable nesting habitat for this species. Suitable nesting habitat is not present within the study area for other work areas. |

| Scientific Name | Common Name | Status[1] (Federal/State) | Habitat | Potential to Occur[2] |
|---|---|---|---|---|
| **Mammals** | | | | |
| *Antrozous pallidus* | pallid bat | USFS/SSC | Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees | Not expected to roost, low potential to forage. The study area lacks rocky outcrops, man-made structures, or trees suitable for this species to use as roosting habitat. This species could occasionally forage in vegetation within the study area. |
| *Chaetodipus fallax pallidus* | pallid San Diego pocket mouse | None/SSC | Desert wash, desert scrub, desert succulent scrub, and pinyon–juniper woodland | Not expected to occur. The study area is located outside of this species' known geographical range (CDFW 2023b). |
| *Corynorhinus townsendii* | Townsend's big-eared bat | USFS/SSC | Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels | Not expected to roost. The study area lacks suitable roosting habitat. This species is a far-flied bat that has a low potential to forage within riparian habitat located near TS 70-4 through 71-1. |
| *Dasypterus xanthinus* | western yellow bat | None/SSC | Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian and palms | Not expected to occur. The proposed project footprint lacks suitable roosting and foraging habitat for this species. . |
| *Euderma maculatum* | spotted bat | None/SSC | Foothills, mountains, desert regions of southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes | Not expected to occur. The proposed project footprint lacks suitable roosting and foraging habitat for this species. |
| *Eumops perotis californicus* | western mastiff bat | None/SSC | Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, and tunnels | Not expected to roost, low potential to forage. The project site lacks rocky canyons, cliffs, trees, or tunnels suitable for this species to use as roosting habitat. May forage within chaparral and scrub habitat on site if roosting sites exist nearby. |
| *Macrotus californicus* | Californian leaf-nosed bat | None/SSC | Riparian woodlands, desert wash, desert scrub; roosts in mines and caves, occasionally buildings | Not expected to occur. The study area is located outside of this species' known geographical range (CDFW 2023b). |

| Scientific Name | Common Name | Status[1] (Federal/State) | Habitat | Potential to Occur[2] |
|---|---|---|---|---|
| *Nyctinomops macrotis* | big free-tailed bat | None/SSC | Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water | Not expected to occur. The proposed project footprint lacks suitable roosting and foraging habitat for this species. |
| *Perognathus alticola inexpectatus* | Tehachapi pocket mouse | USFS/SSC | Grassland, Joshua tree woodland, pinyon–juniper woodland, yellow pine woodland, and oak savanna | Not expected to occur. The study area is located outside of this species' known geographical range (CDFW 2023b). The southeastern extent of this species' range occurs at Lake Hughes and Elizabeth Lake, which is over 10 miles from the closest project work area (Tower 54-2) (Brylski et al. 1998). |
| *Perognathus longimembris brevinasus* | Los Angeles pocket mouse | None/SSC | Lower-elevation grassland, alluvial sage scrub, and coastal scrub | Not expected to occur. The study area is located outside of this species' known geographical range (CDFW 2023b). The project site at Towers 76-5 and 77-1 occurs within the northwestern extent of the species' historical range; however, the current range does not include the San Fernando Valley (Brylski et al. 1998). |
| *Puma concolor* (Southern California/ Central Coast Evolutionarily Significant Unit) | mountain lion | None/CST | Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts | Low potential to occur. Expected to occur in the study area as a transient. The species is expected to occur infrequently in the study area (except for Towers 32-4, 33-2, and 33-3) as a transient during range movement, foraging, and dispersal. Natal dens of the species are not expected because females typically avoid areas of human activity and the project site and adjacent areas include quarry activities and other continuous anthropogenic disturbances (vehicular traffic and residential development) (Center for Biological Diversity and the Mountain Lion Foundation 2019). |

| Scientific Name | Common Name | Status[1] (Federal/State) | Habitat | Potential to Occur[2] |
|---|---|---|---|---|
| *Spermophilus (Xerospermophilus) mohavensis* | Mohave ground squirrel | None/ST | Desert scrub habitats including those dominated by creosote bush and burrobush, desert sink scrub, and desert saltbush scrub | Low potential to occur. Tower 32-4 is located just outside of the current geographic range for this species (CDFW 2023b). Additionally, the closest recent occurrence is over 19 miles from the project site (Tower 32-4) (CDFW 2023a). |

**Notes:**

1 **Status Abbreviations**
FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal Candidate for Listing
FPD: Federally Delisted
SE: State listed as endangered
ST: State listed as threatened
CSE: Candidate for State Endangered
CST: Candidate for State Threatened
USFS: U.S. Forest Service Sensitive
SSC: California Species of Special Concern
FP: California Fully Protected Species

2 Refers to records within the subject U.S. Geological Survey (USGS) 7.5-minute quadrangles: Little Rock, Palmdale, Ritter Ridge, Sleepy Valley, Agua Dulce, San Fernando, and Mint Canyon, and surrounding quadrangles (i.e., Alpine Butte, Lancaster East, Hi Vista, Valyermo, Lovejoy Buttes, Juniper Hills, Pacifico Mountain, Lancaster West, Acton, Del Sur, Condor Peak, Green Valley, Sunland, Warm Springs Mountain, Newhall, Oat Mountain, Burbank, Canoga Park, Van Nuys, and Lake Hughes).

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# Appendix F

Jurisdictional Waters Assessment

March 19, 2024

Jared Brock
Los Angeles Department of Water and Power
Wastewater Quality and Compliance
111 North Hope Street, Room 1213
Los Angeles, California 90012

**VIA EMAIL**
**Jared.Brock@ladwp.com**

Subject: Jurisdictional Waters Assessment for the Adelanto-Rinaldi Transmission Line Compliance Project, Los Angeles County, California

Dear Mr. Brock:

This Letter Report is provided to summarize the findings of field assessments performed on November 16, 2022 and January 30, 2024 at 17 locations along the Adelanto-Rinaldi Transmission Line. The purpose of the assessment was to identify any potentially jurisdictional waters or any other sensitive biological resources that would constrain proposed transmission line work activities. The assessed locations, summarized in Table 1, begin in southern Palmdale and proceed in a southwesterly direction until reaching the Van Norman Reservoir area in the community of Granada Hills (Exhibit 1).

**TABLE 1**
**LOCATIONS ASSESSED**

| Site Name | Site Description | Location | Proposed Activity |
|---|---|---|---|
| Site 1 | Tower 32-4 | 34.511039°, -117.992128° | Tower Raise |
| Site 2 | Tower Span 33-2 to 33-3 | 34.510064°, -118.002210° | Grading |
| Site 3 | Tower Span 35-2 to 35-3 | 34.507942°, -118.037445° | Grading |
| Site 4 | Tower Span 38-1 to 38-2 | 34.501084°, -118.083481° | Grading |
| Site 5 | Tower Span 38-4 to 39-1 | 34.500869°, -118.097084° | Grading |
| Site 6 | Tower Span 41-3 to 41-4 | 34.515665°, -118.140156° | Grading |
| Site 7 | Tower 43-2 | 34.531898°, -118.157412° | Tower Raise |
| Site 8 | Tower 46-4 | 34.557996°, -118.206797° | Tower Raise |
| Site 9 | Tower Span 49-2 to 49-3 | 34.555216°, -118.248186° | Grading |
| Site 10 | Tower 54-2 | 34.521098°, -118.323787° | Tower Raise |
| Site 11 | Tower Span 57-1 to 57-2 | 34.498526°, -118.364595° | Grading |
| Site 12 | Tower 57-2 | 34.496454°, -118.369205° | Tower Raise |

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**TABLE 1**
**LOCATIONS ASSESSED**

| Site Name | Site Description | Location | Proposed Activity |
|---|---|---|---|
| Site 13 | Tower 61-2 | 34.480988°, -118.434606° | Tower Raise |
| Site 14 | Tower Span 65-4 to 66-1 | 34.443747°, -118.491813° | Grading |
| Site 15 | Tower Span 70-4 to 71-1 | 34.379363°, -118.488413° | Grading |
| Site 16 | Tower 76-5 | 34.302841°, -118.492631° | Tower Raise |
| Site 17 | Tower 77-1 | 34.299503°, -118.490458° | Tower Raise and Grading of New Permanent Access Road |

The following is a summary of observations from Psomas Biologist Trevor Bristle at each of the project locations during the November 16, 2022 and January 30, 2024 field evaluations. Site photographs are provided in Attachment A to supplement the descriptions of each site below.

## FINDINGS

### Site 1

This site consists of Tower 32-4 and its immediate surroundings. The area is generally flat. Vegetation in the area was characterized by creosote bush scrub habitat, dominated by species such as cheesebush (*Ambrosia salsola*), creosote (*Larrea tridentata*), and chaparral yucca (*Hesperoyucca whipplei*). Several western Joshua trees (*Yucca brevifolia*) were noted in the vicinity of Tower 32-4 and should be carefully avoided. This species is currently a Candidate for listing as a Threatened species under the California Endangered Species Act.

No jurisdictional waters were observed at Site 1. Measures to avoid impacts to western Joshua trees are provided below.

### Site 2

This site is a raised area below the transmission lines between Tower 33-2 and 33-3. Two water tanks are present approximately 100 feet northeast of this location. A buffer area extending 50 feet beyond the proposed disturbance limits was surveyed to identify any sensitive biological resources that had the potential to constrain project activities. Vegetation in the area was characterized by creosote bush scrub habitat, dominated by species such as creosote, Mormon tea (*Ephedra viridis*), and chaparral yucca.

No jurisdictional waters or other sensitive biological resources were observed at Site 2.

### Site 3

This site consists of four raised areas below the transmission lines between Tower 35-2 and 35-3. A 50-foot buffer area surrounding the proposed disturbance limits was included in the field assessment to identify any adjacent sensitive biological resources. The area contains desert scrub habitat dominated by Mormon tea, California buckwheat (*Eriogonom fasciculatum*), and rubber rabbitbrush (*Ericameria nauseosa*).

No jurisdictional waters or other sensitive biological resources were observed at Site 3.

**Site 4**

This site is a raised area below the transmission lines between Tower 38-1 and 38-2. A 50-foot buffer area surrounding the proposed disturbance limits was included in the field assessment to identify any adjacent sensitive biological resources. Dominant vegetation in the area consists of Mormon tea, rubber rabbitbrush, and various non-native grasses.

No jurisdictional waters or other sensitive biological resources were observed at Site 4.

**Site 5**

This site is a raised area below the transmission lines between Tower 38-4 and 39-1. A 50-foot buffer area surrounding the proposed disturbance limits was included in the field assessment to identify any adjacent sensitive biological resources. Dominant vegetation in the area consists of rubber rabbitbrush and non-native grasses.

No jurisdictional waters or other sensitive biological resources were observed at Site 5.

**Site 6**

This site is a raised area below the transmission lines between Tower 41-3 and 41-4. A 50-foot buffer area surrounding the proposed disturbance limits was included in the field assessment to identify any adjacent sensitive biological resources. Dominant vegetation in the area consists of California buckwheat and non-native grasses.

No jurisdictional waters or other sensitive biological resources were observed at Site 6.

**Site 7**

This site consists of Tower 43-2 and its immediate surroundings. Evidence of erosion was observed on the various access roads that lead to a McCarthy drain that discharges water to upland areas that are north and east of the tower site. However, no jurisdictional waters were noted in the vicinity of the tower. The topography is very rugged and characterized by steep slopes. Dominant vegetation in the area consists of scrub oak (*Quercus berberidifolia*), California buckwheat, holly-leaf cherry (*Prunus ilicifolia*), everlasting (*Pseudognaphalium* sp.), and California juniper (*Juniperus californica*).

No jurisdictional waters or other sensitive biological resources were observed at Site 7.

**Site 8**

This site consists of Tower 46-4 and its immediate surroundings. The topography is very rugged and characterized by steep slopes. Dominant vegetation in the area consists of California buckwheat, rubber rabbitbrush, mountain mahogany (*Cercocarpus betuloides*), red-stemmed filaree (*Erodium cicutarium*), wild lilac (*Ceanothus* sp.), and California juniper.

No jurisdictional waters or other sensitive biological resources were observed at Site 8.

**Site 9**

This site is a raised rock pile below the transmission lines between Tower 49-2 and 49-3. A 50-foot buffer area surrounding the proposed disturbance limits was included in the field assessment to identify any

adjacent sensitive biological resources. Dominant vegetation in the area consists of California buckwheat and non-native grasses.

No jurisdictional waters or other sensitive biological resources were observed at Site 9.

**Site 10**

This site consists of Tower 54-2 and its immediate surroundings. Site topography consists of moderately-steep slopes. Mixed chaparral habitat is present at this site, dominated by holly-leaf cherry, California juniper, California buckwheat, California sagebrush (*Artemisia californica*), giant wild rye (*Elymus condensatus*), and chamise (*Adenostoma fasciculatum*).

No jurisdictional waters or other sensitive biological resources were observed at Site 10.

**Site 11**

This site is a raised artificial berm below the transmission lines between Tower 57-1 and 57-2. A 50-foot buffer area surrounding the proposed disturbance limits was included in the field assessment to identify any adjacent sensitive biological resources. Mixed chaparral habitat is present at this site, dominated by California buckwheat and chamise.

No jurisdictional waters or other sensitive biological resources were observed at Site 11.

**Site 12**

This site consists of Tower 57-2 and its immediate surroundings. Site topography consists of moderately-steep slopes. Mixed chaparral habitat is present, consisting of California buckwheat, chaparral yucca, and red brome (*Bromus madritensis*). Small ephemeral drainage features occur south and west of the tower location (Exhibit 2). The Los Angeles Regional Water Quality Control Board (LARWQCB) and the California Department of Fish and Wildlife (CDFW) would likely assert jurisdiction over these features, but they are some distance away from the tower site and should be easily avoided.

**Site 13**

This site consists of Tower 61-2 and its immediate surroundings. The tower is located on a steep slope with mixed chaparral vegetation consisting of chamise, California buckwheat, black sage (*Salvia mellifera*), and four-wing saltbush (*Atriplex canescens*). Small ephemeral drainage features occur in the vicinity of the tower site but do not pass under the tower (Exhibit 3). These features would fall under LARWQCB and CDFW jurisdiction though construction activities should be able to avoid them.

**Site 14**

This site is a raised artificial berm below the transmission lines between Tower 65-4 and 66-1. A 50-foot buffer area surrounding the proposed disturbance limits was included in the field assessment to identify any adjacent sensitive biological resources. Mixed chaparral habitat is present at this site, dominated by California buckwheat, chamise, and black sage.

No jurisdictional waters or other sensitive biological resources were observed at Site 14.

**Site 15**

This site consists of three raised areas below the transmission lines between Tower 70-4 and 71-1. A 50-foot buffer area surrounding the proposed disturbance limits was included in the field assessment to identify any adjacent sensitive biological resources. Dominant vegetation in the area consists of disturbed chamise chaparral habitat, dominated by chamise, tocalote (*Centaurea melitensis*) and desiccated mustard plants.

A portion of Placerita Canyon Creek is located south of this work area (Exhibit 4). The creek at this location is dominated by arroyo willows (*Salix lasiolepis*), Fremont cottonwood (*Populus fremontii*), mule fat (*Baccharis salicifolia*), and watercress (*Nasturtium officinale*). An at-grade crossing passes through this creek to reach Site 15 from the south. Based on a brief assessment of vegetation and hydrology in the creek, wetlands may be present at the at-grade crossing. The site appears to sustain seasonal flows and connects to the Santa Clara River which would make this creek subject to the jurisdiction of the U.S. Army Corps of Engineers, LARWQCB, and CDFW.

**Site 16**

This site consists of Tower 76-5 and its immediate surroundings. This site is located within the LADWP's Van Norman Reservoir property. An artificial basin is located to the north of the tower pad and the topography is generally flat. Vegetation is a mix of non-native species and early successional native shrubs and herbaceous species, including California buckwheat, deerweed (*Acmispon glaber*), telegraph weed (*Heterotheca grandiflora*), brittlebush (*Encelia farinosa*), and short-pod mustard (*Hirschfeldia incana*).

No jurisdictional waters or other sensitive biological resources were observed at Site 16.

**Site 17**

This site consists of Tower 77-1 and its immediate surroundings. This site is located within the LADWP's Van Norman Reservoir property and Van Norman Reservoir is located immediately southeast of this tower site. A non-jurisdictional concrete v-ditch runs along the northside of the tower pad. Vegetation consists of common native shrubs such as California buckwheat, black sage, deerweed, and blue elderberry (*Sambucus nigra* ssp. *caerulea*). Several non-native plants are also present including brittlebush, tree tobacco (*Nicotiana glauca*), and castor bean (*Ricinis communis*).

No jurisdictional waters or other sensitive biological resources were observed at Site 17.

**SUMMARY AND RECOMMENDATIONS**

During the site assessments, sensitive resources were noted in the vicinity of Sites 1, 12, 13, and 15. Site 1 has several western Joshua trees near the tower site, while Sites 12 and 13 have small ephemeral drainages. Site 15 has a larger stream with willow trees and other riparian vegetation south of the area. Wetlands may also be present where an at-grade crossing is located. All of these resources can be avoided by construction personnel.

No jurisdictional waterways or biological constraints were identified at the other sites that would constrain proposed project activities. Suggested general minimization and/or avoidance measures are provided below:

1. Impacts to western Joshua trees should be avoided to prevent the need for acquiring an Incidental Take Permit from the CDFW. All areas within 15 meters of any western Joshua tree should be fenced and no ground-disturbing activities should be allowed within these protected areas.
2. All jurisdictional waters described herein should be avoided. If any discharge of soil or other materials is needed or if any construction equipment needs to operate in these areas, resource agency permits would be needed.
3. If any vegetation disturbance needs to occur during the seasonal nesting period (approximately February 1 through September 15 of any year), a qualified biologist should perform a pre-construction clearance survey to identify any active nests that may be present. If any active nests are identified during this initial survey, an appropriate buffer shall be established, and activities limited until the nest has become inactive.
4. Use appropriate Best Management Practices to avoid or minimize issues such as soil erosion. A single path for ingress and egress to the work site should be established to avoid unnecessary impacts to vegetation.

Psomas appreciates the opportunity to assist with this project. If you have any comments or questions, please call Trevor Bristle at (626) 204-6538.

Sincerely,
PSOMAS

David T. Hughes
Senior Project Manager

Trevor Bristle
Biologist/Regulatory Specialist

Attachments: Exhibits 1 through 4
A – Site Photos

cc: Shane Beck, MBC Aquatic Sciences

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Green Valley
Leona Valley
Bouquet Reservoir
Desert View Highlands
Palmdale
Lake Palmdale
Una Lake
Sun Village
Littlerock
Little Rock Reservoir
Agua Dulce
Acton
Santa Clarita
Stevenson Ranch
Van Norman Bypass Reservoir
San Fernando
Angeles
ANGELES NATIONAL FOREST
Pacoima Reservoir
Big Tujunga Reservoir

Tower Span 49-2 thru 49-3
Tower 46-4
Tower 43-2
Tower 54-2
Tower 57-2
Tower Span 57-1 thru 57-2
Tower Span 41-3 thru 41-4
Tower Span 35-2 thru 35-3
Tower 32-4
Tower Span 33-2 thru 33-3
Tower Span 38-4 thru 39-1
Tower Span 38-1 thru 38-2
Tower 61-2
Tower Span 65-4 thru 66-1
Tower Span 70-4 thru 71-1
Tower 76-5
Tower 77-1

**Proposed Activities**
- Grading
- Tower Raise

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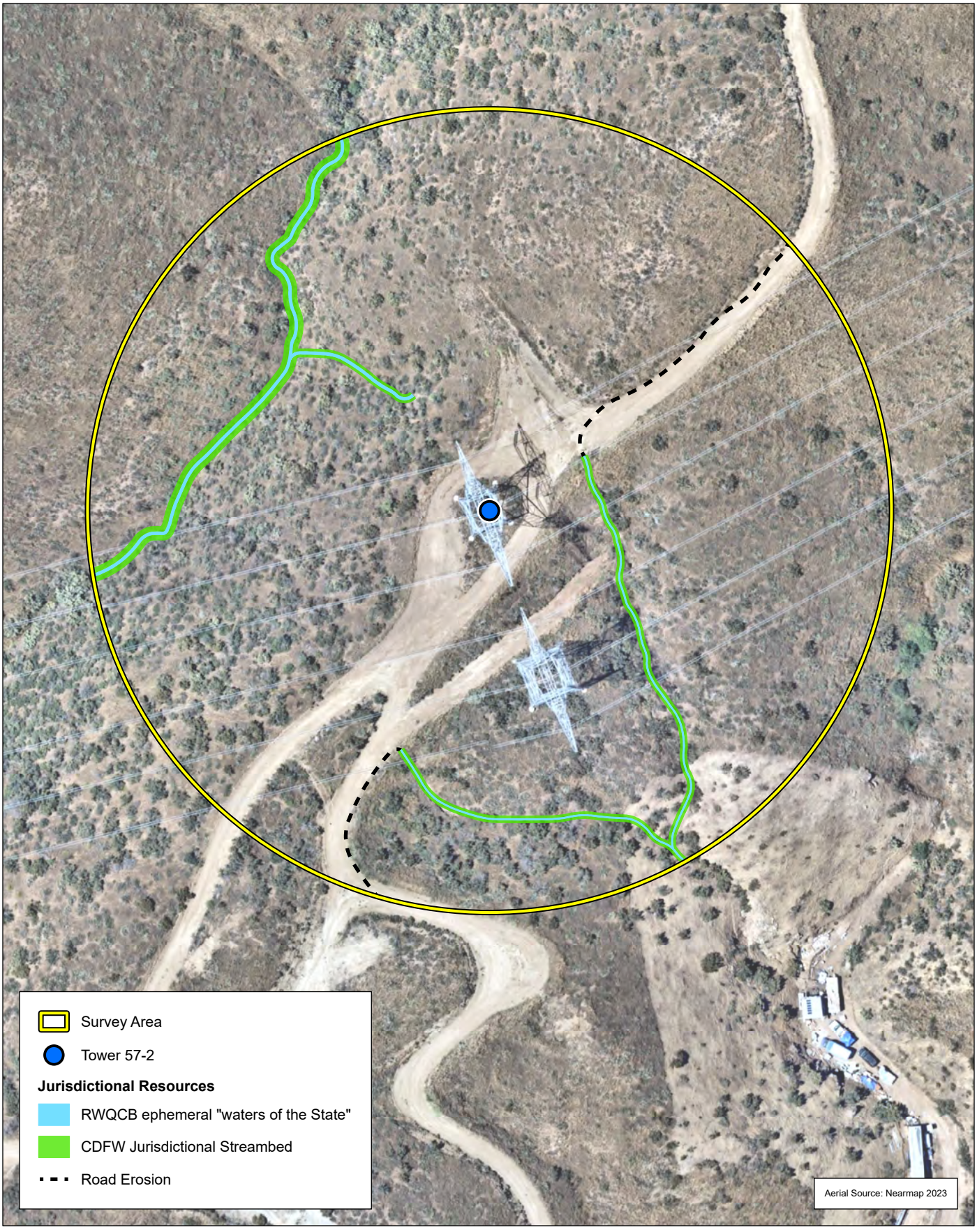
## Regional Location/Local Vicinity

Exhibit 1

*Jurisdictional Delineation Assessment for the Adelanto-Rinaldi Transmission Line Compliance Project*

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# Jurisdictional Resources – Tower 57-2

Exhibit 2

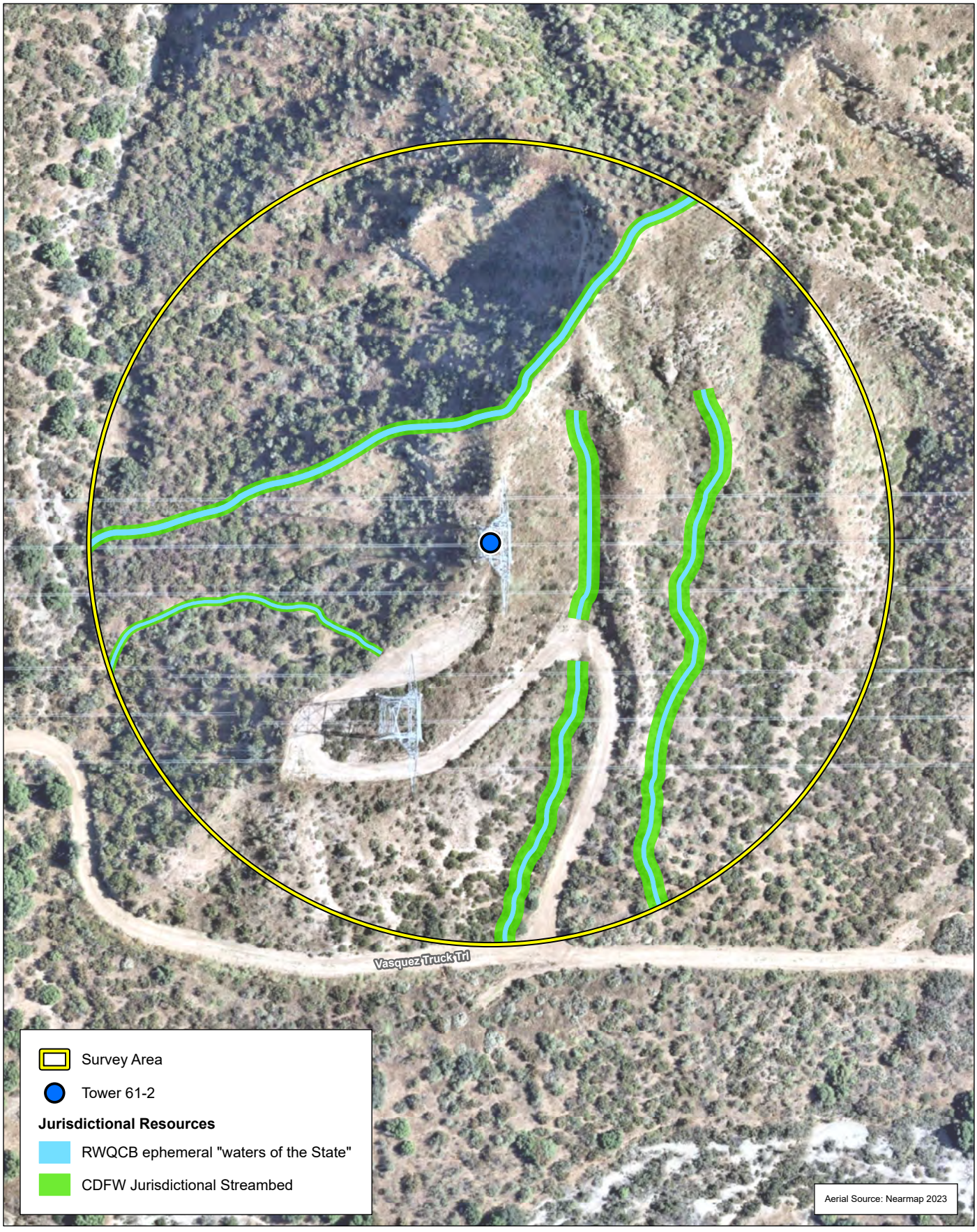
*Jurisdictional Delineation Assessment for the Adelanto-Rinaldi Transmission Line Compliance Project*

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# Jurisdictional Resources – Tower 61-2

Exhibit 3

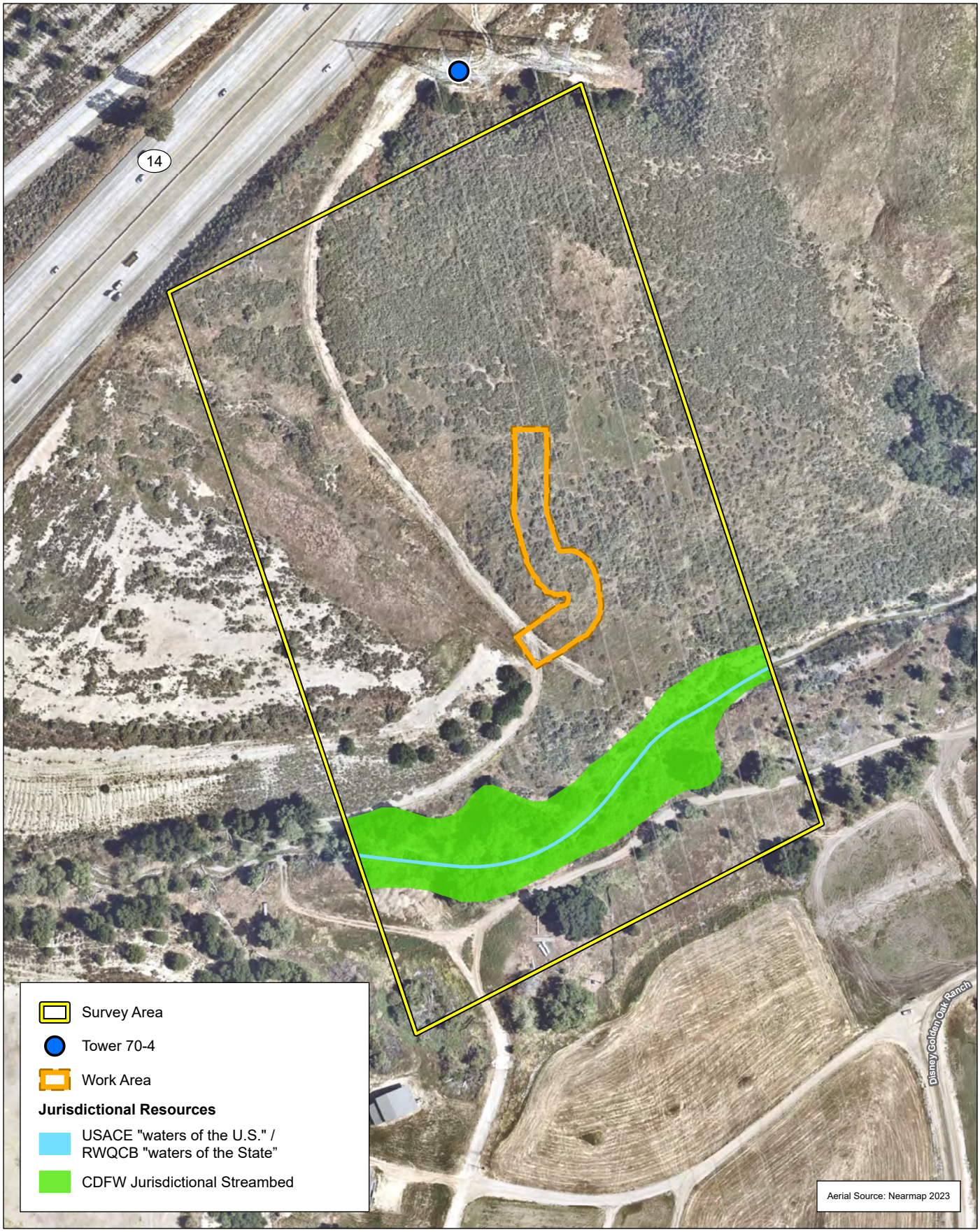
*Jurisdictional Delineation Assessment for the Adelanto-Rinaldi Transmission Line Compliance Project*

N W E S

0 50 100 Feet

PSOMAS

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# Jurisdictional Resources – Tower Span 70-4 to 71-1

Exhibit 4

*Jurisdictional Delineation Assessment for the Adelanto-Rinaldi Transmission Line Compliance Project*

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PSOMAS

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**ATTACHMENT A**

**SITE PHOTOS**



**Photo 1.** Overview of conditions at Tower 32-4. January 30, 2024.



**Photo 2.** Overview of conditions at Tower Span 33-2 to 33-3. November 16, 2022.

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**Photo 3.** Overview of conditions at Tower Span 35-2 to 35-3. November 16, 2022.



**Photo 4.** Overview of conditions at Tower Span 38-1 to 38-2. November 16, 2022.

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**Photo 5.** Overview of conditions at Tower Span 38-4 to 39-1. November 16, 2022.



**Photo 6.** Overview of conditions at Tower Span 41-3 to 41-4. November 16, 2022.



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**Photo 7.** Overview of conditions at Tower 43-2. January 30, 2024.



**Photo 8.** Overview of conditions at Tower 46-4. January 30, 2024.

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**Photo 9.** Overview of conditions at Tower Span 49-2 to 49-3. November 16, 2022.



**Photo 10.** Overview of conditions at Tower 54-2. January 30, 2024.



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**Photo 11.** Overview of conditions at Tower Span 57-1 to 57-2. November 16, 2022.



**Photo 12.** Overview of conditions at Tower 57-2. January 30, 2024.

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**Photo 13.** Overview of conditions at Tower 61-2. January 30, 2024.



**Photo 14.** Overview of conditions at Tower Span 65-4 to 66-1. November 16, 2022.



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**Photo 15.** Overview of conditions at Tower Span 70-4 to 71-1. November 16, 2022.



**Photo 16.** Overview of conditions at Tower 76-5. January 30, 2024.

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**Photo 17.** Overview of conditions at Tower 77-1. January 30, 2024.

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# Appendix D
Cultural Resources Report

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July 12, 2024 14553.09

Jazmin Martin
Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, California 90012

**Subject:** **Cultural Resources Inventory Report for the Adelanto – Rinaldi Line 1 Upgrade Project, Los Angeles County, California**

Dear Jazmin Martin:

This letter report documents the cultural resources inventory efforts conducted by Dudek in support of the Adelanto – Rinaldi Line 1 Upgrade Project (Project or proposed Project), located in Los Angeles County, California. The Project involves an ampacity upgrade and a series of ground-to-line clearance activities along the existing 500 kilovolt (kV) overhead Adelanto-Rinaldi transmission line (ADL-RIN L1). This study included a records search, an archival information review, correspondence with the Native American Heritage Commission (NAHC), a cultural resources pedestrian survey of the Project site, and the preparation of this cultural resources technical report. The Los Angeles Department of Water and Power (LADWP) is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA).

# Project Location

The proposed Project site includes multiple locations (work areas) along the existing 500 kV overhead ADL-RIN L1 transmission line, extending between the San Fernando Valley of the City of Los Angeles and the southernmost extent of Antelope Valley (Figure 1, Project Location Map). The proposed Project occurs within the northern half of Los Angeles County, and generally straddles the Transverse Ranges through the Santa Clara River Valley, Soledad Canyon, and Sierra Pelona Mountains. The southwestern most work areas (Towers 76-5 and 77-1) are located within the San Fernando Valley in undulating hilly terrain around the basin of LADWP's Van Norman Complex (Figure 2, Project Site Map).

# Project Description

The proposed Project involves an ampacity upgrade and a series of ground-to-line clearance activities along the ADL-RIN L1 transmission line. Work activities include ground clearance grading, tower raises, and mitigation of a ground wire under crossing in order to be compliant with transmission line safety and reliability standards. Grading activities and tower raises are proposed at 17 work areas (nine underline grading activities and eight tower raises). The Project also entails improvements to portions of existing access roads slated for site access uses, equipment staging and storage, and the distribution of excavated soils. Table 1 details the scope of work at each work area as part of the proposed Project.

**Table 1. Project Scope of Work**

| Tower No. or Tower Spans | Activity | Max. Width (ft.) | Max. Length (ft.) | Max. Depth (ft.) | Area (sq. ft.) | Access Road Improvement Required? |
|---|---|---|---|---|---|---|
| 32-4 | Tower Raise (10 Feet) | 50-foot radius | | N/A | 7,854 | No |
| 33-2 to 33-3 | Ground Clearance | 16.1 | 19.4 | 2 | 435.6 | No |
| 35-2 to 35-3 | Ground Clearance | 101.6 | 126.6 | 3.0 | 13,068 | Yes |
| 38-1 to 38-2 | Ground Clearance | 27.7 | 82.4 | 5 | 2,178 | Yes |
| 38-4 to 39-1 | Ground Clearance | 21.4 | 40.7 | 1 | 871.2 | Yes |
| 41-3 to 41-4 | Ground Clearance | 24.4 | 43.4 | 1 | 871.2 | Yes |
| 43-2 | Tower Raise (10 feet) | 50-foot radius | | N/A | 7,854 | No |
| 46-4 | Tower Raise (10 feet) | 50-foot radius | | N/A | 7,854 | No |
| 49-2 to 49-3 | Ground Clearance | 48.6 | 39.2 | 1 | 1,742.4 | Yes |
| 54-2 | Tower Raise (10 feet) | 50-foot radius | | N/A | 7,854 | No |
| 57-1 to 57-2 | Ground Clearance | 26.7 | 30.7 | 2 | 871.2 | Yes |
| 57-2 | Tower Raise (10 feet) | 50-foot radius | | N/A | 7,854 | No |
| 61-2 | Tower Raise (20 feet) | 50-foot radius | | N/A | 7,854 | No |
| 65-4 to 66-1 | Ground Clearance | 42.3 | 58.6 | 3 | 2,613.6 | Yes |
| 70-4 to 71-1 | Ground Clearance | 213.7 | 432.9 | 1 | 33,976.8 | Yes |
| 76-5 | Tower Raise (10 feet) | 50-foot radius | | N/A | 7,854 | No |
| 77-1 | Ground Clearance and Tower Raise (10 feet) | 235.8 | 329.1 | N/A | 77,536.8 | Yes |

# Regulatory Context

The Project is subject to compliance with CEQA and local regulatory conditions. No federal nexus is presently anticipated.

Under the provisions of CEQA, including the CEQA Statutes (PRC Sections 21083.2 and 21084.1), the CEQA Guidelines (14 CCR 15064.5), and California Public Resources Code (PRC) Section 5024.1 (14 CCR 4850 et seq.), properties expected to be directly or indirectly affected by a proposed project must be evaluated for California Register of Historical Resources (CRHR) eligibility (PRC Section 5024.1).

The purpose of the CRHR is to maintain listings of the state's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from material impairment and substantial adverse change. The term historical resources includes a resource listed in or determined to be eligible for listing in the CRHR; a resource included in a local register of historical resources; and any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (14 CCR 15064.5[a]). The criteria for listing properties in the CRHR were developed in accordance with previously established criteria developed for listing in the National Register of Historic Places (NRHP). The California Office of Historic Preservation regards "any physical evidence of human activities over 45 years old" as meriting recordation and evaluation (OHP 1995:2).

# State

## California Environmental Quality Act

As described further, the following CEQA statutes (PRC Section 21000 et seq.) and CEQA Guidelines (14 CCR 15000 et seq.) are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource"; it also defines the circumstances when a project would materially impair the significance of a historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Section 21083.2(i) discusses provisions for archaeological sites inadvertently discovered during construction.
- PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). If a site is listed or eligible for listing in the CRHR, or included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project does any of the following:

(1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its

identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA (CEQA Guidelines Section 15064.5(b)(2)).

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2(a)–(c)).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2(g)).

Impacts on nonunique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a nonunique archaeological resource qualifies as a TCR (PRC Sections 21074(c) and 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed in California Health and Safety Code Section 7050.5 and PRC Section 5097.98, both described later in this section.

### The California Register of Historical Resources (CRHR)

A cultural resource is considered "historically significant" under CEQA if the resource meets one or more of the criteria for listing on the CRHR. The CRHR was designed to be used by state and local agencies, private groups, and citizens to identify existing cultural resources within the state and to indicate which of those resources should be protected, to the extent prudent and feasible, from substantial adverse change. The following criteria have been established for the CRHR. A resource is considered significant if it:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. is associated with the lives of persons important in our past;
3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. has yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting one or more of the above criteria, historical resources eligible for listing in the CRHR must retain enough of their historic character or appearance to be able to convey the reasons for their significance. Such integrity is evaluated in regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

Under CEQA, if an archeological site is not a historical resource but meets the definition of a "unique archeological resource" as defined in PRC Section 21083.2, then it should be treated in accordance with the provisions of that section. A unique archaeological resource is defined as follows:

- An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
    - Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
    - Has a special and particular quality, such as being the oldest of its type or the best available example of its type
    - Is directly associated with a scientifically recognized important prehistoric or historic event or person

Resources that neither meet any of these criteria for listing in the CRHR nor qualify as a "unique archaeological resource" under CEQA (PRC Section 21083.2) are viewed as not significant. Under CEQA, "A non-unique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects" (PRC Section 21083.2[h]).

Impacts that adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. Impacts to historical resources from a proposed project are thus considered significant if the project (1) physically destroys or damages all or part of a resource; (2) changes the character of the use of the resource or physical feature within the setting of the resource, which contributes to its significance; or (3) introduces visual, atmospheric, or audible elements that diminish the integrity of significant features of the resource.

### California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98.

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (California Health and Safety Code Section 7050.5[b]). If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must

contact the NAHC within 24 hours (California Health and Safety Code Section 7050.5[c]). In accordance with California Public Resources Code Section 5097.98(a), the NAHC will notify the Most Likely Descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. Within 48 hours of being granted access to the site, the MLD may recommend means of treatment or disposition, with appropriate dignity, of the human remains and associated grave goods.

# Local – Los Angeles County

## Los Angeles County 2035 General Plan

Chapter 9, the Conservation and Natural Resources Element of the Los Angeles County 2035 General Plan, Section VIII. Historic, Cultural, and Paleontological Resources provides the following goals and policies potentially relevant to the Project (County of Los Angeles 2015): The following summarizes Goals and Policies specific to cultural and historical resources:

**Goal C/NR 14** Protected historic, cultural, and paleontological resources.
Topic: Historic, Cultural, and Paleontological Resource Protection

**Policy C/NR 14.1** Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.

**Policy C/NR 14.2** Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources.

**Policy C/NR 14.3** Support the preservation and rehabilitation of historic buildings.

**Policy C/NR 14.4** Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).

**Policy C/NR 14.5** Promote public awareness of historic, cultural, and paleontological resources.

**Policy C/NR 14.6** Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

## Los Angeles County Historic Preservation Ordinance

On September 1, 2015, the Board of Supervisors recognized the importance of preserving the County's distinctive architectural and cultural history by adopting the Historic Preservation Ordinance ("HPO") that:

- Specifies criteria and procedures for the designation of landmarks and historic districts.
- Specifies criteria and procedures for reviewing proposed work on designated landmarks or on property within historic districts.
- Establishes penalties for unauthorized work, including demolition, on landmarks or historic district contributors.
- Requires maintenance of landmarks and historic district contributors to prevent deterioration.
- Prohibits work, including demolition, on property nominated but not yet designated as a landmark or historic district.

- Encourages adaptive reuse of landmarks and historic district contributors by providing relief from parking requirements.

- Provides for the enhancement of historic districts by the establishment of development guidelines and standards, and by allowing streetscape improvements that are compatible with the areas historic character.

## Section 22.124.070, Criteria for Designation of Landmarks and Historic Districts.

Included here are the relevant sections of Los Angeles County Code Section 22.124.070, which summarizes applicable criteria for landmark and historic district designation.

A structure, site, object, tree, landscape, or natural land feature may be designated as a landmark if it is 50 years of age or older and satisfies one or more of the following criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of the history of the nation, State, County, or community in which it is located;
2. It is associated with the lives of persons who are significant in the history of the nation, State, County, or community in which it is located;
3. It embodies the distinctive characteristics of a type, architectural style, period, or method of construction, or represents the work of an architect, designer, engineer, or builder whose work is of significance to the nation, State, County, or community in which it is located; or possesses artistic values of significance to the nation, State, County, or community in which it is located;
4. It has yielded, or may be likely to yield, significant and important information regarding the prehistory or history of the nation, State, County, or community in which it is located;
5. It is listed, or has been formally determined eligible by the United States National Park Service for listing, in the National Register of Historic Places, or is listed, or has been formally determined eligible by the State Historical Resources Commission for listing, on the California Register of Historical Resources;
6. If it is a tree, it is one of the largest or oldest trees of the species located in the County; or
7. If it is a tree, landscape, or other natural land feature, it has historical significance due to an association with a historic event, person, site, street, or structure, or because it is a defining or significant outstanding feature of a neighborhood.

The County provides for the protection and preservation of Archaeological/Paleontological/Historic Cultural Resources under Zoning Code Section 22.44.1570, Additional Development Standards):

A. Purpose. The intent of these provisions is protect and preserve archaeological, historical, and paleontological resources from destruction, and avoid impacts to such resources where feasible. Where avoidance is not feasible, impacts to resources shall be minimized to the maximum extent feasible.

B. Definitions. The following definitions shall only apply to this section. This portion of the County's approach to the protection and preservation of Archaeological/Paleontological/Historic Cultural Resources under Zoning Code Section 22.44.1570 includes a glossary of applicable terms. Please refer to Zoning Code Section 22.44.1570 for complete language.

C. Applicability. A Cultural Resource Review pursuant to this section shall be required for all projects prior to the issuance of a planning approval, coastal development permit, geological/geotechnical exploratory excavation permit, sewer permit, building permit, grading permit, or prior to the commencement of government-initiated or funded works except those projects necessary for emergency purposes.

D. Cultural Resource Review. This portion of the County's approach to the protection and preservation of Archaeological/Paleontological/Historic Cultural Resources under Zoning Code Section 22.44.1570 includes a comprehensive description of how cultural resource reviews should be conducted. Please refer to Zoning Code Section 22.44.1570 for complete language.

E. Cataloging and Filing of Information. This portion of the County's approach to the protection and preservation of Archaeological/Paleontological/Historic Cultural Resources under Zoning Code Section 22.44.1570 includes a comprehensive protocol for the curation and filing of data and findings. Please refer to Zoning Code Section 22.44.1570 for complete language.

F. Archaeological Discoveries. Any person who discovers important cultural resources during the course of construction for a project shall notify the Director of the discovery. Once important cultural resources are discovered, no further excavation shall be permitted without approval of the Director.

# Environmental Setting

The southwestern most work areas (Towers 76-5 and 77-1) are located within the San Fernando Valley in undulating hilly terrain around the basin of LADWP's Van Norman Complex. The work areas within the Santa Clara River Valley (Tower Spans 70-4 to 71-1, 65-4 to 66-1, and Tower 61-2) are characterized by moderately steep slopes in hilly terrain. The work areas within Soledad Canyon and the Sierra Pelona Mountains (Towers 57-2, 46-4, 43-2, and 54-2 and Tower Spans 57-1 to 57-2, 49-2 to 49-3, 41-3 to 41-4, 38-4 to 39-1, and 38-1 to 38-2) are located within moderate to very steep slopes set in mountainous terrain. In the portion of the project that occurs along the southern extent of Antelope Valley (Tower Spans 35-2 to 35-3 and 33-2 to 33-3, and Tower 32-4), the terrain is generally gently sloping with a few scattered hills. Elevations within the proposed Project site range from approximately 1,155 above mean sea level (amsl) at the Van Norman Complex to approximately 4,270 amsl in the Sierra Pelona portion of the transmission line.

Water sources in the general vicinity of the proposed Project site include the Little Rock Ditch, approximately 0.15 miles north of Tower Span 33-2 to 33-3, the Palmdale Ditch, approximately 0.3 miles east of Tower 35-3, Anaverde Creek, approximately 0.6 miles north of Tower 46-4, and the Van Norman Reservoir, less than 0.15 miles east of Towers 77-1 and 76-5.

## Review of Geomorphological Context

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2024a), soils within the proposed Project site consist of the following soil types: Cajon loamy sand, 2 to 9 percent slopes (Tower 32-4), Ramona sandy loam, 9 to 30 percent slopes, eroded (Tower Span 33-2 to 33-3), Ramona gravelly sandy loam, 2 to 9 percent slopes (Tower Span 35-2 to 35-3), Las Posas-Toomes rocky loams, 30 to 50 percent slopes (Tower Span 38-1 to 38-2), Las Posas loam, 9 to 30 percent slopes (Tower Span 38-4 to 39-1), Vista coarse sandy loam, 30 to

50 percent slopes (Tower Span 41-3 to 41-4 and Tower 43-2), Anaverde rocky loam, 30 to 50 percent slopes (Tower 46-4), Anaverde loam, 15 to 30 percent slopes (Tower Span 49-2 o 49-3), Amargosa rocky coarse sandy loam, 9 to 55 percent slopes, eroded (Towers 54-2 and 57-2, and Tower Span 57-1 to 57-2), Castaic-Balcom silty clay loams, 30 to 50 percent slopes, eroded (Tower 61-2), Saugus loam, 30 to 50 percent slopes, eroded (Tower Span 65-4 to 66-1), Ojai loam, 2 to 9 percent slopes, and Saugus loam, 30 to 50 percent slopes, eroded (Tower Span 70-4 to 71-1), and Xerorthents, 0 to 30 percent slopes (Towers 76-5 and 77-1). The available official USDA soil descriptions for soil types identified within the proposed Project site are provided below.

- **Cajon Series** (2024b): The Cajon series is characterized as very deep, somewhat excessively drained soils that formed in sandy alluvium from dominantly granitic rocks. This soils series consists of slopes ranging from 0 to 15 percent and is found on alluvial fans, fan aprons, fan skirts, inset fans, and river terraces.
- **Ramon Series** (2024c): The Ramon series is characterized as brown, sandy loam and fine sandy loam A horizons, reddish brown and yellowish, red sandy clay loam B horizons, and strong brown, fine sandy loam C horizons.
- **Las Posas Series** (2024d): The Las Posas series is characterized as moderately deep, well drained soils that formed in material weathered from basic igneous rocks. This soils series consists of slopes ranging from 5 to 50 percent and is found on mountainous uplands.
- **Toomes Series** (2024e): The Toomes series is characterized as very shallow and shallow, well to somewhat excessively drained soils formed in residuum weathered from tuff breccia, basalt, andesite, or latite. This soils series consists of slopes ranging from 2 to 75 percent and is found on ridges and plateaus.
- **Vista Series** (2024f): The Vista series is characterized as moderately deep, well drained soils that formed in material weathered from decomposed granitic rocks. This soils series consists of slopes ranging from 2 to 85 percent and is found on hills and mountainous uplands.
- **Anaverde Series** (2024g): The Anaverde series is characterized as deep, well drained soils that formed in material weathered from metamorphic rock. This soils series consists of slopes ranging from 15 to 75 percent and is found on mountainous uplands.
- **Castaic Series** (2024h): The Castaic series is characterized as well drained, moderately slowly permeable soils that formed in residuum weathered from shale, sandstone, and mudstone. This soils series have brown, silty clay loam A horizons, yellowish brown, silty clay loam B horizons, and light yellowish brown, calcareous shaly clay loam C horizons over shale at a depth of 36 inches.
- **Balcom Series** (2024i): The Balcom series is characterized as moderately deep, well drained soils that formed in material that weathered from soft, calcareous shale and sandstone. This soils series consists of slopes ranging from 5 to 75 percent and is found on hills.
- **Saugus Series** (2024j): The Saugus series is characterized as deep, well drained soils that formed from weakly consolidated sediments. This soils series consists of slopes ranging from 9 to 50 percent and is found on dissected terraces and foothills.
- **Ojai Series** (2024k): This Ojai series is characterized as very deep, well drained soils that formed in alluvium derived from material weathering from mostly sandstone or related sedimentary rocks. This soils series consists of slopes ranging from 0 to 30 percent and is found on alluvial fans and terraces.

# Background Research

## Records Search

On December 13, 2022, October 17, 2023, and March 20, 2024, Dudek archaeologists conducted in-person records searches of the California Historical Resources Information System (CHRIS) database housed at the South Central Coastal Information Center (SCCIC), located on the campus of the California State University, Fullerton, in Fullerton, California. The records search included a review of previously recorded cultural resources and investigations within a 0.5-mile radius of the proposed Project site. The records search also included a review of the NRHP, the CRHR, the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list. Confidential Appendix A provides the complete records search results.

### Previously Conducted Cultural Resource Studies

The SCCIC records search indicates that sixty-eight (68) previous cultural resources studies have been conducted within 0.5-miles of the proposed Project site between 1973 and 2016. Of these previous studies, eight (8) (LA-00796, -01114, -01454, -02454, -02590, -11641, -11818, and -12466) overlap the proposed Project site. Table 2, below, details all sixty-eight (68) previous cultural resources studies followed by a brief summary of the relevant reports that overlap the proposed Project site.

**Table 2. Previous Technical Studies Within a 0.5-Miles of Project Site**

| SCCIC Report No. | Authors | Year | Title | Proximity to Proposed Project Site |
|---|---|---|---|---|
| LA-00051 | Kelly, Roger E. and Gerald R. Gates | 1974 | Cultural Resources of Los Angeles Reservoir, City of Los Angeles | Outside Tower 76-5 & Tower 77-1 |
| LA-00296 | Greenwood, Roberta S. | 1978 | Tower Location and Access Road Inspection Victorville to Rinaldi 500kv T/l Part Iii | Outside Tower Span 35-2 to 35-3 & Tower 54-2 |
| LA-00614 | Robinson, R. W. | 1979 | Cultural Resources Investigation Re: Tentative Mainor Land Division Map No. 11633 | Outside Tower Span 57-1 to 57-2 & Tower 57-2 |
| LA-00796 | Reponen, Gerald | 1980 | Archaeological Reconnaissance Report: Victorville-Rinaldi 500kv Transmission Line | Overlaps Tower 61-2 |
| LA-00818 | Gates, Gerald R. | 1973 | Archaeological Resources of the Van Norman Reservoir Area a Preliminary Report | Outside Tower 76-5 & Tower 77-1 |
| LA-00835 | King, Chester | 1974 | Archaeological Report Related to the Interpretation of Archaeological Resources Present at Vasquez Rocks County Park | Outside Tower Span 57-1 to 57-2, Tower 57-2, & Tower 54-2 |

## Table 2. Previous Technical Studies Within a 0.5-Miles of Project Site

| SCCIC Report No. | Authors | Year | Title | Proximity to Proposed Project Site |
|---|---|---|---|---|
| LA-00920 | Foster, John M. | 1979 | Assessment of the Impact Upon Archaeological Resources by the Proposed Development of Tentative Parcel Map 12029 | Outside Tower 43-2 |
| LA-00922 | Tartaglia, Louis J. | 1979 | Assessment of the Impact Upon Cultural Resources by the Proposed Development of Tentative Parcel Map 12086, Located at the Intersection of Sierra Highway and Mint Canyon Road, Agua Dulce, California | Outside Tower 54-2 |
| LA-00970 | Robinson, R. W. | 1980 | Cultural Resources Investigation Re: Tentative Tract Map #36385 | Outside Tower Span 57-1 to 57-2 & Tower 57-2 |
| LA-01114 | Toren, George A. | 1976 | Assessment of the Archaeological Impact by the Proposed Development of Tract No. 32615 in Valencia, California | Overlaps Tower Span 65-4 to 66-1 |
| LA-01176 | Singer, Clay A. | 1981 | Cultural Resource Survey and Impact Assessment for Tentative Tract No. 35817 Near Tick Canyon, Canyon Country, Los Angeles County, Ca | Outside Tower Span 57-1 to 57-2 & Tower 57-2 |
| LA-01237 | McIntyre, Michael J. | 1983 | Archaeological Reconnaissance Report: Pacific Crest Trail-Agua Dulce Segment | Outside Tower 54-2 |
| LA-01369 | Rector, Carol H. | 1984 | Cultural Resources Inventory for the 1984 and Part of 1985 California Metropolitan Project Area Public Lands Sale Program | Outside Tower Span 57-1 to 57-2 & Tower 57-2 |
| LA-01454 | Van Horn, David M. | 1985 | An Archaeological Survey of the Pelona Land Ranch Project Area in the County of Los Angeles, California | Overlaps Tower Span 49-2 to 49-3 |
| LA-01466 | Taylor, Thomas T. | 1985 | Tosco Cogeneration Project Transmission Line: Archaeological Survey and Native American Contacts | Outside Tower Span 70-4 to 71-1 |
| LA-01521 | McIntyre, Michael J. | 1985 | Archaeological Reconnaissance Report: Los Angeles DWP T/I Tower and Road Locations | Outside Tower 54-2 & Tower 61-2 |
| LA-01583 | Love, Bruce | 1986 | Archaeological Evaluation of Tentative Tract No. 44327 (sites LAN-761.762,1113) Indian Falls Estates, Chatsworth, Los Angeles County, Ca | Outside Tower Span 38-4 to 39-1 |
| LA-01881 | Padon, Beth and S. Crownover | 1989 | Cultural Resources Assessment Ritter Ranch Los Angeles County | Outside Tower 46-4 |
| LA-01909 | Greenwood, Roberta S. and Michael J. McIntyre | 1981 | Class III Cultural Resource Inventory: Adelanto-Rinaldi 500kv Transmission Line Corridors 1, 2, and 3 Los Angeles Department of Water | Outside Tower 32-4 |
| LA-02170 | Norwood, Richard H. | 1990 | Cultural Resource Survey for Tentative Tract Map No. 49688, 38 Acres in Santa Clarita, California | Outside Tower Span 65-4 to 66-1 |

## Table 2. Previous Technical Studies Within a 0.5-Miles of Project Site

| SCCIC Report No. | Authors | Year | Title | Proximity to Proposed Project Site |
|---|---|---|---|---|
| LA-02199 | Mason, Roger D. and Albert Knight | 1989 | Cultural Resources Survey Report Tentative Tract No. 34038 Agua Dulce, Los Angeles County, California | Outside Tower 54-2 |
| LA-02387 | Padon, Beth | 1991 | Phase II Archaeology at Ritter Ranch Tentative Parcel Map No. 22833 Palmdale, California. | Outside Tower 46-4 & Tower Span 49-2 to 49-3 |
| LA-02402 | Foster, John M. and Robert J. Wlodarski | 1983 | A Burial from the Van Norman Reservoir | Outside Tower 76-5 & Tower 77-1 |
| LA-02426 | White, Robert S. | 1990 | Addendum: an Archaeological Assessment of Toyo West II's Transmission Line Tower Locations Near Palmdale, Los Angeles County | Outside Tower 46-4 |
| LA-02454 | Bissell, Ronald M. and Beth Padon | 1991 | Draft Environmental Impact Report Ritter Ranch Specific Plan (and Associated Annexation Areas) | Overlaps Tower 46-4 & Tower Span 49-2 to 49-3 |
| LA-02590 | Rasson, Judith and Roberta S. Greenwood | 1992 | An Archaeological Reconnaissance of Tract 31803, a 220 Acre Parcel in Plum Canyon, Los Angeles County | Overlaps Tower Span 65-4 to 66-1 |
| LA-02756 | Singer, Clay A., John E. Atwood, and Barbie S. Laney | 1992 | Cultural Resources Survey and Impact Assessment for the Whitney Canyon Ranch Near Newhall, Los Angeles County, California | Outside Tower Span 70-4 to 71-1 |
| LA-02844 | Norwood, Richard H. | 1993 | Phase I Cultural Resource Investigation for Tentative Minor Land Division, Map No. 23759 Agua Dulce, Los Angeles County, California | Outside Tower Span 57-1 to 57-2 & Tower 57-2 |
| LA-02972 | Anonymous | 1994 | Cultural Resources Inventory Elsmere Canyon Proposed Landfill Site Los Angeles County, California | Outside Tower Span 70-4 to 71-1 |
| LA-03587 | King, Chester | 1994 | Prehistoric Native American Cultural Sites in the Santa Monica Mountains | Outside Tower 76-5 & Tower 77-1 |
| LA-03690 | Wlodarski, Robert J. | 1997 | Cultural Resources Evaluation City of Santa Clarita Circulation Element EIR | Outside Tower Span 65-4 to 66-1 |
| LA-03705 | Coleman, R.G., J. Jones, and T.F. King | 1969 | An Archaeological Reconnaissance of Southern California Edison Company's Vincent Transmission, From Bakersfield to Glendale, California | Outside Tower Span 41-3 to 41-4 & Tower 43-2 |
| LA-04008 | Unknown | 1996 | Cultural Resources Investigation Pacific Pipeline Emidio Route | Outside Tower Span 70-4 to 71-1 |

## Table 2. Previous Technical Studies Within a 0.5-Miles of Project Site

| SCCIC Report No. | Authors | Year | Title | Proximity to Proposed Project Site |
|---|---|---|---|---|
| LA-04897 | Milburn, Douglas H. | 1999 | Final Report Archaeological Resource Inventory for Texas - Vasquez Canyons Range Allotment Permit Reissuance, Santa Clara - Mojave Rivers Ranger District, Angeles National Forest, Los Angeles County, California | Outside Tower 61-2 |
| LA-05152 | Duke, Curt | 1999 | Cultural Resource Assessment for AT&T Wireless Service\s Facility Number C586.1, County of Los Angeles, Ca | Outside Tower Span 38-4 to 39-1 |
| LA-06604 | Knight, Albert | 1993 | Rock Art of the Western Mojave Desert: a Reevaluation | Outside Tower 46-4 |
| LA-07500 | Kirkish, Alex | 2002 | Highway Project for Drainage Improvement Project on the Southbound SR-14 Off-ramp at KP 45.7 (pm 28.4) | Outside Tower Span 70-4 to 71-1 |
| LA-08138 | Jordan, Stacey C. | 2007 | Revised Archaeological Survey Report for the SCE Deteriorated Pole Replacement Program for H-frame Poles 1927071e and 1927072e on the Pearblossom-Vincent 220kv Circuit (wo#4753-0301) and Pole 884941e on the Arboretum 16kv Circuit (wo#6027-4800, Ji#6-4869) | Outside Tower Span 38-1 to 38-2 & Tower Span 38-4 to 39-1 |
| LA-08179 | Ahmet, Koral, Mason, Roger, and Bholat, Sara | 2006 | Cultural Resources Survey Report for Antelope Transmission Project: Segments 2 & 3, Los Angeles and Kern Counties | Outside Tower Span 41-3 to 41-4 & Tower 43-2 |
| LA-08227 | Cooley, Theodore and Andrea Craft | 2004 | Archaeological Survey Report SCE Deteriorated Pole Replacement Program Python 16kv Circuit Angeles National Forest, Los Angeles County, California | Outside Tower Span 70-4 to 71-1 |
| LA-08958 | Tsunoda, Koji and Moreno, A. | 2007 | Archaeological Survey Report for Southern California Edison Company Saugus-north Oaks FO Cable Project Los Angeles County, California (wo#8456-0639, Jo#6155) | Outside Tower Span 70-4 to 71-1 |
| LA-08981 | Parker, Mari Pritchard, Natasha Tabares, Sherri Gust, Albert Knight, and Vanessa Mirro | 2004 | Data Recovery, Testing and Monitoring Report and Recommendations for Phase I of the Anaverde Project, Palmdale, California | Outside Tower 46-4 |
| LA-09586 | Bonner, Wayne H. | 2008 | Cultural Resources Records Search and site Visit Results for T-Mobile USA Candidate SV00875A(XR) (Knowlwood Country Club), Granada Hills, Los Angeles County, California | Outside Tower 76-5 & Tower 77-1 |

## Table 2. Previous Technical Studies Within a 0.5-Miles of Project Site

| SCCIC Report No. | Authors | Year | Title | Proximity to Proposed Project Site |
|---|---|---|---|---|
| LA-09705 | Anonymous | 2007 | Cultural Resources Inventory of the Southern California Edison Company Tehachapi Renewable Transmission Project, Kern, Los Angeles and San Bernardino Counties, California. ARR #05-01-01046 | Outside Tower Span 41-3 to 41-4 & Tower 43-2 |
| LA-09729 | Powell, JoBeth and William R. Hildebrandt | 1996 | Spatial Distribution of Prehistoric Archaeological Sites in Littlerock Canyon: Implications for Ecosystem Management | Outside Tower Span 38-1 to 38-2 |
| LA-09730 | Earle, David D., Judy McKeehan, and Roger D. Mason | 1995 | Cultural Resources Overview of the Little Rock Watershed, Angeles National Forest, California. | Outside Tower Span 38-1 to 38-2 |
| LA-10001 | Wlodarski, Robert J. | 2005 | Results of a Records Search and Archaeological Reconnaissance for Cingular Wireless Site 950014220b (atc Project Number 52.25965.0019) (balboa and Goya), City of Granada Hills, County of Los Angeles, California | Outside Tower 76-5 & Tower 77-1 |
| LA-10060 | Gust, Sherri | 2005 | Archaeological and Paleontological Assessment Report and Mitigation Plan for the Quail Valley Project, California | Outside Tower 43-2 |
| LA-10109 | Eisenlauer, Joseph S. | 2005 | Report on a Pedestrian Archaeological Survey of the Lannan Ranch, Aqua Dulce, California September 2004-February 2005. | Outside Tower Span 49-2 to 49-3 |
| LA-10175 | Unknown | 2009 | Confidential Cultural Resources Specialist Report for the Tehachapi Transmission Project | Outside Tower Span 41-3 to 41-4 & Tower 43-2 |
| LA-10396 | Dalu, Chris | 2010 | A Class III Cultural Resources Survey on 0.5 Acres for the Proposed Clausen Unauthorized Trespass Project | Outside Tower Span 57-1 to 57-2 & Tower 57-2 |
| LA-10634 | Bray, Madeleine | 2010 | Preliminary Archaeological Survey Report for 98 linear Miles of the East Branch Extension of the California Aqueduct for the DWR East Branch Enlargement Project, Los Angeles and San Bernadino Counties | Outside Tower Span 33-2 to 33-3 and Tower 32-4 |
| LA-10710 | Bonner, Wayne | 2010 | Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate LAC586 (Vincent), 34500-1/4 Rough Road, Palmdale, Los Angeles County, California | Outside Tower Span 38-4 to 39-1 |
| LA-11026 | Sutton, Mark | 2011 | Totem Pole Ranch | Outside Tower Span 35-2 to 35-3 |

## Table 2. Previous Technical Studies Within a 0.5-Miles of Project Site

| SCCIC Report No. | Authors | Year | Title | Proximity to Proposed Project Site |
|---|---|---|---|---|
| LA-11186 | Wallace, James R. and Sara Dietler | 2011 | Archaeological Monitoring Report and Assessment for the Van Norman Chlorination Stations Nos. 1 & 2, Los Angeles, California | Outside Tower 76-5 & Adjacent Tower 77-1 |
| LA-11606 | Maxon, Patrick | 2011 | Phase I Cultural Resources Assessment, Sylmar Ground Return Replacement Project, Los Angeles County, California | Outside Tower 76-5 & Tower 77-1 |
| LA-11641 | Tran, Christina | 2012 | Disney/ABC Studios at The Ranch, Draft Environmental Impact Report | Overlaps Tower Span 70-4 to 71-1 |
| LA-11818 | Dietler, Sara, Linda Kry, and Heather Gibson | 2012 | Phase I Cultural Resources Assessment for the Van Norman Complex Water Quality Improvement Project City of Los Angeles, California | Overlaps Tower 76-5 & Tower 77-1 |
| LA-11853 | Bicshoff, Wayne | 2011 | Cultural Resources Survey Letter Report for the Variance Request 5-11 Soil Stockpile Areas, Segment 5, Tehachapi Renewable Transmission Project, Los Angeles County, CA | Outside Tower Span 41-3 to 41-4 |
| LA-11855 | Tejada, Barbara | 2011 | Cultural Resources Survey Letter Report for the CT-53 Road-to-Right TEWS, Segment 5, Tehachapi Renewable Transmission Project, Los Angeles County, California | Outside Tower 43-2 |
| LA-11857 | Bischoff, Wayne | 2011 | Cultural Resources Survey Letter Report for the CT54 Spur Road TEWS, Segment 5, Tehachapi Renewable Transmission Project, Los Angeles County, California | Outside Tower 43-2 |
| LA-12466 | Gonzalez, Matthew and Garcia, Kyle | 2010 | Phase I Archaeological and Paleontological Resources Assessment for Disney/ABC Studios at the Ranch, Los Angeles County, California | Overlaps Tower Span 70-4 to 71-1 |
| LA-12527 | Panich, Lee, Cimino, Stephanie, and Holson, John | 2010 | Supplemental Archaeological Survey Report #1, Tehachapi Renewable Transmission Project Segment 5, Los Angeles County, California | Outside Tower Span 41-3 to 41-4 & Tower 43-2 |
| LA-12528 | Schneider, Tsim and Holson, John | 2010 | Supplemental Archaeological Survey Report #2, Tehachapi Renewable Transmission Project Segment 5, Los Angeles County, California | Outside Tower Span 41-3 to 41-4 & Tower 43-2 |
| LA-12691 | Simon, Joseph | 2010 | Class III Inventory/Phase I Archaeological Survey of the Fire Station 128 Alternate Site, Los Angeles County, California | Outside Tower Span 65-4 to 66-1 |
| LA-12815 | Letter, Rachael J. | 2016 | Cultural Resources Report Sierra Canyon Technical Campus Project, City of Santa Clarita Los Angeles County, California | Outside Tower Span 70-4 to 71-1 |

**Table 2. Previous Technical Studies Within a 0.5-Miles of Project Site**

| SCCIC Report No. | Authors | Year | Title | Proximity to Proposed Project Site |
|---|---|---|---|---|
| LA-12841 | Tejada, Barbara | 2012 | Cultural Resources Survey for the Sagebrush Interset Tower Addendum - Towers 235, 236 and 237 H-Frame Structures, Segment 5, Tehachapi Renewable Transmission Project, Los Angeles County, California | Outside Tower 43-2 |
| LA-12946 | Holloway, Charles and Hal Messinger | 2009 | Mitigated Negative Declaration, Los Angeles Aqueduct Filtration Plant Disinfection Contact Tank Project | Outside Tower 76-5 & Tower 77-1 |

## Report LA-00796

*Archaeological Reconnaissance Report: Victorville-Rinaldi 500kv Transmission Line* (Reponen 1980) documents the results of a 1980 archaeological resources inventory undertaken in support of a project that involved the widening, straightening, and constructing of approximately 10-miles of access roads on National Forest lands in conjunction with the construction of the Victorville-Rinaldi 500kv Transmission Line. The report was drafted by Gerald Reponen of the U.S. Forest Service and consisted of an informal archival records search, literature review, and pedestrian survey. The study area overlaps 100 percent with the work area for Tower 61-2. During the pedestrian survey, two historic-era mining resources were recorded, and four additional resources were identified but not formally recorded due to them not meeting the minimum age threshold to be considered a historic-age resource at the time. None of the cultural resources identified in support of this project fall within the records search buffer of the currently proposed Project. Further, no management recommendations were proposed for areas adjacent to Tower 61-2 or the other currently proposed work areas.

## Report LA-01114

*Assessment of the Archaeological Impact by the Proposed Development of Tract No. 32615 in Valencia, California* (Toren 1976), documents the results of a cultural resources assessment consisting of an archival records search, literature review, and pedestrian survey. The study area covered 129 acres and overlaps 100 percent with the work area for Tower Span 65-4 to 66-1 of the currently proposed Project site. The study was conducted to identify and assess any archaeological resources that could be impacted by proposed development. A records search identified one cultural resource within the study area, P-19-000295. Crews were not able to relocate P-19-000295 during the pedestrian survey. No cultural resources were identified as part of this study within the currently proposed Project site.

## Report LA-01454

*An Archaeological Survey of the Pelona Land Ranch Project Area in the County of Los Angeles, California* (Van Horn 1985), documents the results of a cultural resources assessment consisting of an archival records search, and pedestrian survey. The study area overlaps 100 percent with the work area for Tower Span 49-2 to 49-3 of the currently proposed Project site. The study was conducted to determine any impacts the construction of a wind farm would have on cultural resources. During the pedestrian survey, two prehistoric cultural resources were identified

within 0.5-miles of the currently proposed Project site. These resources consist of a light flake scatter consisting of a one obsidian and two metavolcanic flakes, and a bedrock mortar feature. The flakes were collected during the survey. The cultural resources identified are currently recorded as P-19-004305 and P-19-100540, respectively. These resources were evaluated and determined to not be significant, therefore no mitigation measures were recommended for the current proposed Project site, Tower Span 49-2 to 49-3, and the surrounding areas.

## Report LA-02454

*Draft Environmental Impact Report Ritter Ranch Specific Plan and Associated Annexation Areas* (Bissell, Ronald M. and Beth Padon 1991) documents the results of an Environmental Impact Report (EIR) written for a project area covering approximately 11,074-acres. The study area overlaps 100 percent with the work areas for Tower 46-4 & Tower Span 49-2 to 49-3. The EIR addressed previously recorded cultural resources P-19-001638 and P-19-001955, which are documented within the current records search buffer for Tower 46-4. No specific mitigation measures were recommended for these resources, though periodic cultural resources monitoring of mass grading activities was specified in the mitigation measures outlined in the EIR for the project.

## Report LA-02590

*An Archaeological Reconnaissance of Tract 31803, a 220 Acre Parcel in Plum Canyon, Los Angeles County* (Rasson and Greenwood 1992), documents the results of a cultural resources assessment consisting of an archival records search, literature review, and pedestrian survey. The study area covers 220 acres and overlaps 100 percent with the work area for Tower Span 65-4 to 66-1 of the currently proposed Project site. No cultural materials were identified within the currently proposed Project site as a result of the investigation. During the pedestrian survey, five historic-era sites were discovered within 0.5-miles of Tower Span 65-4 to 66-1. These sites are currently recorded as P-19-002040, -002041, -02042, -002043, and -002044 and are briefly summarized in Table 2. The study determined sites P-19-002030, -002041, and -002043 were not significant under CEQA, and recommended further evaluation of sites P-19-002042 and P-19-002044. No mitigation measures or management recommendations were provided within this study for the currently proposed Project site.

## Reports LA-11641 and LA-12466

Report LA-11641 is an Environmental Impact Report written based on Report LA-12466, a Phase I archaeological assessment, which is summarized below.

*Phase I Archaeological and Paleontological Resources Assessment for Disney/ABC Studios at the Ranch, Los Angeles County, California* (Gonzalez and Garcia 2010), documents the results of a Phase I archaeological resources assessment consisting of an archival records search, literature review, a search of the NAHC Sacred Lands File (SLF), Native American outreach, and pedestrian survey. The study area covers 890 acres and overlaps 100 percent with the work area for Tower Span 70-4 to 71-1 of the currently proposed Project site. The study was conducted to assess any impacts the proposed development of a film studio would have on cultural resources. No cultural materials were identified within the currently proposed Project site as a result of this investigation. Recommended mitigation measures included the evaluation of any inadvertent discoveries by a qualified archaeologist.

## Report LA-11818

*Phase I Cultural Resources Assessment for the Van Norman Complex Water Quality Improvement Project City of Los Angeles, California* (Dietler et al. 2012) documents the results of a Phase I archaeological assessment consisting of an archival records search, literature review, a search of the NAHC SLF, Native American outreach, and pedestrian survey. The study area covers 1,340 acres and overlaps 100 percent with the work areas for Towers 76-5 and 77-1 of the currently proposed Project site. The study was conducted to assess the impacts that the proposed facility improvements at the Van Norman Complex would have on cultural resources in the area. The records search identified ten (10) prehistoric cultural resources, one historic-era resource, and one multicomponent resource within the Van Norman Complex, none of which overlap the with currently proposed Project site. During the pedestrian survey, one newly identified resource was recorded within the Van Norman Complex. This is characterized as a a built environment resource identified as the Bull Creek Extension Channel (P-19-190043). Management recommendations for this project included archaeological and Native American monitoring for all ground disturbance.

## Previously Recorded Cultural Resources

The SCCIC records research indicates that twenty-seven (27) cultural resources have been previously recorded within 0.5-miles of the proposed Project site, none of which are located within the proposed Project site, though two (2) previously recorded cultural resources are located adjacent to Tower 77-1. The identified cultural resources within a 0.5-miles of the proposed Project site include seven (7) prehistoric archaeological sites, seven (7) historic-era archaeological sites, two (2) multicomponent sites, two (2) prehistoric isolates, eight (8) built environment resources, and one (1) resource of unknown origin. Table 3 summarizes all previously recorded cultural resources identified within the records research radius, followed by a summary of the archaeological resource located adjacent to Tower 77-1.

**Table 3. Previously Recorded Resources Within 0.5-Miles of Project site**

| Primary Number & Trinomial | Description | Recording Events | NRHP/CRHR Status | Proximity to Proposed Work Areas |
|---|---|---|---|---|
| P-19-000295 (CA-LAN-000295) | Prehistoric site: rockshelter, bullroarer, and a basket fragment | 1963 (Riddell) | Unknown | Outside Tower Span 65-4 to 66-1 |
| P-19-000629 (CA-LAN-000629) | Prehistoric site: isolated burial, shell and steatite beads, projectile points, bone awls, carved antler, and mammal bones | 1972 (G. Gates); 2011 (Sara Dietler, Linda Kry, Tim Harris) | Unknown | Outside Tower 76-5 & 77-1 |
| P-19-000644 (CA-LAN-000644) | Prehistoric site: metates, debitage, and cores | 1974 (Kelly, Gates, Bente, McIntyre) | Unknown | Outside Tower 76-5 & 77-1 |
| P-19-001534 (CA-LAN-001534H) | Built environment: water conveyance system "Palmdale Ditch" | 1989 (Bruce Love); 2008 (Stringer-Bowsher, Sarah and Linda Akyuz); 2009 (Anderson, Katherine) | Recommended Eligible for NRHP | Outside Tower Span 35-2 to 35-3 |

## Table 3. Previously Recorded Resources Within 0.5-Miles of Project site

| Primary Number & Trinomial | Description | Recording Events | NRHP/CRHR Status | Proximity to Proposed Work Areas |
|---|---|---|---|---|
| P-19-001638 (CA-LAN-001638H) | Historic site: cement foundation and trash scatter | 1989 (C.S. Crownover, C. Hopf, J. Marmor, S. Lillard) | Unknown | Outside Tower 46-4 |
| P-19-001955 (CA-LAN-001955H) | Historic site: foundation with a fireplace and household debris | 1990 (B. Holz, D. DePerrot, B. Padon, J. Marmor) | Unknown | Outside Tower 46-4 |
| P-19-002040 (CA-LAN-002040H) | Historic site: trash deposit | 1992 (Judith Rasson, Lisa LeCount) | Unknown | Outside Tower Span 65-4 to 66-1 |
| P-19-002041 (CA-LAN-002041H) | Historic site: domestic trash scatter | 1992 (Judith Rasson, Lisa LeCount) | Unknown | Outside Tower Span 65-4 to 66-1 |
| P-19-002042 (CA-LAN-002042H) | Historic site: remains of a dwelling and associated domestic trash deposits | 1992 (Judth Rasson, Lisa LeCount) | Unknown | Outside Tower Span 65-4 to 66-1 |
| P-19-002043 (CA-LAN-002043H) | Built environment: concrete slabs and footings | 1992 (Judith Rasson, Lisa LeCount) | Unknown | Outside Tower Span 65-4 to 66-1 |
| P-19-002044 (CA-LAN-002044H) | Historic site: domestic trash scatter | 1992 (Judith Rasson, Lisa LeCount) | Unknown | Outside Tower Span 65-4 to 66-1 |
| P-19-002898 (CA-LAN-002898H) | Built environment: segments of previous alignment of Serria Highway | 2000 (N. Peterson, B. Barnes);<br>2007 (Koji Tsunoda) | Recommended not eligible for NRHP | Outside Tower Span 70-4 to 71-1 |
| P-19-003392 (CA-LAN-003392) | Prehistoric site: two tested cobbles and four flakes | 2010 (A. Travis, J. Sprague, M. Walton, M. Seagar);<br>2010 (A. Travis, J. Sprague, M. Walton, M. Seagar, R. Ottenhoff);<br>2011 (B. Tejada) | Unknown | Outside Tower Span 41-3 to 41-4 |
| P-19-003513 (CA-LAN-003513/H) | Multicomponent site: historic trash scatter and a prehistoric isolate, core | 2010 (M. Seger, M. Walton) | Unknown | Outside Tower 43-2 |
| P-19-004154 (CA-LAN-004154H) | Built environment: East Branch the California Aqueduct | 2009 (Katherine Anderson);<br>2011 (N. Lawson, M. Kaye);<br>2011 (Patricia Ambacher);<br>2013 (M. Strauss and M. Bray);<br>2015 (Josh Smallwood);<br>2017 (A. Hill) | Recommended eligible for NRHP | Outside Tower 32-4 & Tower Span 33-2 to 33-3 |

## Table 3. Previously Recorded Resources Within 0.5-Miles of Project site

| Primary Number & Trinomial | Description | Recording Events | NRHP/CRHR Status | Proximity to Proposed Work Areas |
|---|---|---|---|---|
| P-19-004226 (CA-LAN-004226) | Prehistoric site: two pestles, one bowl fragment, one metate basin, one tested cobble, debitage, one hammerstone, and one groundstone palette with ochre residue. | 2009 (Frank Humphries) | Unknown | Outside Tower 76-5; **Adjacent Tower 77-1** |
| P-19-004305 (CA-LAN-004305) | Prehistoric site: lithic scatter | 1985 (Van Horn and Murray) | Unknown | Outside Tower Span 49-2 to 49-3 |
| P-19-004721 (CA-LAN-004721H) | Built environment: remnants of a farmhouse and associated landscaping | 2014 (Michael Dice) | Unknown | Outside Tower Span 70-4 to 71-1 |
| P-19-100003 | Prehistoric isolate: primary flake | 1978 (A. G. Toren) | Unknown | Outside Tower Span 35-2 to 35-3 |
| P-19-100365 | Unknown origin: shallow rock-lined pit | 1978 (A.G. Toren) | Unknown | Outside Tower 54-2 |
| P-19-100540 | Prehistoric site: six isolated bedrock mortars | 1984 (J.R. Murray, Sparky White) | Unknown | Outside Tower Span 49-2 to 49-3 |
| P-19-100993 | Prehistoric isolate: rock cairn | 1990 (B. Padon, B. Holtz, B. Leonard, C. Lipo, L. Barrett) | Unknown | Outside Tower Span 49-2 to 49-3 |
| P-19-175538 | Multicomponent site: Van Norman Reservoir Archaeological District | 1974 (G. Gates & Dr A Gilman) | Nominated for NRHP | Outside Tower 76-5 & Tower 77-1 |
| P-19-186535 | Historic site: Angeles National Forest | 1979 (J. Arbuckle) | Unknown | Outside Tower Span 70-4 to 71-1 |
| P-19-186881 | Built environment: Placerita Canyon Road Culverts | 2004 (T. Cooley & A. Craft) | Unknown | Outside Tower Span 70-4 to 71-1 |
| P-19-188544 | Built environment: residential building and shed | 2010 (C. Dalu) | Unknown | Outside Tower 57-2 & Tower Span 57-1 to 57-2 |
| P-19-190043 | Built environment: Bull Creek Extension Channel | 2011 (Sara Dietler, Linda Kry, Tim Harris) | Recommended ineligible for NRHP | Outside Tower 76-5; **Adjacent Tower 77-1** |

### P-19-004226 (CA-LAN-004226)

P-19-004226 is a prehistoric archaeological resource measuring 196 meters by 157 meters (643 feet by 515 feet) and is located less than 50 meters (164 feet) north of Tower 77-1. P-19-004226 was formally recorded in 2009, by Frank Humphries who described the site as a collection of nine (9) artifacts. These include two (2) pestles, one (1) granitic bowl fragment, one (1) granitic hammerstone, one (1) chalcedony core, one (1) quartzite metate basin, one (1) jasper tested cobble, one (1) chalcedony angular waste, and one (1) granitic groundstone palette with ochre residue that were all collected during construction monitoring. All artifacts were noted as being recovered from a disturbed context, within backfill or within imported fill soils. P-19-004226 has not been evaluated for listing on the CRHR or NRHP (P-19-004226 2009).

### P-19-1900043

P-19-190043 is an historic-era built environment resource characterized as a concrete-lined stormwater channel, given the name Bull Creek Extension Channel, located in LADWP's Van Norman Complex. P-19-190043 was first recorded in 2011 by Sara Dietler, Linda Kry, and Tim Harris in support of a cultural resources inventory for the Van Norman Complex Water Quality Improvement Project. The segment recorded in 2011 spans 3.1 miles along a north to south axis and was evaluated and ultimately recommended ineligible for the CRHR and NRHP. This resource is located approximately 15 meters (50 feet) to the southwest of Tower 77-1 (P-19-190043 2011).

## Review of Historical Topographical Maps and Aerial Photographs

Dudek consulted historical topographic maps and aerial photographs through the Nationwide Environmental Title Research, LLC (NETR) to better understand any natural or human-made changes to the proposed Project site and surrounding areas over time. Topographic maps depict elevation of the study area as well as the areas surrounding it and illustrate the location of roads and some buildings. Although topographic maps are not comprehensive, they are another tool in determining whether a study area has been disturbed and at times, to what approximate depth. A review of available topographic maps included maps dated from 1900 to 2022 (NETR 2024a). Through careful comparative review of historical aerials, changes to the landscape of a study area may be revealed. Disturbances to the study area are specifically important as it helps determine if soils within the study area are capable of sustaining intact archaeological deposits. Additionally, historical aerials have the potential to reveal whether a study area was subjected to alluvial deposits by way of flooding, debris flows or mudslides, as well as placement of artificial or foreign fill soils that may have buried intact archaeological deposits. A review of historical aerial photographs included photographs dated from 1947 to 2020 (NETR 2024b).

Dudek's review of topographic maps and historical aerials show that although sections of the ADL-RIN L1 transmission line were constructed prior to the 1950's, the portions of the transmission line that overlap and are contained within the proposed Project site were not present as depicted in the historic aerials until the 1980s. Due to the quality of some images, in some cases, the transmission line was not visible until the 1990's; however ground disturbances such as graded roads, and vegetation clearing where the transmission line towers were placed can be seen in the historic aerials from the 1980s. Prior to the construction of the ADL-RIN L1 transmission line, the proposed Project site was largely undeveloped. Since the portions of the ADL-RIN L1 transmission line that overlap and are contained within the Project site are less than 45 years old, this built environment feature does not meet the minimum age threshold to be considered a historical resource under CEQA.

## Built Environment Review

Preliminary desktop research indicates that portions of the Project site are located within land considered part of the Golden Oak Ranch property (19802 Placerita Canyon Rd, Newhall, CA 91321) which has not been evaluated for significance but may be eligible for consideration as a CEQA historical resource. The proposed Project is however limited to alterations and upgrades to one Tower Span within this area: 70-4 to 71-1. These towers are not yet 45 years of age and do not rise to the level of consideration as potential CEQA historical resources. In consideration of the proposed ground clearance and roadway improvements being limited to areas directly adjacent to the Towers and Tower Span, and the fact that these Towers would most likely not be considered contributing elements of the Golden Oak Ranch property even if it was found to meet historical significance eligibility requirements, Dudek concludes that there are no potential CEQA impacts that need to be considered that would require the evaluation of the Golden Oak Ranch property. As such, Dudek concludes that no built environment buildings or structures requiring identification or evaluation under CEQA will be impacted by the proposed Project.

## Review of Geotechnical Reports

Initial Geotechnical site assessments were conducted for Towers 43-2, 46-4, 54-2, 57-2, 61-2, 76-5, and 77-1 (Larios et al. 2023a, Larios et al. 2023b, Larios et al. 2023c, Larios et al. 2023d, Larios et al. 2023e, Larios et al. 2023f, Larios et al. 2023g). The geotechnical investigations utilized Multi-channel Analysis of Surface Waves (MASW), Refraction Microtremor (ReMi), and seismic refraction techniques. These measurements were conducted up to a depth of approximately 50 feet below the ground surface. A summary of the subsurface conditions of each tower is described in Table 4 below.

**Table 4. Summary of Subsurface Conditions for Tower Locations**

| Tower No. | Subsurface Conditions |
|---|---|
| 43-2 | 1-4 feet of colluvium over Precambrian gneiss |
| 46-4 | Less than 1 foot of colluvium over Late Cretaceous to Early Tertiary Pelona Schist |
| 54-2 | 5 feet of colluvium over Precambrian gneiss |
| 57-2 | Precambrian age gneiss |
| 61-2 | 1 foot of artificial fill over sedimentary bedrock units of the middle Miocene age Mint Canyon formation |
| 76-5 | Dam embankment fills over alluvium and Pliocene, over alluvium and Pliocene-Pleistocene Age Saugus Formation |
| 77-1 | 1 foot of artificial fill over Pliocene-Pleistocene Age Saugus Formation |

## Native American Heritage Commission Sacred Lands File Search

A search of the NAHC SLF was conducted by Cultural Resources Analyst Andrew Green on March 1, 2024, to determine the presence of any reported Native American cultural resources within 0.5-miles of the Project site as listed in the NAHC maintained SLF. Overall, results were positive for Native American cultural resources within a 0.5-mile radius of the Project site. The NAHC identified thirty (30) Native American individuals who would potentially have specific knowledge as to whether or not Native American cultural resources are identified within the proposed Project site that could be at-risk. To date, Dudek has not initiated contact with the individuals on the NAHC's contact list regarding the proposed Project. Note: Sacred Land Files maintained by the NAHC represent a curation of

"ancient places of special religious or social significance to Native Americans and known ancient graves and cemeteries of Native Americans on private and public lands in California" (nahc.gov 2021) provided by Tribal entities and Native American representatives. For various reasons, Tribal entities and Native American representatives do no not always report sacred lands or Tribal Cultural Resources (TCRs) to the NAHC; as such, the NAHC's SLF is not necessarily a comprehensive list of known TCRs and searches of the SLF must be considered in concert with other research and not used as a sole source of information regarding the presence of TCRs. Additionally, results of the SLF relate to the general regional area within and surrounding the proposed Project site and don't necessarily equate to the existence of resources within the specific area occupied by the proposed Project site. Correspondence with the NAHC is included in Appendix B.

## Pedestrian Survey

Dudek archaeologists David Faith and Connor Konarski conducted an intensive-level pedestrian survey of the Project site on April 15 and 16, 2024. All survey work was conducted employing standard archaeological procedures and techniques consistent with Secretary of the Interior Standards and Guidelines for Archaeology. When possible, 10-meter interval survey transects were conducted, oriented in north-south or east-west cardinal directions at each work area. Within the transects, the ground surface was examined for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of the current or former presence of structures or buildings (e.g., standing exterior walls, post holes, foundations), and historic era artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials. Areas surveyed include portions of access roads requiring improvements, as well as a 50-foot radius around each Tower, and a 100-foot underline corridor (as applicable) for Tower Spans within the Project site. Areas of the Project site that contained a greater than 30% slope were not surveyed due safety concerns and their general lack of suitability for containing cultural resources.

A minimum density of three or more artifacts in a 25-meter (82-foot) squared area constituted an archaeological site, as will the presence of any feature (i.e., concrete foundation). Any separation of 50 meters (164 feet) squared or more between artifacts was considered justification for delineation of a site boundary. A temporary site number would be assigned to all newly identified archaeological resources that met the definition of an archaeological site. Isolated finds consisting of fewer than three artifacts within a 25-meter squared area would be recorded separately from sites, including the use of a different numbering scheme.

Overall, the Project site was predominantly covered in a moderate to dense amount of vegetation, including several species of invasive grasses, mustard (*Brassica spp.*), chamise (*Adenostoma sp.*), coyote brush (Baccharis pilularis), and sagebrush (*Artemisia spp.*). Consequently, visibility was poor (0-25%) in areas of dense vegetation, and fair (25-40%) along dirt access roads and within areas that contained rocky outcrops and high-lying bedrock (Exhibit 1 and 2, respectively). The majority of the work areas were within hillsides with high degrees of slope. Throughout the Project site, there was evidence of various disturbances such as modern dumping (trash and other debris), grading for access roads, vehicle overland travel, grading along the transmission line and surrounding areas, as well as active erosion along the steeper hillsides.

The pedestrian survey identified one prehistoric isolate within the 100-foot corridor work area at Tower Span 35-2 to 35-3. This isolate was given the temporary field identification number: LADWP-CK-I-001. This prehistoric resource

consists of one cryptocrystalline silicate projectile point, which measures 2.5 centimeters (cm) long x 1.3 cm wide x 0.6 cm thick. The resource was formally recorded and left *in situ*. Isolates are categorically ineligible for listing on the CRHR and are not considered unique archaeological resources under CEQA. Under CEQA, isolates do not require additional treatment other than formal documentation. See Appendix C for the California Department of Parks and Recreation (DPR) 523 Form prepared by Dudek for LADWP-CK-I-001. Additionally, Table 5, below, details the results of the pedestrian survey at each work area.

## Table 5. Results of Pedestrian Survey

| Tower No. or Tower Span | Survey Date | Results |
|---|---|---|
| 32-4 | 4/16/2024 | The work area was moderately covered in vegetation and is actively used as a dump site for modern trash and other debris. No cultural resources were observed within the work area at time of survey. |
| 33-2 to 33-3 | 4/16/2024 | The work area was covered in dense vegetation. As a result, ground surface visibility was poor. The landform within the work area is a moderately steep north-facing slope and contains an eroded trail. No cultural resources were observed within the work area at time of survey. |
| 35-2 to 35-3 | 4/16/2024 | One prehistoric isolate, a small projectile point given the temporary field identification number of "LADWP-CK-I-001", was located within the boundary of the work area. Ground surface visibility within the work area was poor due to dense vegetation. No other cultural resources were observed within the work area at time of survey. |
| 38-1 to 38-2 | 4/15/2024 | The work area was covered in dense vegetation, thus making ground surface visibility poor. The landform within the work area is a graded, flattened section of land and partially within a north-facing slope. No cultural resources were observed within the work area at time of survey. |
| 38-4 to 39-1 | 4/16/2024 | The work area was covered in dense vegetation, making ground surface visibility poor. The work area is atop a small knoll. No cultural resources were observed within the work area at time of survey. |
| 41-3 to 41-4 | 4/16/2024 | The work area was covered in dense vegetation, thus making ground surface visibility poor. The work area is within a steep north/northeast-facing slope. No cultural resources were observed within the work area at time of survey. |
| 43-2 | 4/15/2024 | The work area was covered in dense vegetation, thus making ground surface visibility poor. The work area is within a very steep north-facing slope. Within the work area there is a dirt road and a tall cut bank. Due to safety concerns, the areas past the dirt road were not surveyed on foot. No cultural resources were observed within the work area at time of survey. |
| 46-4 | 4/15/2024 | The work area was covered in dense vegetation, thus making ground surface visibility poor. The work area is within a steep north-facing slope and contains a graded, dirt road. No cultural resources were observed within the work area at time of survey. |
| 49-2 to 49-3 | 4/15/2024 | The project boundary was covered in a moderate amount of vegetation, so ground surface visibility was fair. The work area is within a south-facing slope and contains a prominent weathered rocky outcrop. No cultural resources were observed within the work area at time of survey. |
| 54-2 | 4/16/2024 | The work area was covered in a moderate amount of vegetation, so ground surface visibility was fair. The work area is within a south-facing slope and contains a prominent weathered rocky outcrop. No cultural resources were observed within the work area at time of survey. |

**Table 5. Results of Pedestrian Survey**

| Tower No. or Tower Span | Survey Date | Results |
|---|---|---|
| 57-1 to 57-2 | 4/16/2024 | The work area was covered in a dense amount of vegetation, so ground surface visibility was poor. The work area is atop a knoll and within a west-facing slope. There are three dirt roads that transect the work area. No cultural resources were observed within the work area at time of survey. |
| 57-2 | 4/16/2024 | The work area was covered in a moderate amount of vegetation, so ground surface visibility was fair. The work area is within a graded, flattened piece of land. No cultural resources were observed within the work area at time of survey. |
| 61-2 | 4/15/2024 | The work area was covered in a dense amount of vegetation, so ground surface visibility was poor. The work area is within a steep southwest facing slope. No cultural resources were observed within the work area at time of survey. |
| 65-4 to 66-1 | 4/15/2024 | The work area was covered in a moderate amount of vegetation, so ground surface visibility fair. There is a storage shed, underground utilities, and a dirt road within the work area and is contained within a steep southwest facing slope. No cultural resources were observed within the work area at time of survey. |
| 70-4 to 71-1 | 4/15/2024 | The work area was covered in dense vegetation, so ground surface visibility was poor. There was a small circular depression on the ground surface noted within the southern portion of the work area, although, no cultural materials were observed within or near it. The work area is within a south-facing slope. No cultural resources were observed within the work area at time of survey. |
| 76-5 | 4/15/2024 | The project boundary was covered in dense vegetation, so ground surface visibility was poor. The work area is primarily within a graded, flat strip of land. No cultural resources were observed within the work area at time of survey. |
| 77-1 | 4/15/2024 | The project boundary was covered in dense vegetation, so ground surface visibility was poor. There was a manhole, a gravel road, a portion of a building, and a portion of a large retention basin within the work area. The land within the work area also appeared to be heavily disturbed by grading to make the retention basin, plus room for the building and water tower nearby. No cultural resources were observed within the work area at time of survey. |

# Summary and Management Recommendations

Dudek's cultural resources inventory efforts in support of the Adelanto-Rinaldi Line 1 Upgrade Project included an SCCIC records search of the proposed Project site and surrounding 0.5-mile radius. The records search identified 27 previously recorded cultural resources within a 0.5-mile radius of the Project site, and two (2) previously recorded cultural resources adjacent to Tower 77-1. No previously recorded resources were identified within any of the work areas as part of the proposed Project. An NAHC SLF search was also requested for the proposed Project, and results were positive for Native American cultural resources within 0.5-miles of the Project site, though the NAHC did not provide details on what the resource(s) are or where they are located. Additionally, Dudek's review of historic topographic maps and aerial photographs indicate that the portions of the ADL-RIN L1 transmission line that overlap and are contained within the Project site do not meet the minimum age threshold to be considered a historical resource under CEQA.

Dudek archaeologists conducted an intensive-level pedestrian survey of the Project site on April 15 and 16, 2024. One prehistoric isolate (LADWP-CK-I-001) was identified within the work area of Tower Span 35-2 to 35-3. Isolates are categorically ineligible for listing on the CRHR and are not considered unique archaeological resources under CEQA. No other cultural resources were identified during the pedestrian survey.

While no known archaeological sites were identified that would be impacted by the Project, Dudek's cultural resources inventory indicates that there is a moderate potential for the inadvertent discovery of archaeological resources during Project implementation at Tower Spans 35-2 to 35-3 and 65-4 to 66-1, and Towers 76-5 and 77-1. In consideration of the conditions observed during the pedestrian survey at Tower Span 35-2 to 35-3, and due to the results of the SCCIC records searches indicating potentially significant cultural resources in close proximity to Tower Span 65-4 to 66-1 and Towers 76-5 and 77-1, Dudek recommends full time archaeological monitoring during initial ground disturbing activities (including ground clearance) for the Project at these work areas. If disturbed sediments (e.g., fill) or other sediments and formations are identified that do not have the potential to contain archaeological resources, then monitoring may be reduced or terminated. Due to the steepness of the slopes making several work areas unsuitable for sustaining buried archaeological resources, and in consideration of the pedestrian survey and records search results, all other work areas are considered to have a low potential for the inadvertent discovery of archaeological resources during Project implementation. Management recommendations for archaeological monitoring, and the reduction of potential impacts to unanticipated cultural resources and human remains during construction activities are provided below.

**Table 6. Work Area Management Recommendations**

| Tower Number or Tower Span | Management Recommendations |
|---|---|
| 32-4 | Procedures for Unanticipated Discoveries |
| 33-2 to 33-3 | Procedures for Unanticipated Discoveries |
| 35-2 to 35-3 | Archaeological Monitoring and Procedures for Unanticipated Discoveries |
| 38-1 to 38-2 | Procedures for Unanticipated Discoveries |
| 38-4 to 39-1 | Procedures for Unanticipated Discoveries |
| 41-3 to 41-4 | Procedures for Unanticipated Discoveries |
| 43-2 | Procedures for Unanticipated Discoveries |
| 46-4 | Procedures for Unanticipated Discoveries |
| 49-2 to 49-3 | Procedures for Unanticipated Discoveries |
| 54-2 | Procedures for Unanticipated Discoveries |
| 57-1 to 57-2 | Procedures for Unanticipated Discoveries |
| 57-2 | Procedures for Unanticipated Discoveries |
| 61-2 | Procedures for Unanticipated Discoveries |
| 65-4 to 66-1 | Archaeological Monitoring and Procedures for Unanticipated Discoveries |
| 70-4 to 71-1 | Procedures for Unanticipated Discoveries |
| 76-5 | Archaeological Monitoring and Procedures for Unanticipated Discoveries |
| 77-1 | Archaeological Monitoring and Procedures for Unanticipated Discoveries |

## Archaeological Monitoring

Full-time archaeological monitoring is recommended during initial ground disturbing activities at Tower Spans 35-2 to 35-3 and 65-4 to 66-1, and Towers 76-5 and 77-1. If disturbed sediments (e.g., fill) or other sediments and formations are identified that do not have the potential to contain archaeological resources, then monitoring may be reduced or terminated.

The requirement for Native American monitoring is left to the discretion of LADWP and based on the results of ongoing government-to-government consultation.

Post-construction reporting is recommended. This will provide a primary record of compliance with CEQA and LADWP-approved management strategies.

## Procedures for Unanticipated Discoveries

In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the Project, and in accordance with California Public Resources Code Section 21083.2(i), all construction work occurring within 50 feet of the find shall immediately stop until a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards can evaluate the significance of the find. Construction activities may continue in other areas, or use existing paths of travel, but should be redirected a safe distance from the find. Avoidance and/or preservation in place should be considered the preferred management approach wherever possible. If the new discovery is evaluated and found to be significant under CEQA and avoidance is not feasible, additional work such as data recovery may be warranted. A data recovery plan shall be developed by the qualified archaeologist in consultation LADWP and consulting parties, if applicable. Ground disturbance can continue only after the resource has been properly mitigated with approval by LADWP.

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be immediately notified of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined the appropriate treatment and disposition of the human remains. If the County Coroner determines that the remains are, or are believed to be, Native American, he or she shall notify the NAHC in Sacramento within 24 hours. In accordance with California Public Resources Code Section 5097.98, the NAHC must immediately notify the person or persons it believes to be the MLD from the deceased Native American. The MLD shall be provided the opportunity to inspect the remains after being granted access to the site and make recommendations for the treatment and disposition, in consultation with LADWP, of the human remains.

Should you have any questions relating to this report and its findings, please do not hesitate to contact me at 760.557.0998 or rbakhtiary@dudek.com.

Sincerely,



Roshanne Bakhtiary
Archaeologist

*Att.:* *Appendix A. (Confidential) SCCIC Records Search Results*
*Appendix B. NAHC Correspondence*
*Appendix C. (Confidential) Department of Parks and Recreation 523 Form*

*cc:* *Adam Giacinto, MA, RPA, Dudek; Alexandra Martini, Dudek*

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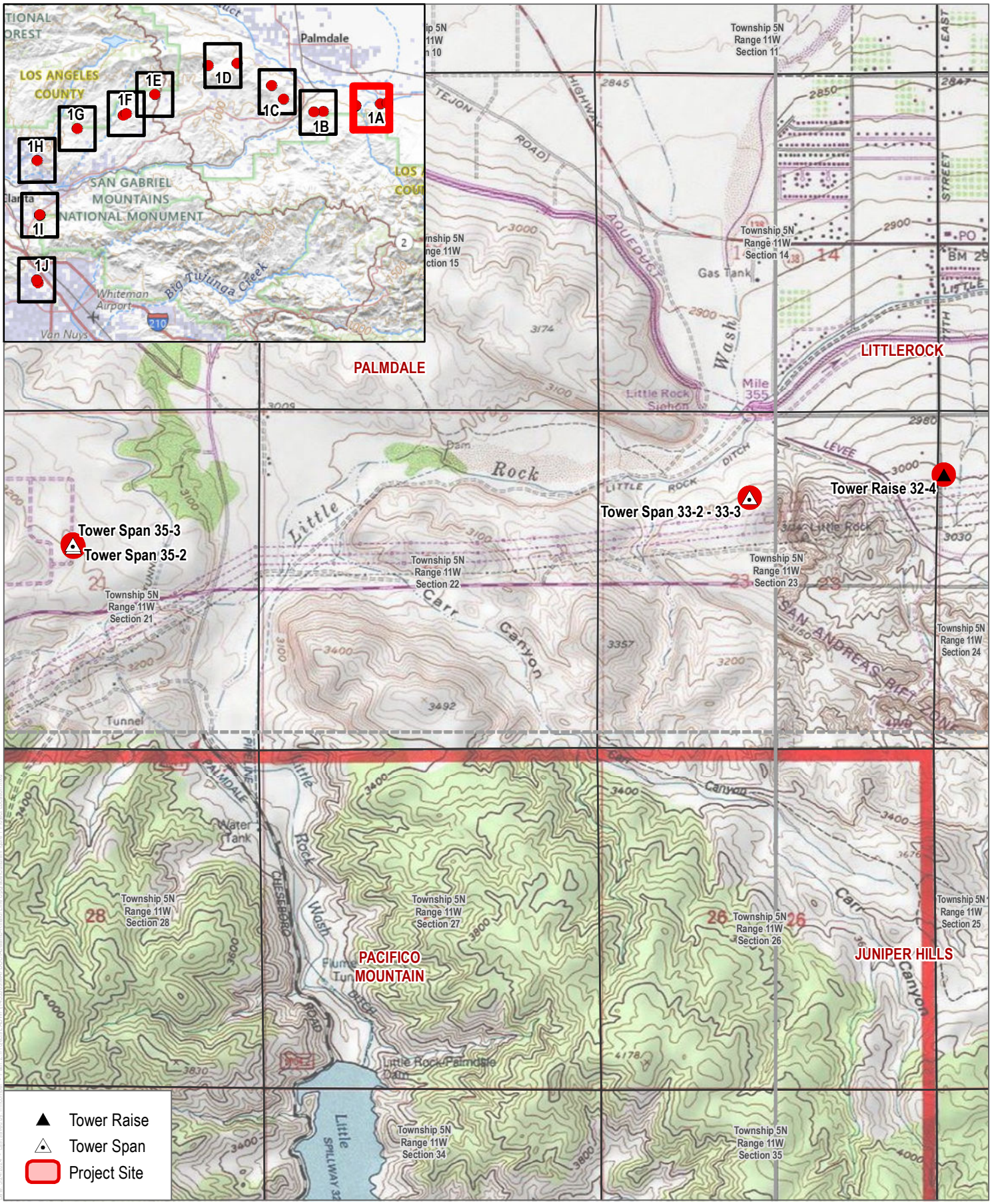
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SOURCE: USGS 7.5 Minute Series

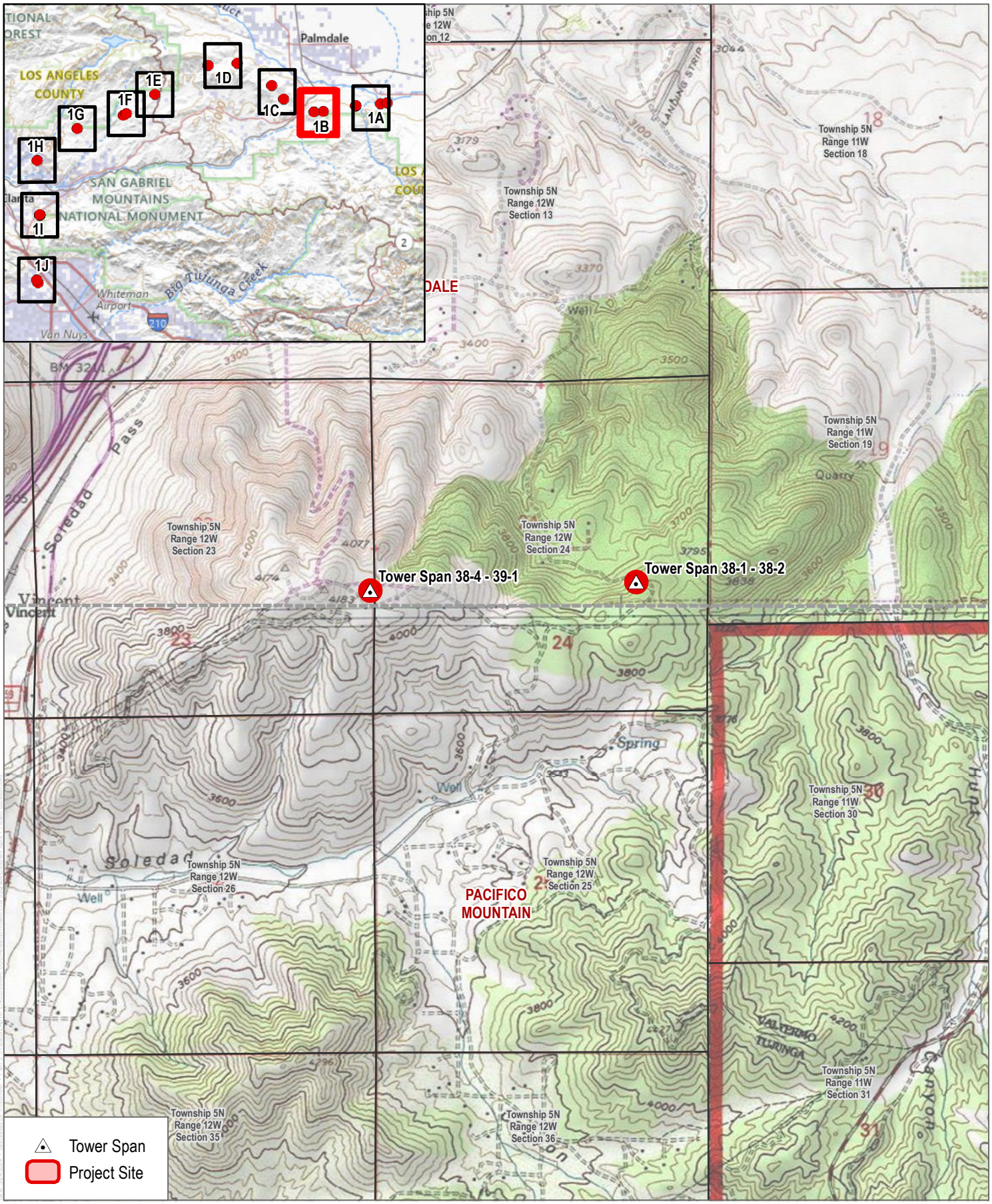
**FIGURE 1A**

Project Location, Tower Raise 32-4 and Tower Spans 33-2/33-3, and 35-2/35-3

LAWP Adelanto-Rinaldi Line Upgrade Project

DUDEK

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1:24,000




SOURCE: USGS 7.5 Minute Series

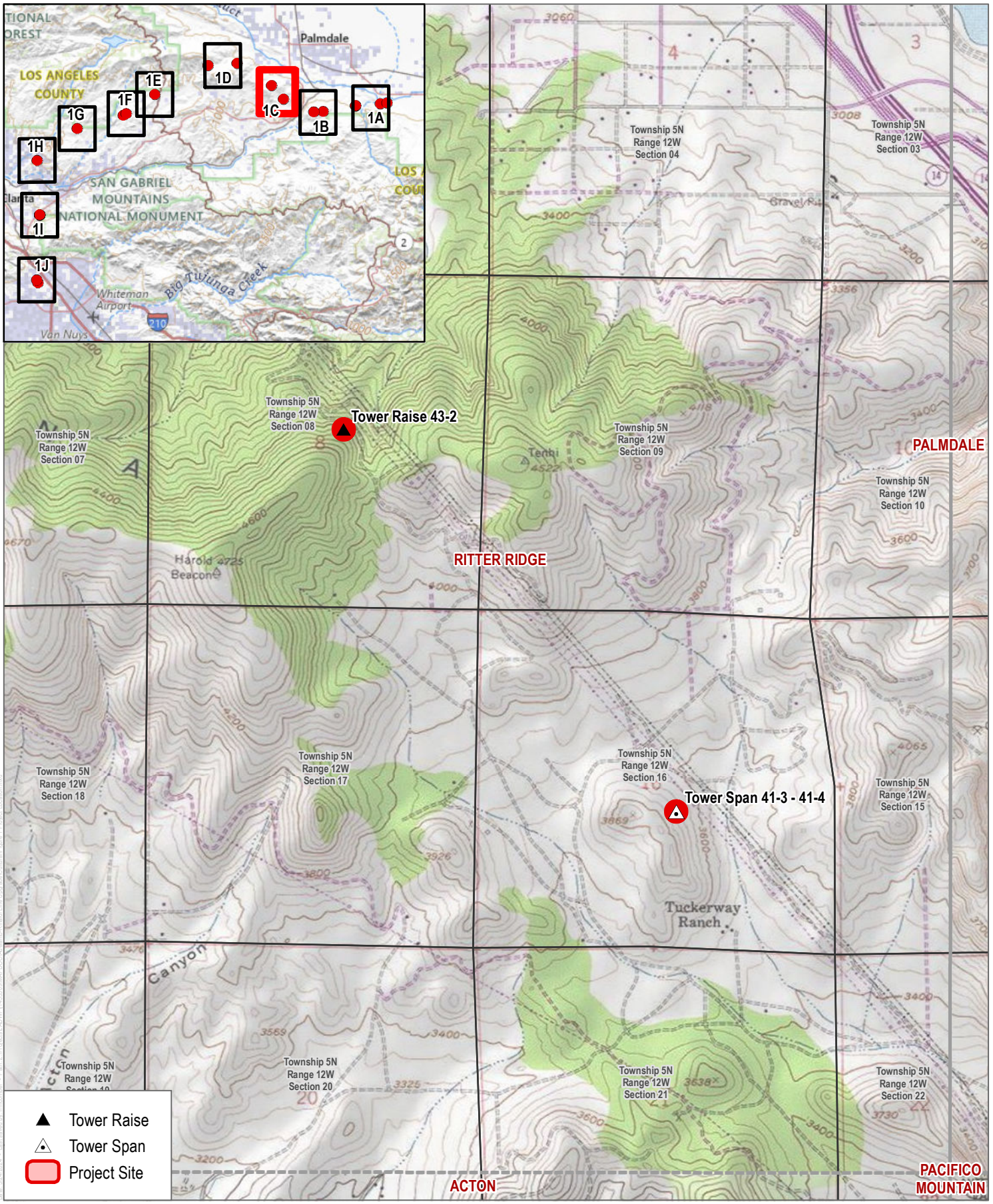
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**FIGURE 1B**

Project Location, Tower Spans 38-1/38-2 and 38-4/39-1

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series

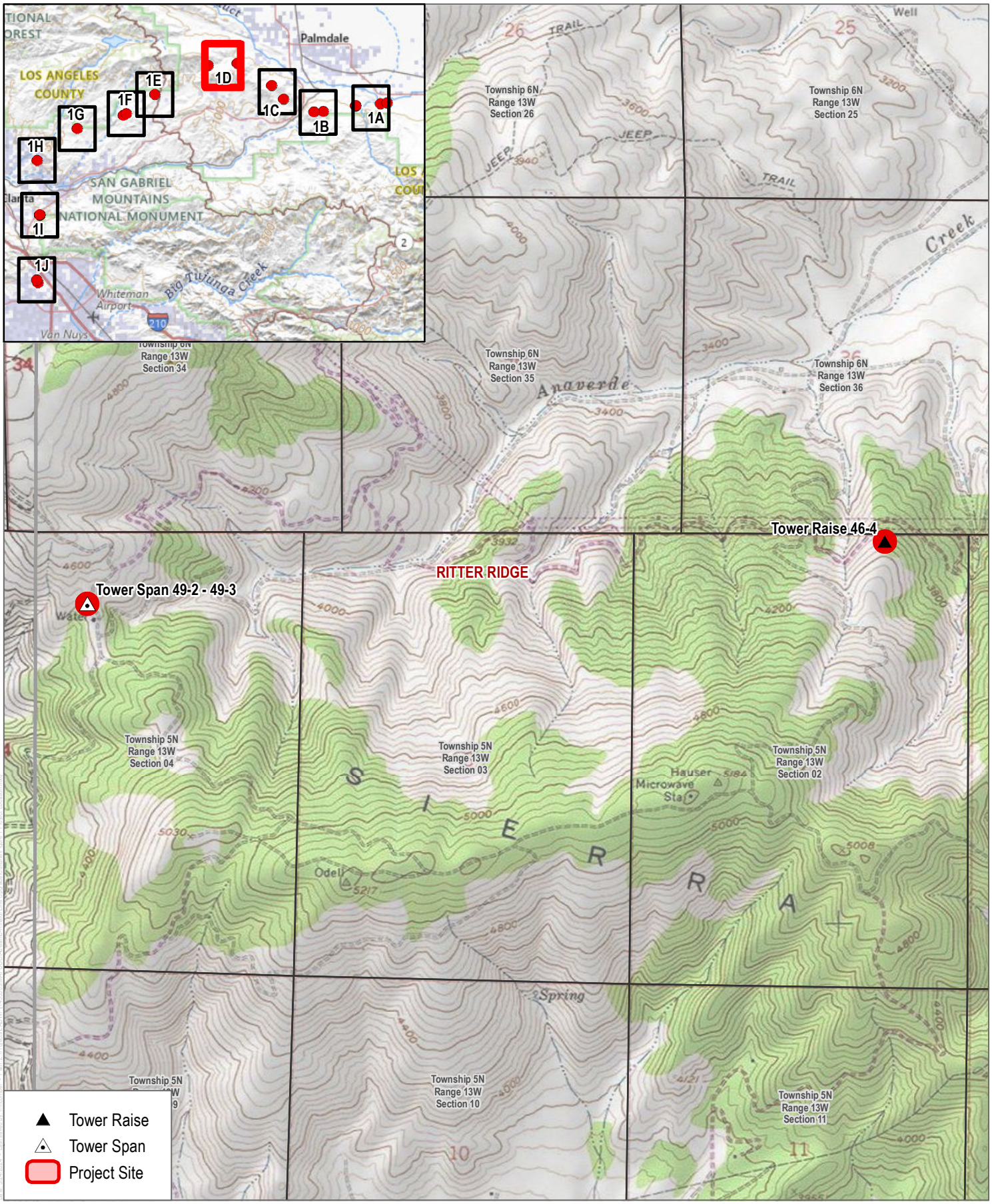
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**FIGURE 1C**

Project Location, Tower Span 41-3/41-4 and Tower Raise 43-2

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series

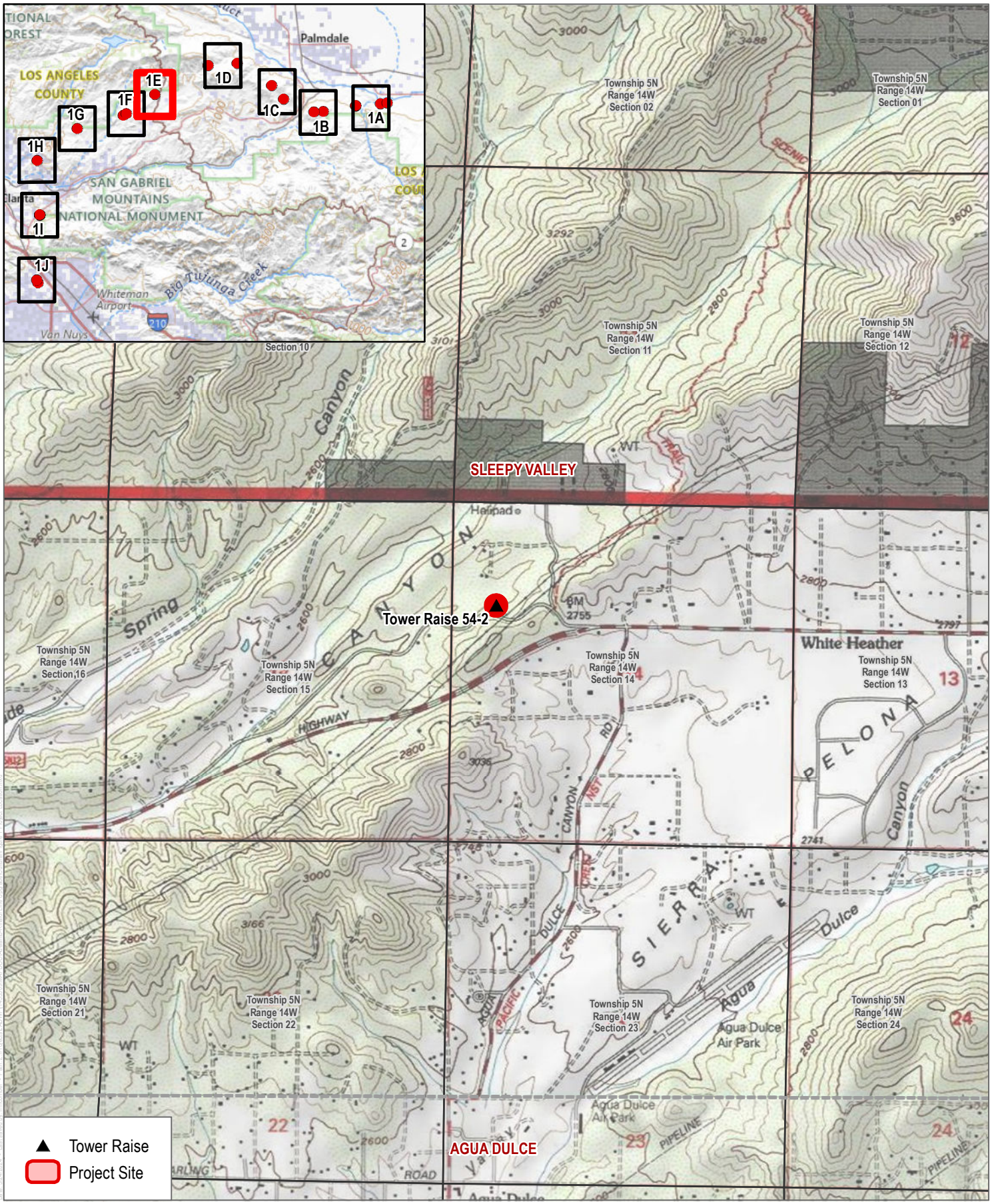
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**FIGURE 1D**

Project Location, Tower Rasie 46-4 and Tower Span 49-2/49-3

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series

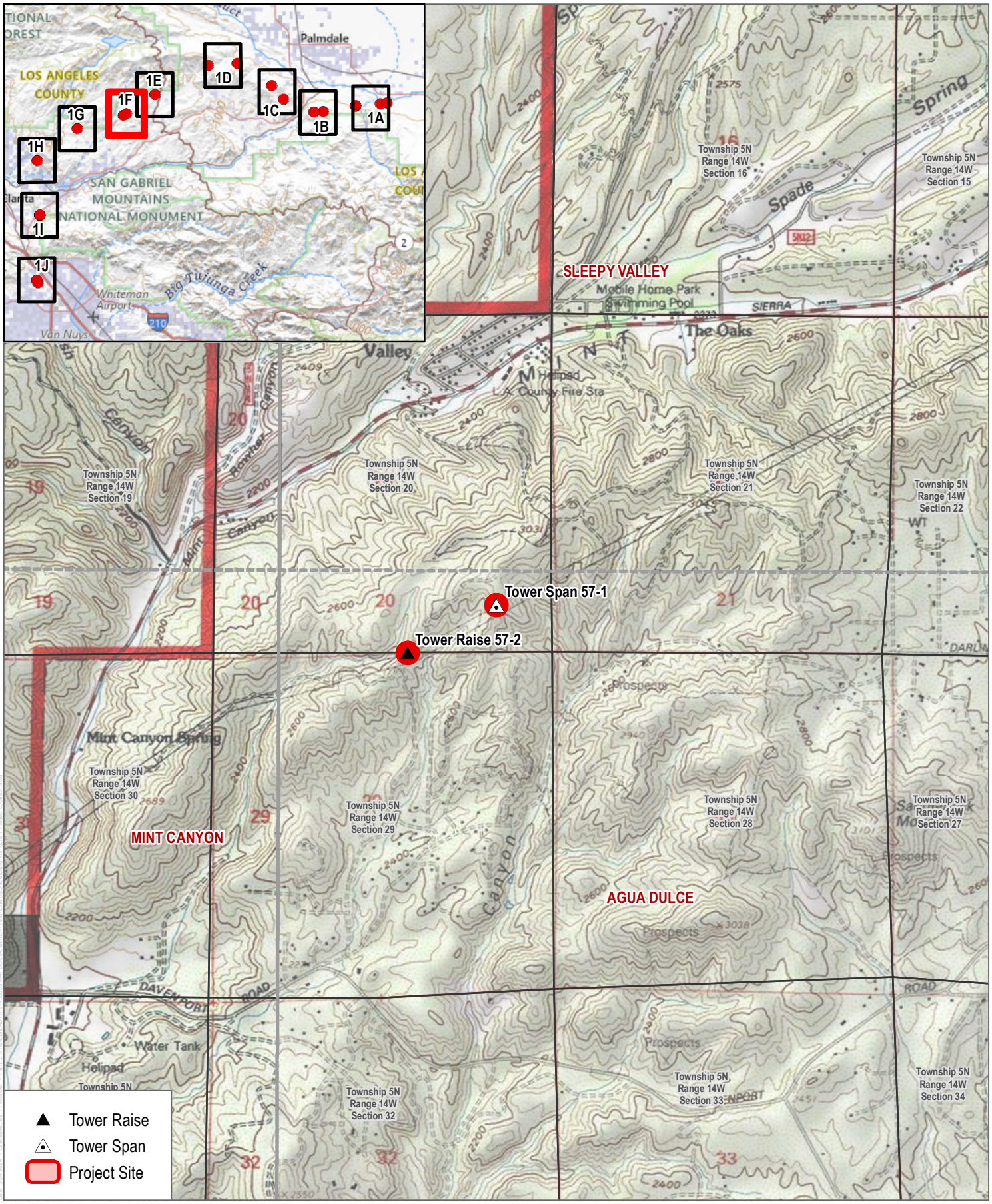
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**FIGURE 1E**

Project Location, Tower Raise 54-2

LAWP Adelanto-Rinaldi Line Upgrade Project



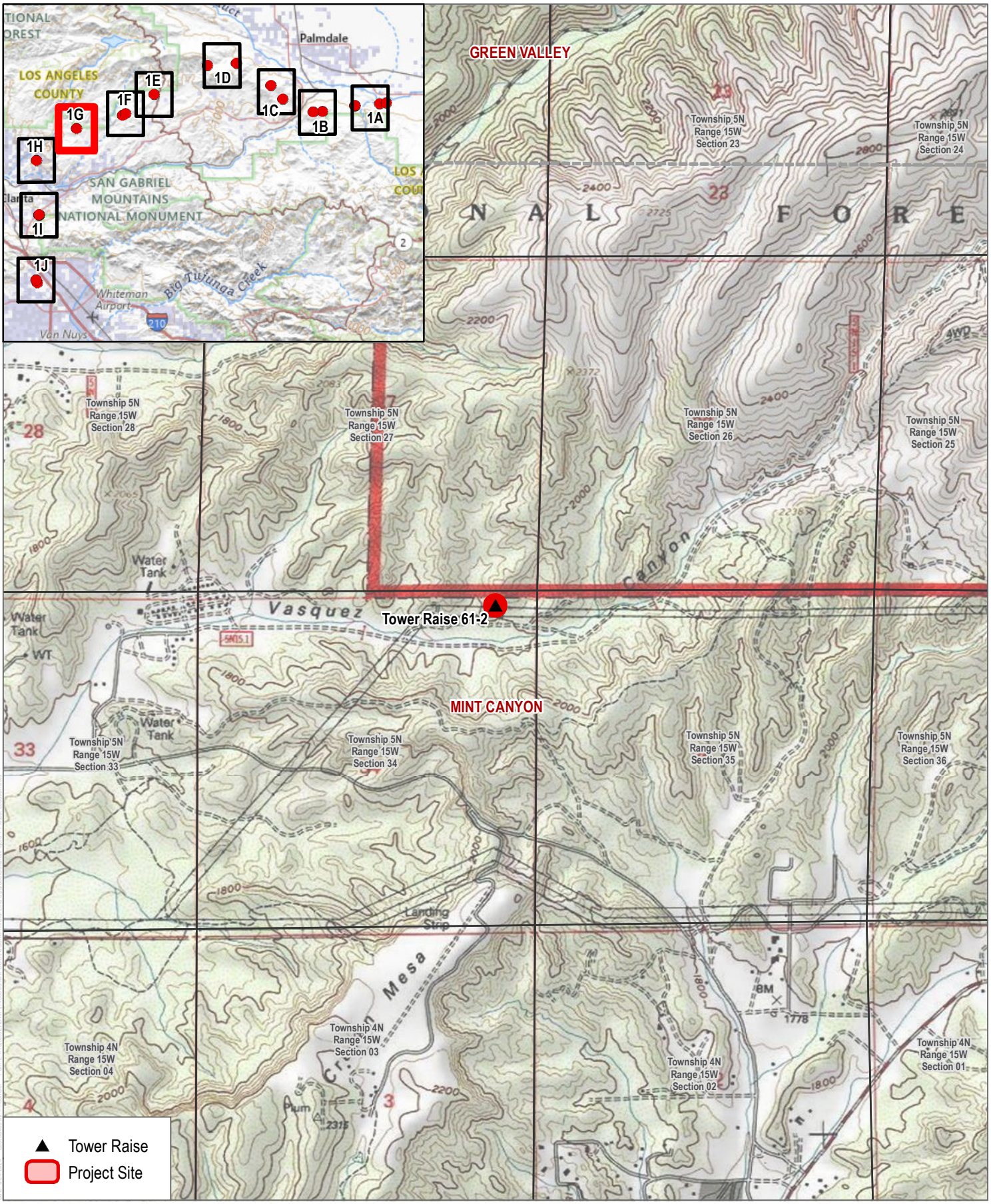

SOURCE: USGS 7.5 Minute Series

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0 285 570 Meters
1:24,000

**FIGURE 1F**

Project Location, Tower Span 57-1 and Tower Raise 57-2

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series

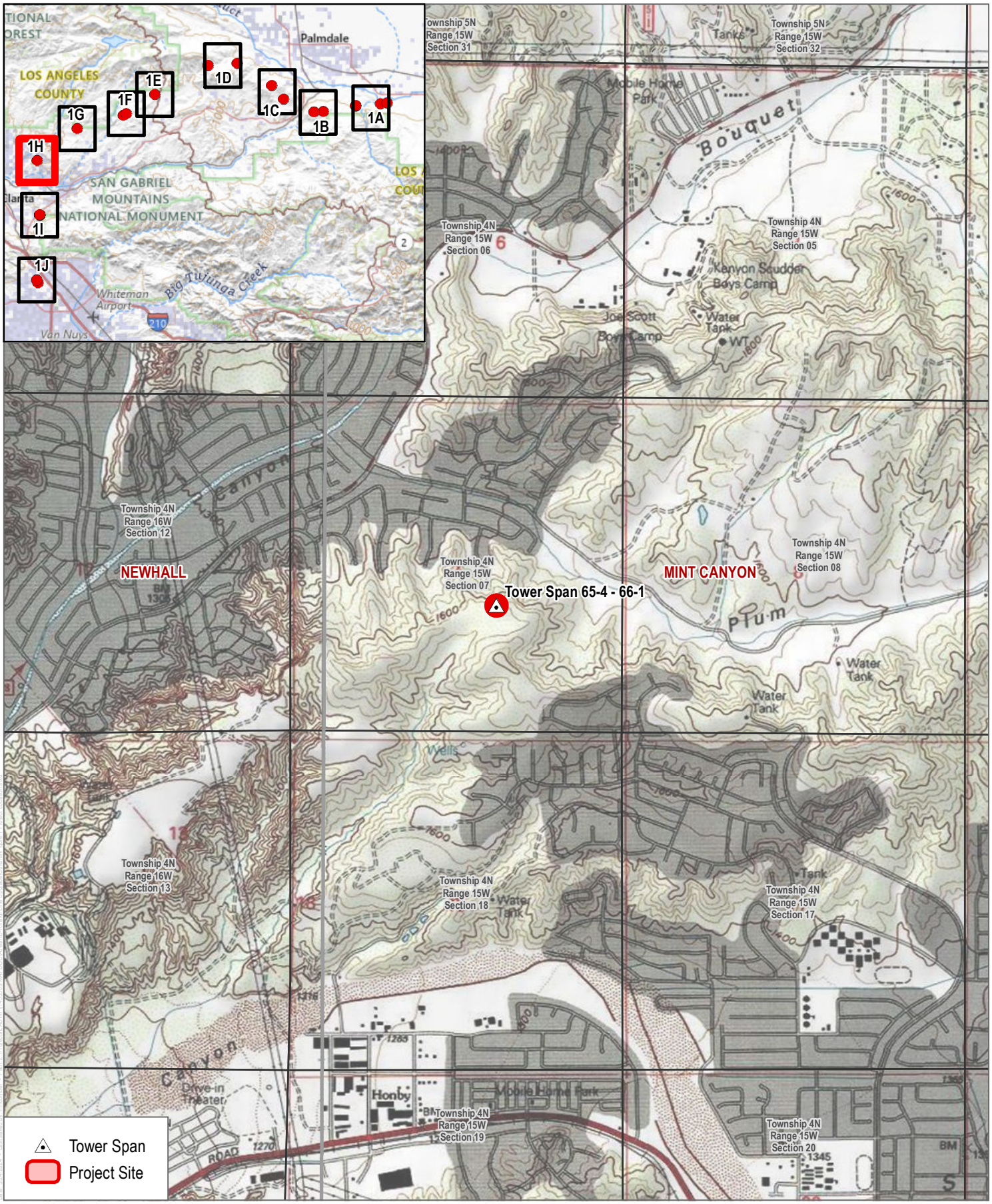
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**FIGURE 1G**

Project Location, Tower Raise 61-2

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series

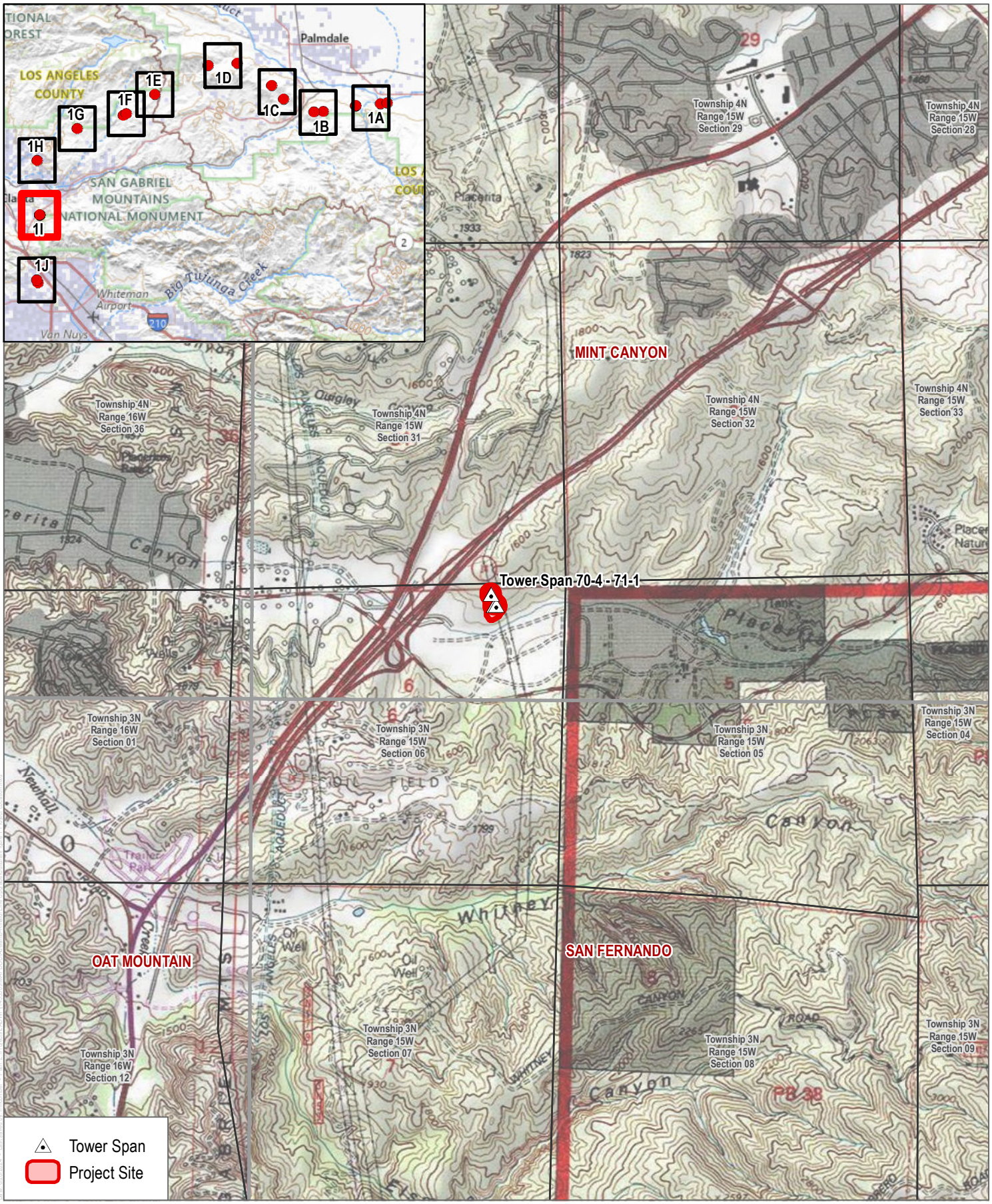
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1:24,000

**FIGURE 1H**

Project Location, Tower Span 65-4/66-1

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series

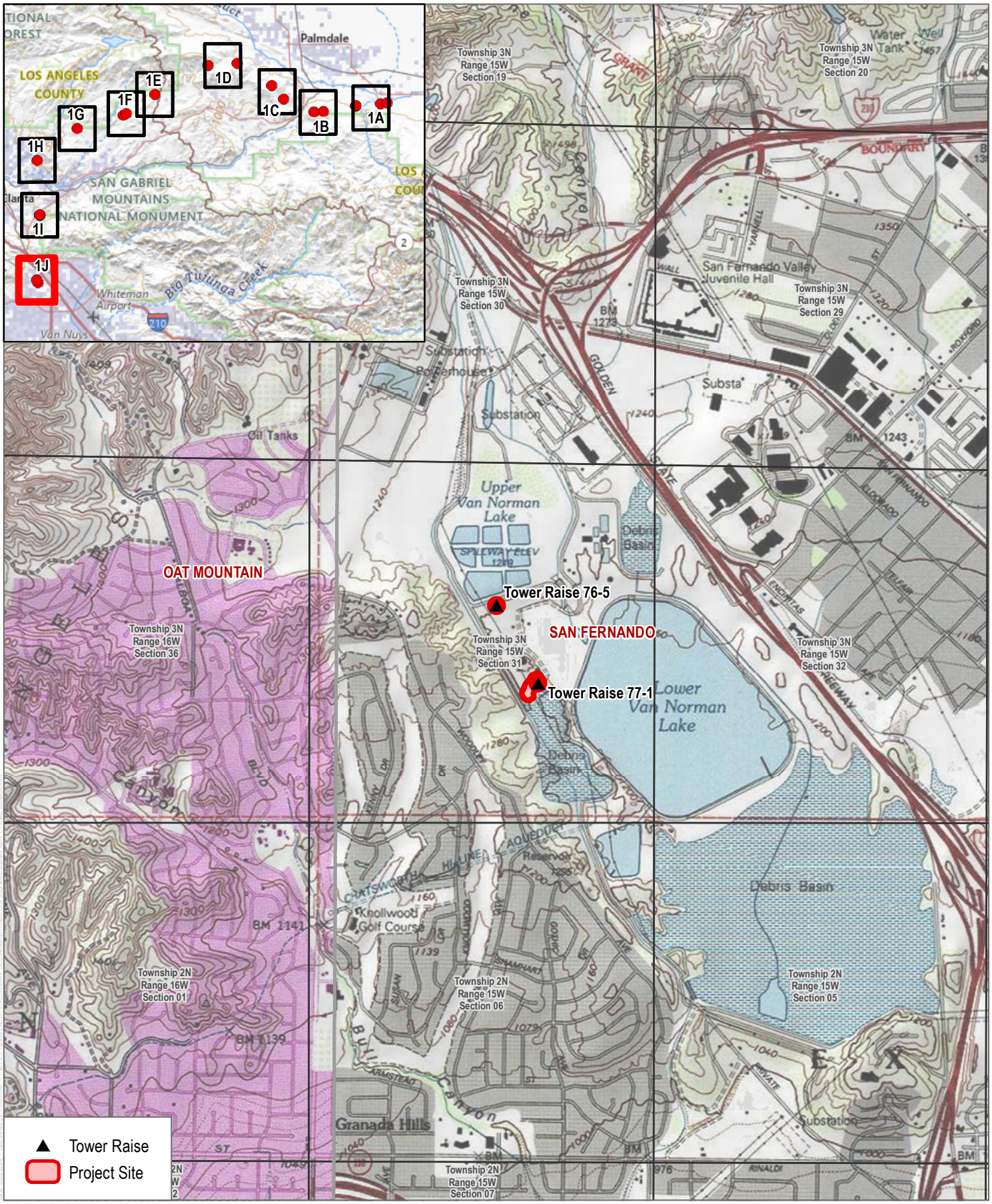
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1:24,000

**FIGURE 1I**

Project Location, Tower Span 70-4/71-1

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series

DUDEK

0 1,000 2,000 Feet
0 285 570 Meters
1:24,000

**FIGURE 1J**

Project Location, Tower Raise 76-5 and 77-1

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: Esri World Imagery Basemap; Los Angeles County 2024; Open Street Maps 2024

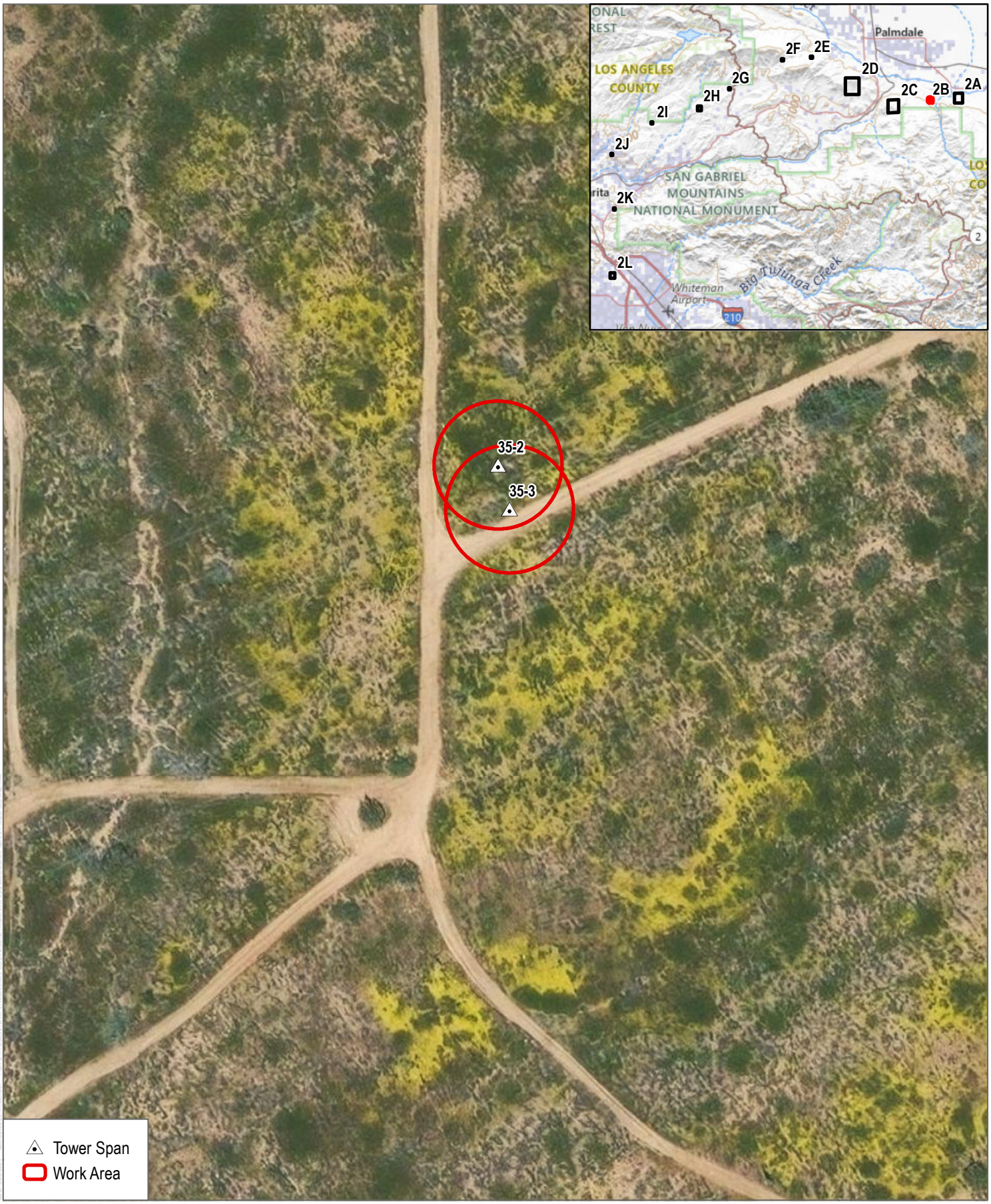
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0 70 140 Meters
1:6,000

**FIGURE 2A**

Project Site Map, Tower Raise 32-4 and Tower Span 33-2/33-3

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: Esri World Imagery Basemap; Los Angeles County 2024; Open Street Maps 2024

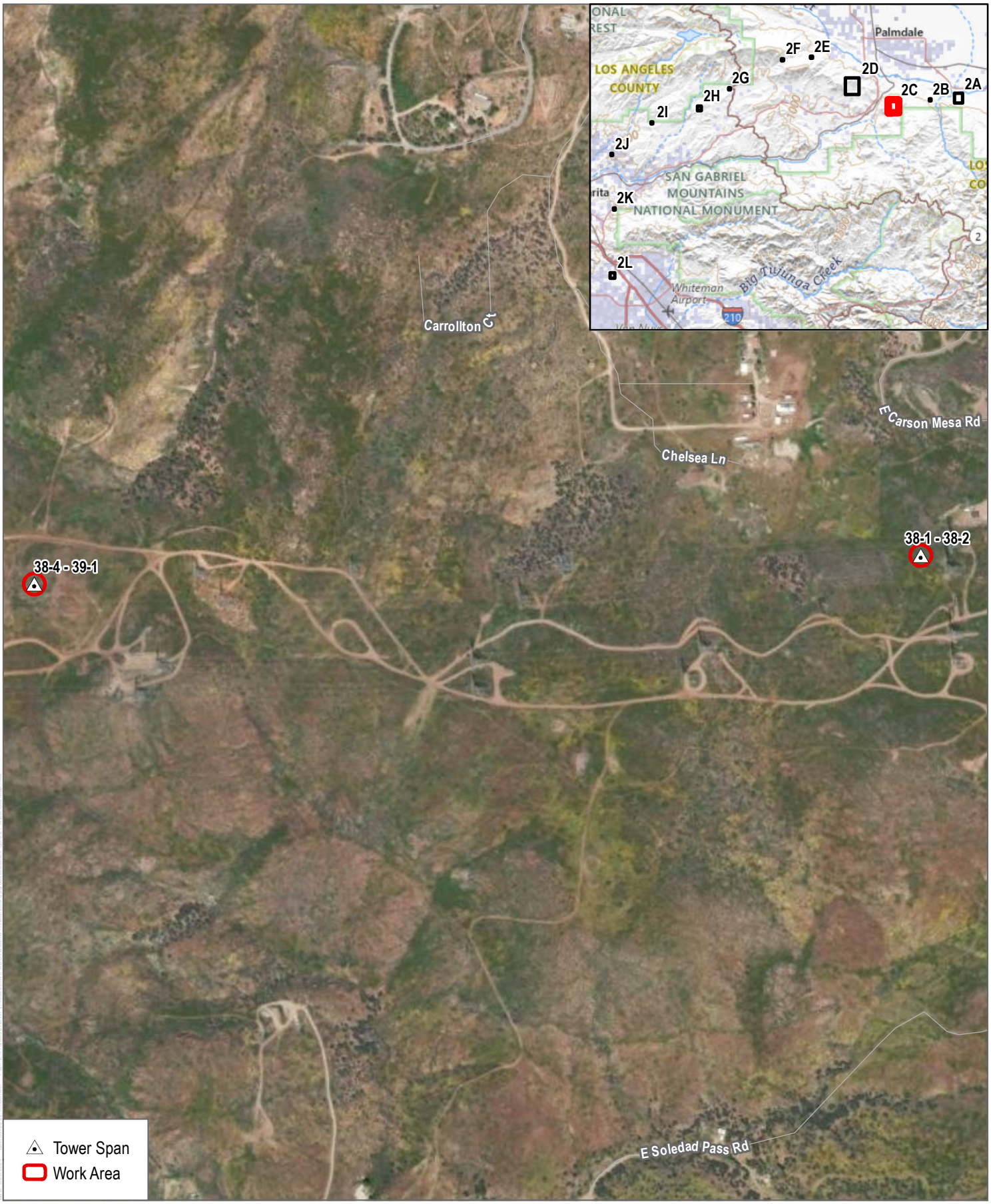
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0 50 100 Feet
0 12.5 25 Meters
1:1,200

**FIGURE 2B**

Project Site Map, Tower Span 35-2/35-3

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: Esri World Imagery Basemap; Los Angeles County 2024; Open Street Maps 2024

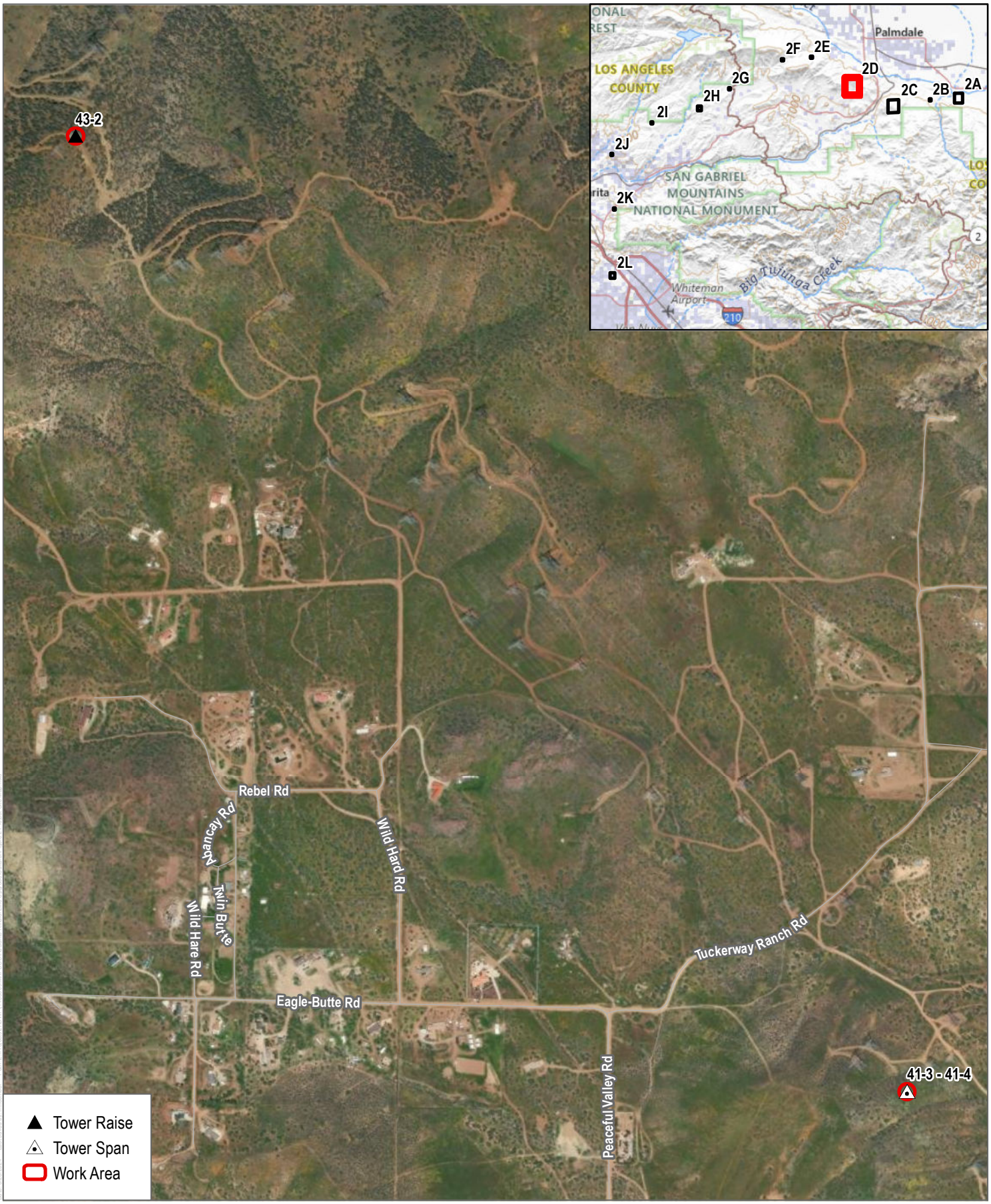
DUDEK

0 300 600 Feet
0 85 170 Meters
1:7,200

**FIGURE 2C**

Project Site Map, Tower Span 38-1/38-2 and 38-4/39-1

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: Esri World Imagery Basemap; Los Angeles County 2024; Open Street Maps 2024

DUDEK

0 400 800 Feet
0 112.5 225 Meters
1:9,600

**FIGURE 2D**

Project Site Map, Tower Span 41-3/41-4 and Tower Raise 43-2

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: Esri World Imagery Basemap; Los Angeles County 2024; Open Street Maps 2024

DUDEK

0 50 100 Feet
0 12.5 25 Meters
1:1,200

**FIGURE 2E**

Project Site Map, Tower Raise 46-4

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: Esri World Imagery Basemap; Los Angeles County 2024; Open Street Maps 2024

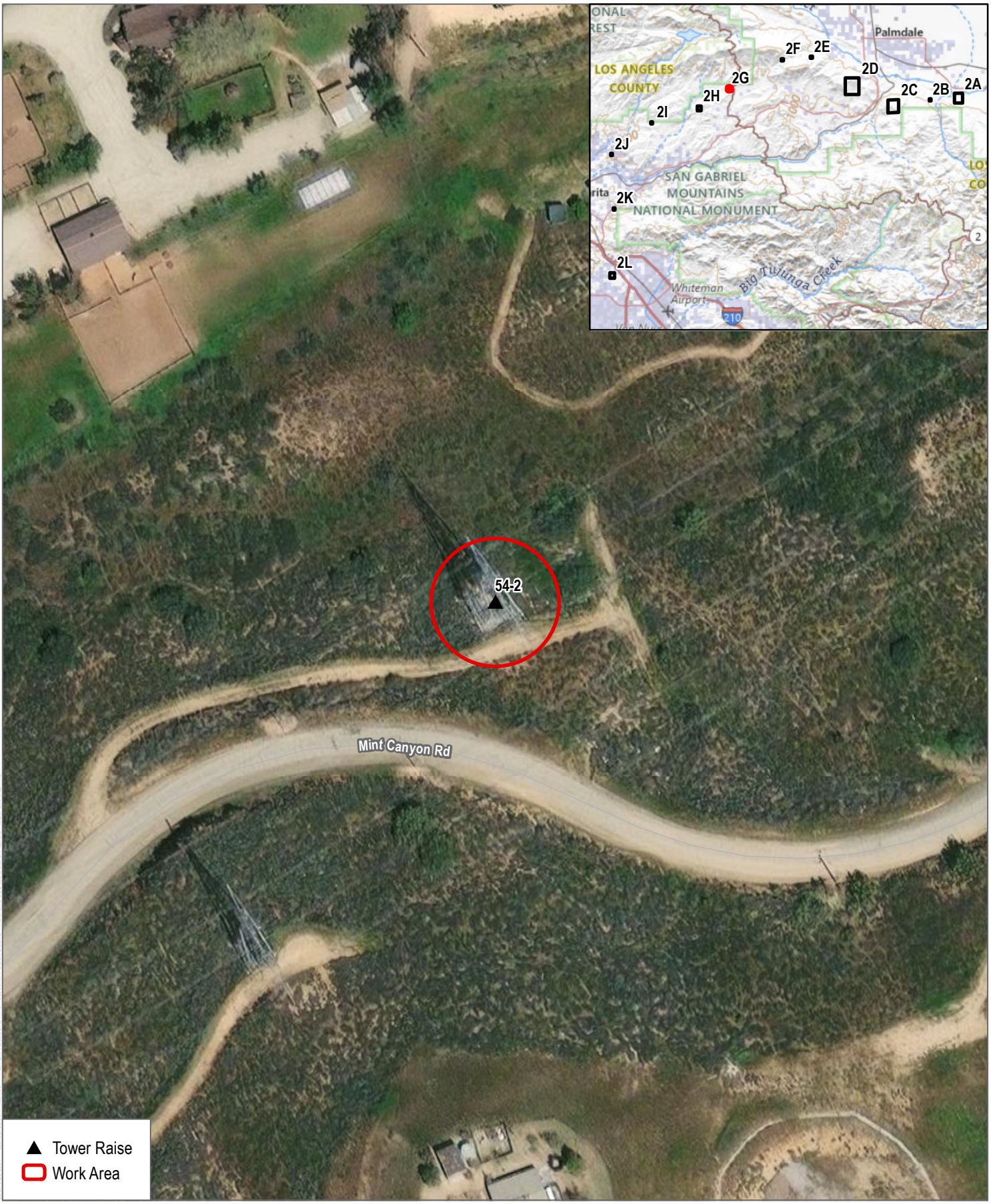
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0 50 100 Feet
0 12.5 25 Meters
1:1,200

**FIGURE 2F**

Project Site Map, Tower Span 49-2/49-3

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: Esri World Imagery Basemap; Los Angeles County 2024; Open Street Maps 2024

DUDEK

0 50 100 Feet
0 12.5 25 Meters
1:1,200

**FIGURE 2G**

Project Site Map, Tower Raise 54-2

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: Esri World Imagery Basemap; Los Angeles County 2024; Open Street Maps 2024

DUDEK

0 100 200 Feet
0 25 50 Meters
1:2,400

**FIGURE 2H**

Project Site Map, Tower Span 57-1 and Tower Raise 57-2

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: Esri World Imagery Basemap; Los Angeles County 2024; Open Street Maps 2024

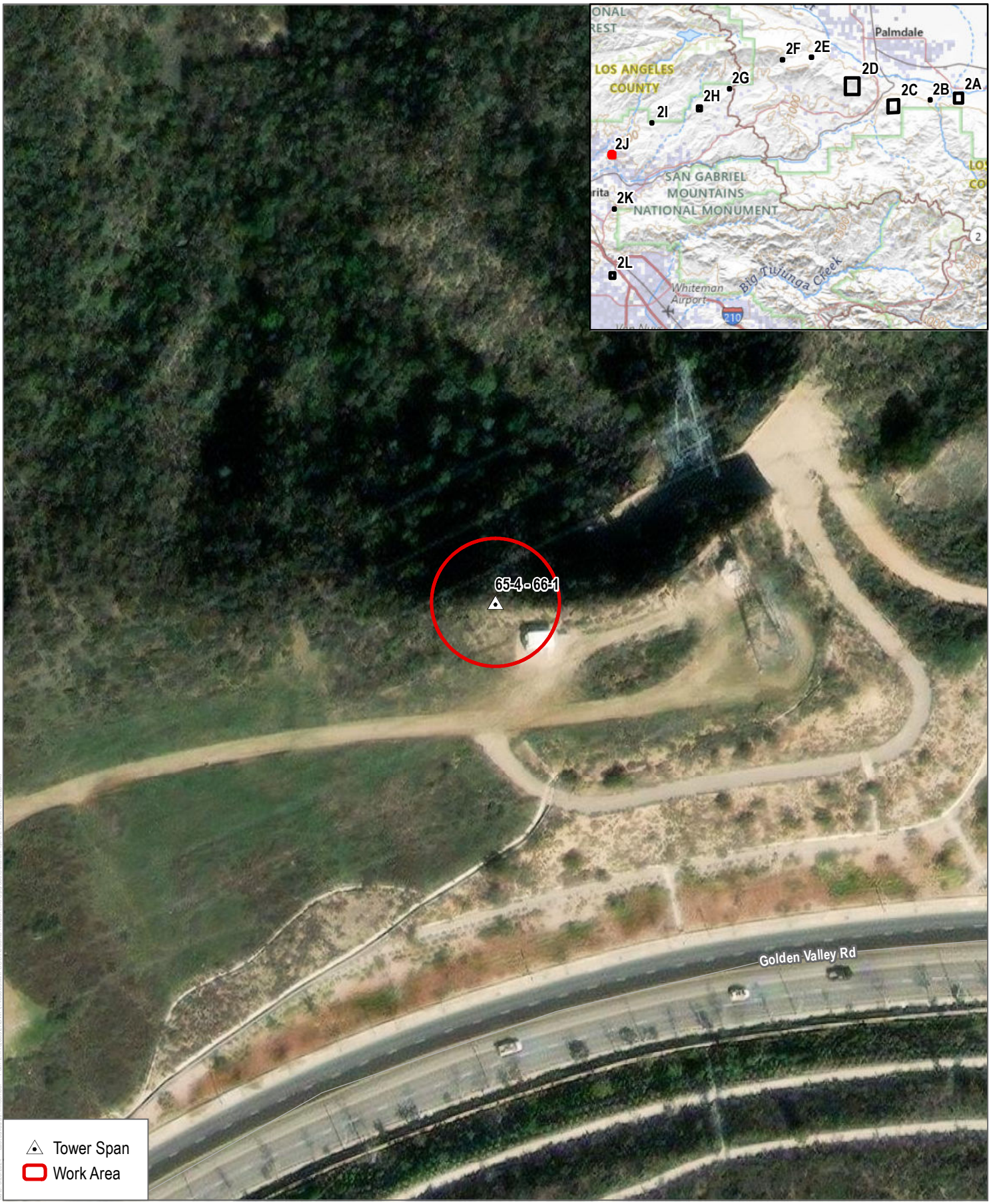
DUDEK

0 50 100 Feet
0 12.5 25 Meters
1:1,200

**FIGURE 2I**

Project Site Map, Tower Raise 61-2

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: Esri World Imagery Basemap; Los Angeles County 2024; Open Street Maps 2024

DUDEK

0 50 100 Feet
0 12.5 25 Meters
1:1,200

**FIGURE 2J**

Project Site Map, Tower Span 65-4/66-1

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: Esri World Imagery Basemap; Los Angeles County 2024; Open Street Maps 2024

0 50 100 Feet
0 12.5 25 Meters
1:1,200

DUDEK

**FIGURE 2K**

Project Site Map, Tower Span 70-4/71-1

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: Esri World Imagery Basemap; Los Angeles County 2024; Open Street Maps 2024

DUDEK

0 150 300 Feet
0 40 80 Meters
1:3,600

**FIGURE 2L**

Project Site Map, Tower Raise 76-5 and 77-1

LAWP Adelanto-Rinaldi Line Upgrade Project

**Exhibit 1.** Example of work area with poor visibility. Overview of Tower 77-1, view facing west.



**Exhibit 2.** Example of work area with fair visibility. Tower 32-4, view facing south.



# Appendix A

CONFIDENTIAL SCCIC Records Search Results

# Appendix B

NAHC Correspondence

# Sacred Lands File & Native American Contacts List Request

**NATIVE AMERICAN HERITAGE COMMISSION**
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95501
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

*Information Below is Required for a Sacred Lands File Search*

Project: 14553.09

County: Los Angeles

USGS Quadrangle

Name: San Fernando, Mint Canyon, Sleep Valley and Agua Dulce, Ritter Ridge, Littlerock and Palmdale

Township: 3N, 4N, 5N Range: 11W, 12W, 13W, 14W, 15W Section(s): 4, 6, 7, 16, 20, 21, 23, 24

Company/Firm/Agency:

Dudek

Contact Person: Jennifer De Alba

Street Address: 725 Front Street #400

City: Santa Cruz Zip: 95060

Phone: (805) 448-5529 Extension:

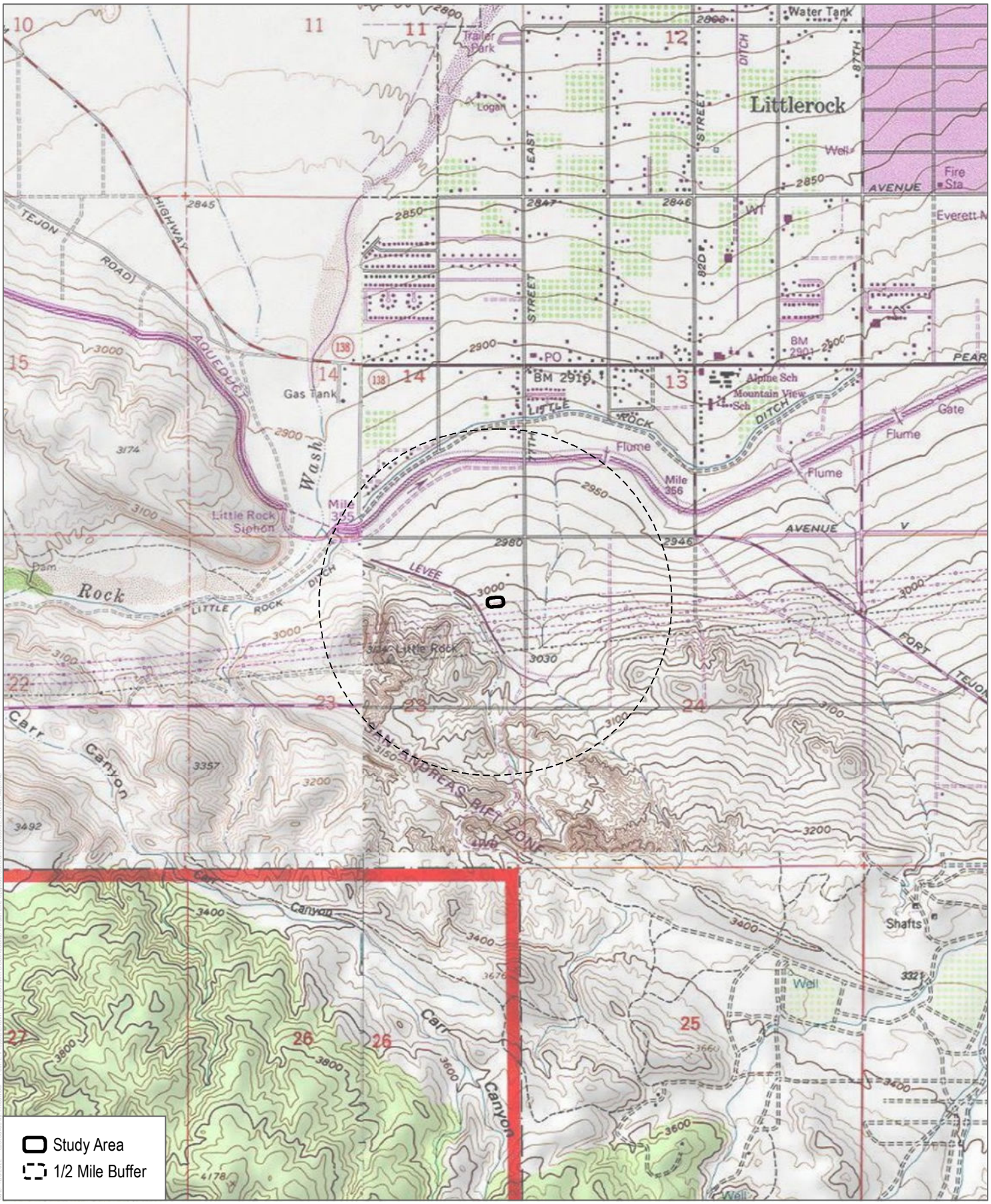
Fax:

Email: jdealba@dudek.com

Project Description:

transmission line upgrades

☑ Project Location Map is attached




SOURCE: USGS 7.5 Minute Series Littlerock Quadrangle, Township 5N; Range 11W; Section 23

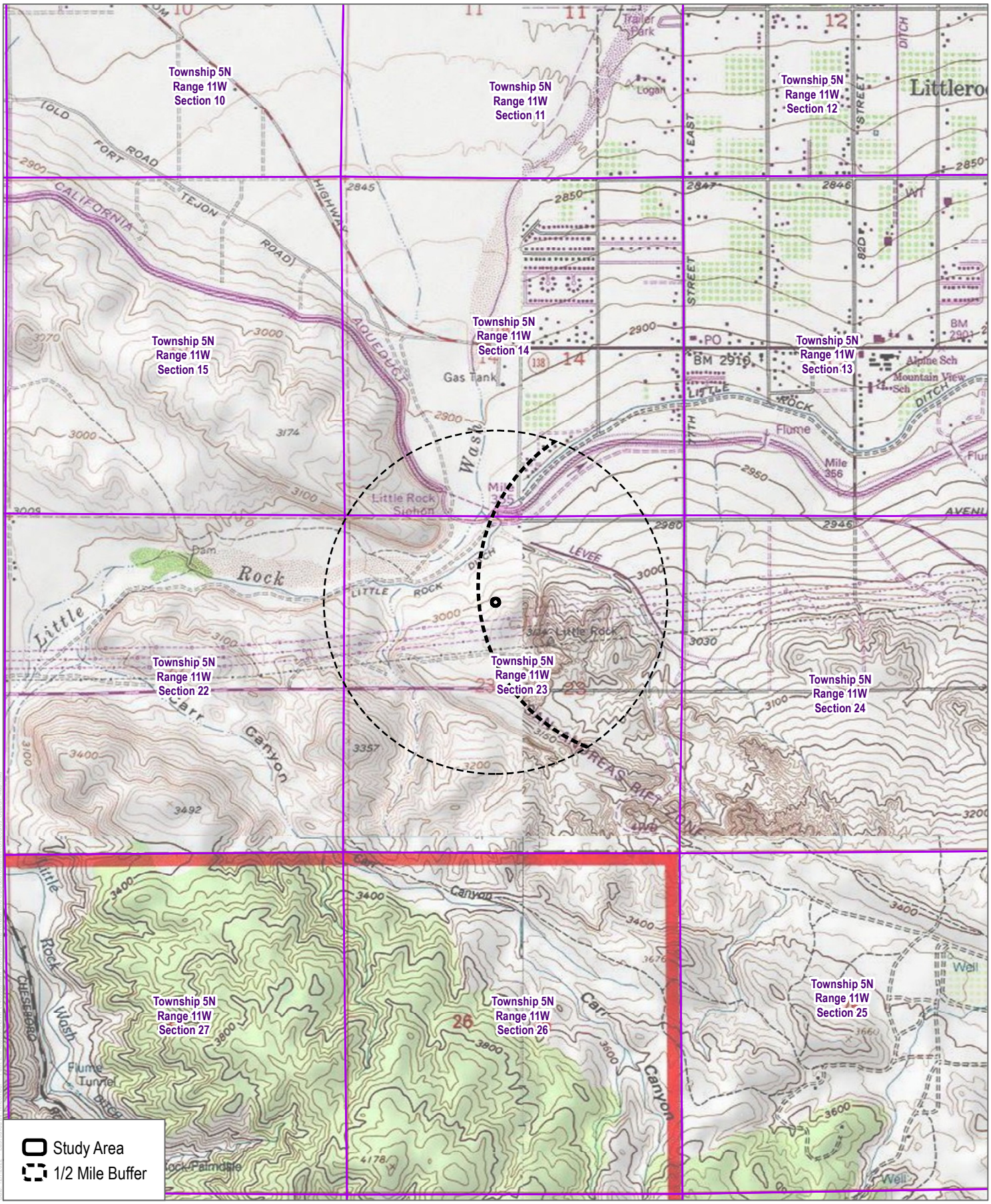
DUDEK

0 1,000 2,000 Feet
0 285 570 Meters
1:24,000

**Tower Span 32-4 - 33-1**

Records Search

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series Palmdale Quadrangle, Township 5N; Range 11W; Section 23

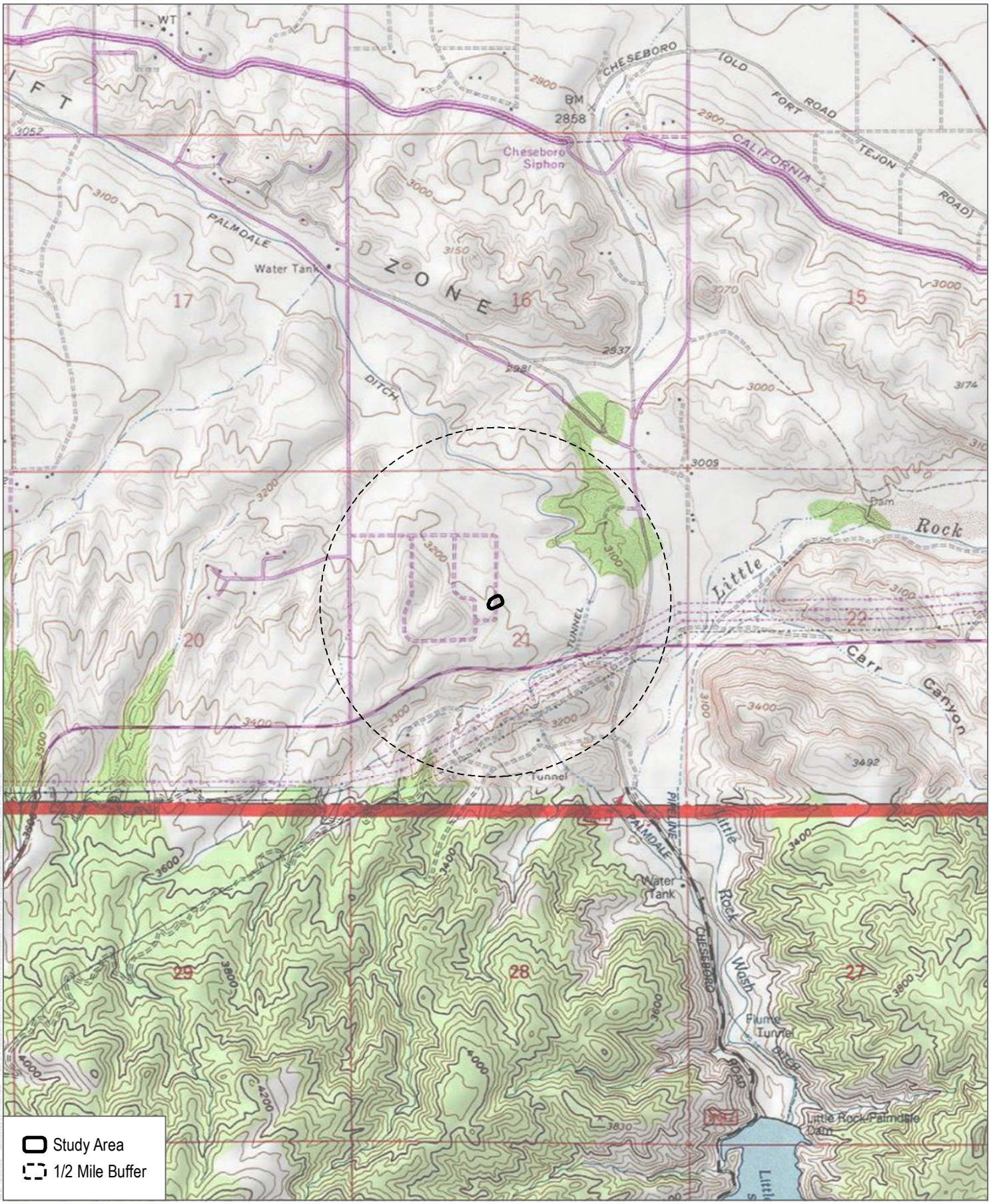
DUDEK

0 1,000 2,000 Feet
0 285 570 Meters
1:24,000

**Tower Span 33-2 - 33-3**

Records Search

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series Palmdale Quadrangle, Township 5N; Range 11W; Section 21

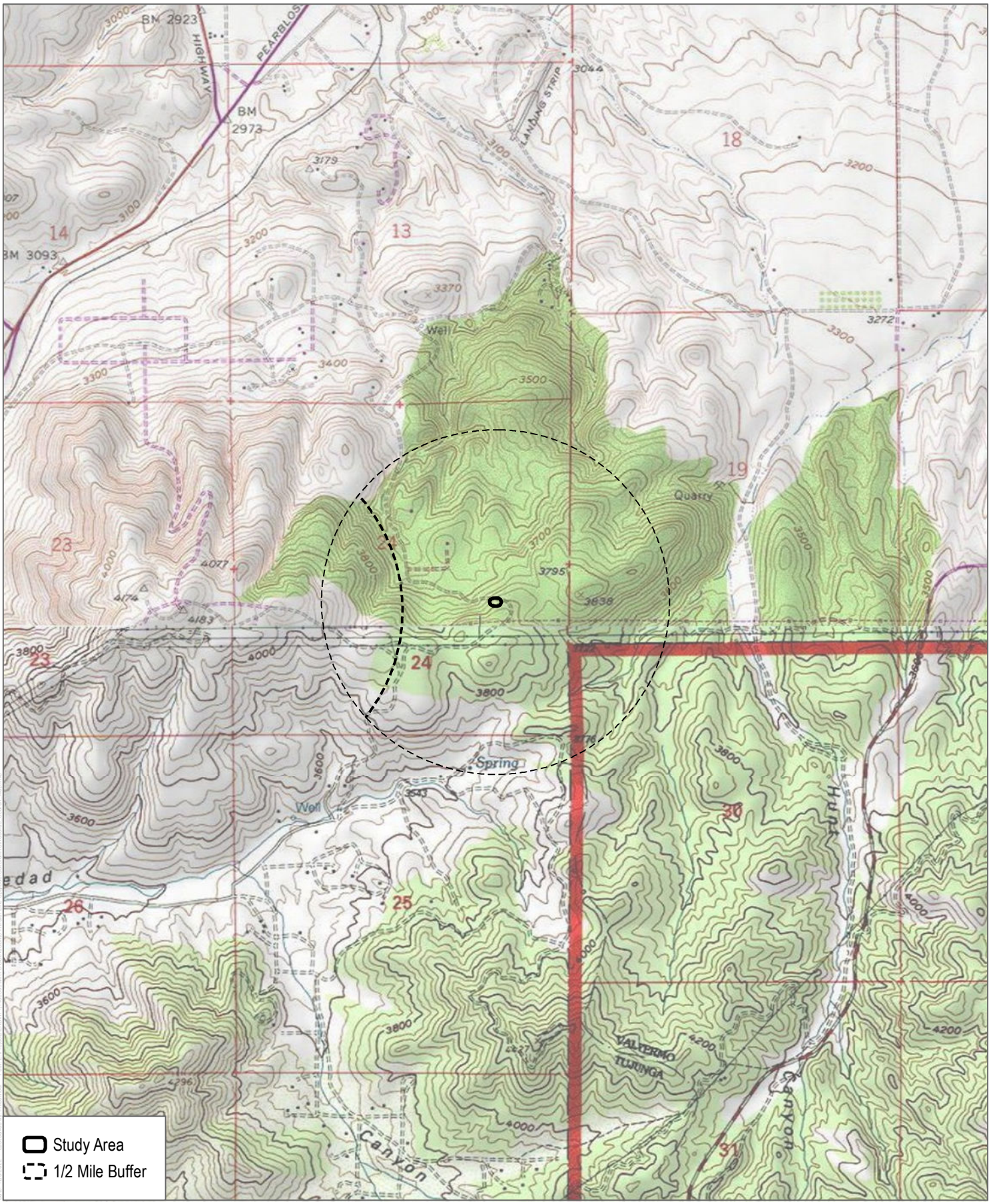
DUDEK

0 1,000 2,000 Feet
0 285 570 Meters
1:24,000

**Tower Span 35-2 - 35-3**

Records Search

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series Palmdale Quadrangle, Township 5N; Range 12W; Section 24

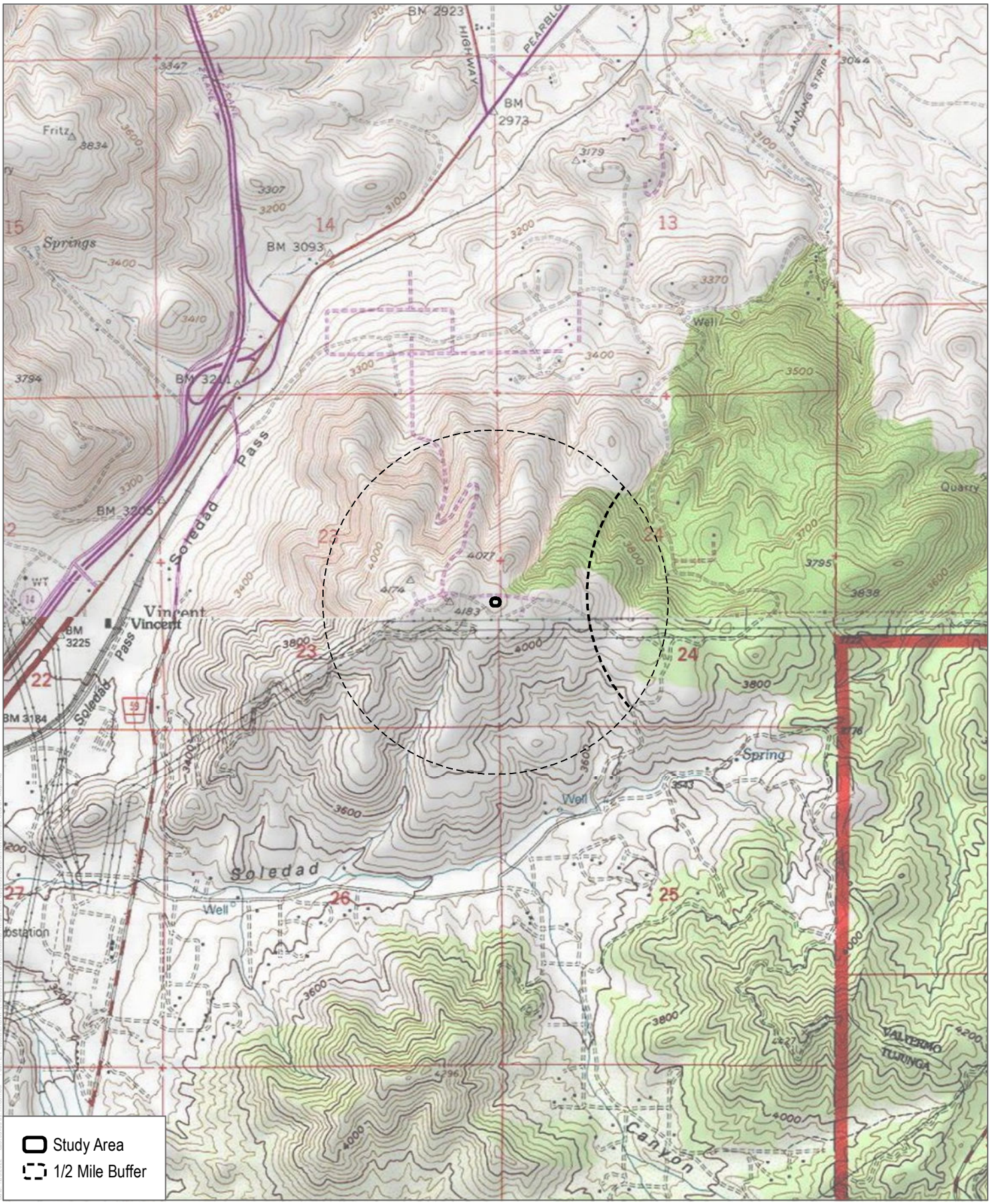
DUDEK

0 1,000 2,000 Feet
0 285 570 Meters
1:24,000

**Tower Span 38-1 - 38-2**

Records Search

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series Palmdale Quadrangle, Township 5N; Range 12W; Section 23

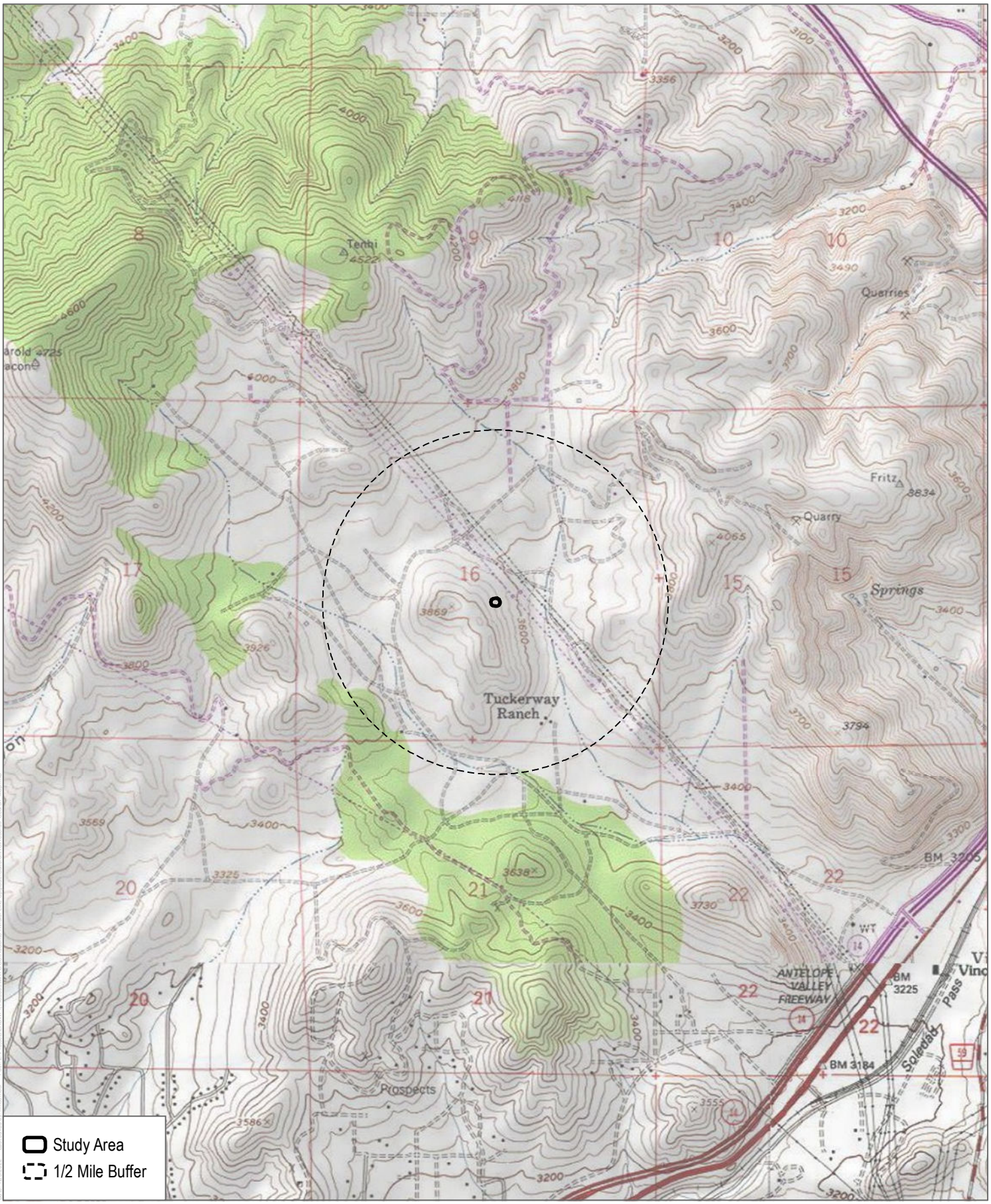
DUDEK

0 1,000 2,000 Feet
0 285 570 Meters
1:24,000

**Tower Span 38-4 - 39-1**

Records Search

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series Ritter Ridge Quadrangle, Township 5N; Range 12W; Section 16

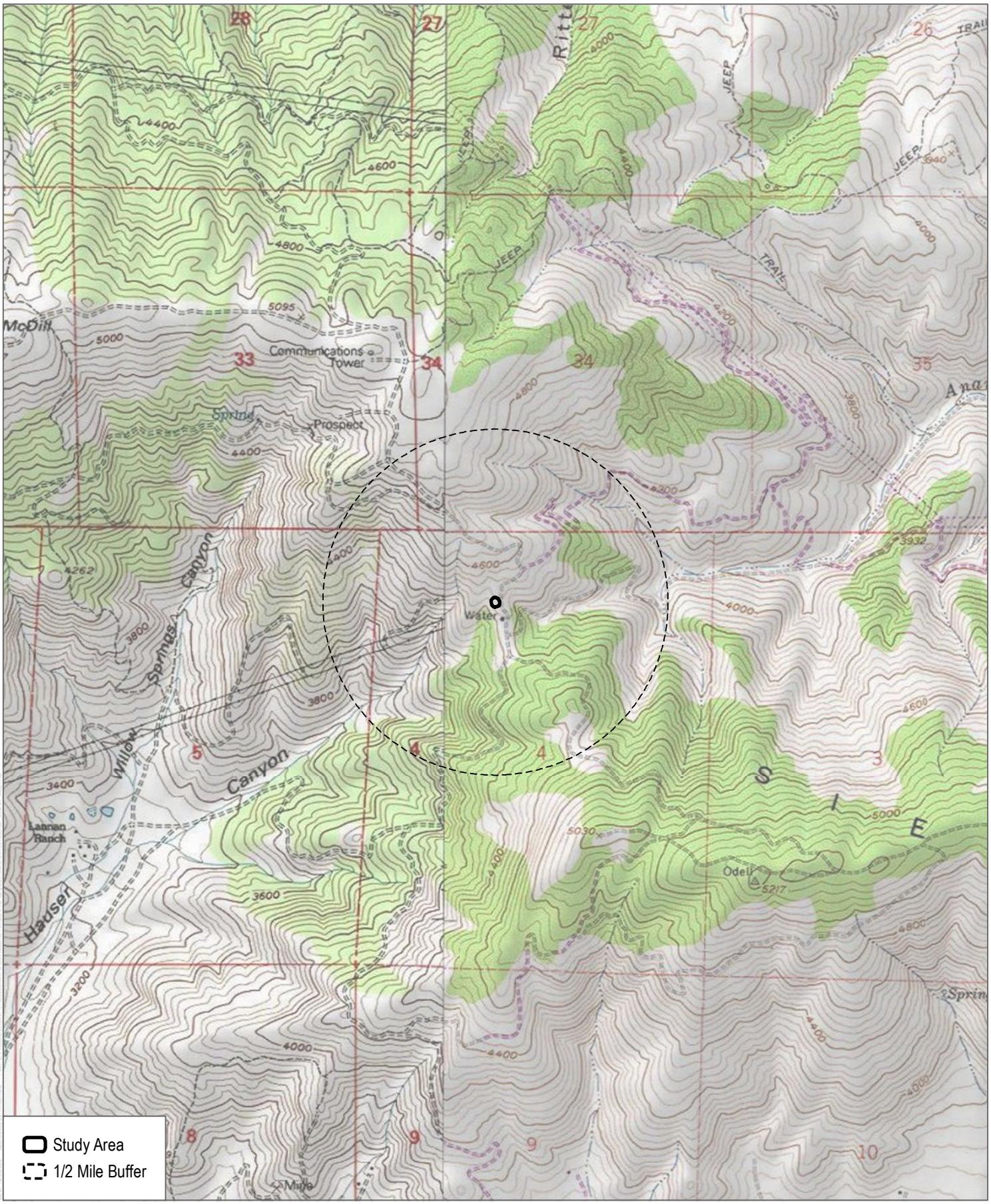
DUDEK

0 1,000 2,000 Feet
0 285 570 Meters
1:24,000

**Tower Span 41-3 - 41-4**

Records Search

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series Ritter Ridge Quadrangle, Township 5N; Range 13W; Section 04

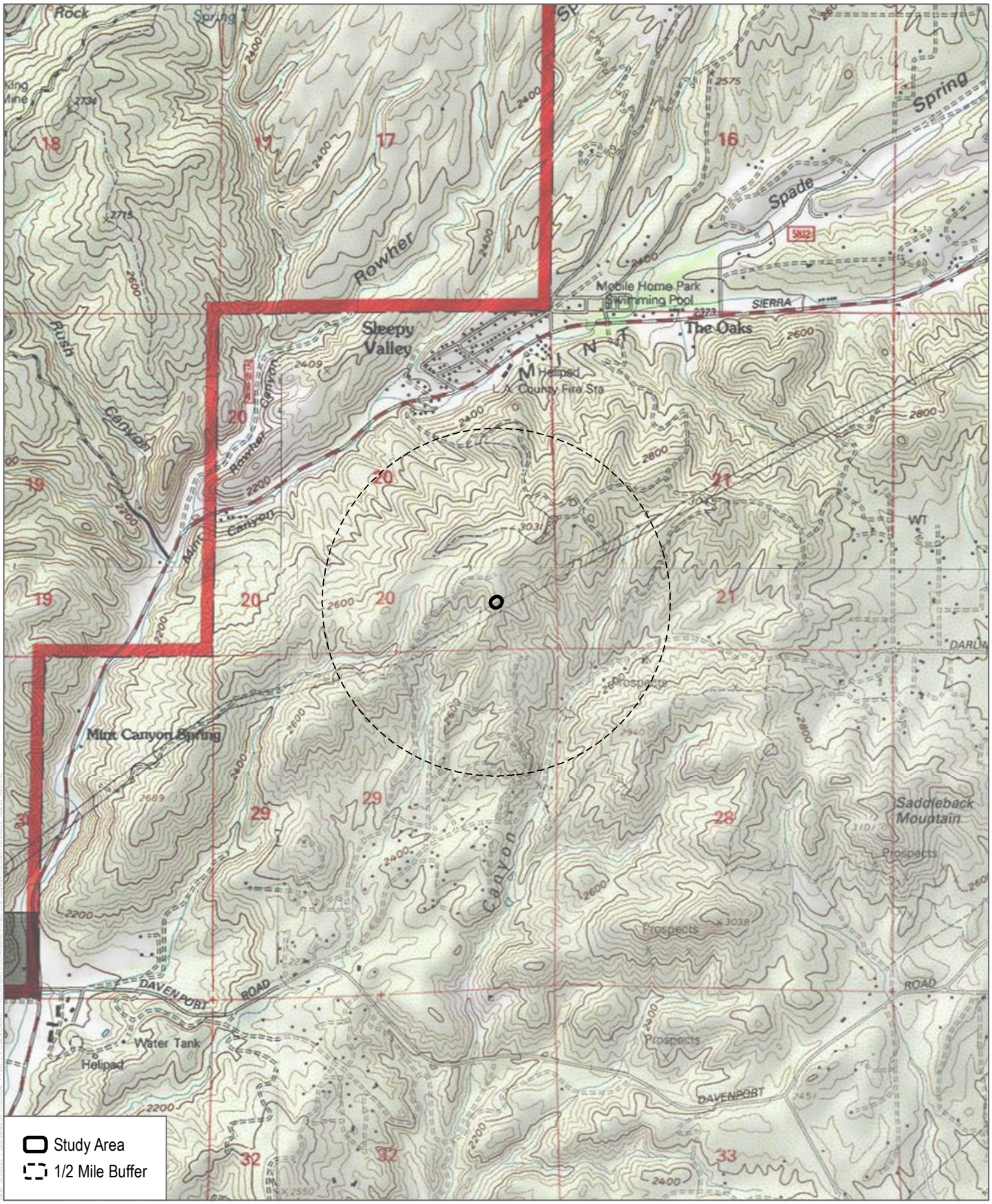
DUDEK

0 1,000 2,000 Feet
0 285 570 Meters
1:24,000

**Tower Span 49-2 - 49-3**

Records Search

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series Agua Dulce Quadrangle, Township 5N; Range 14W; Section 20

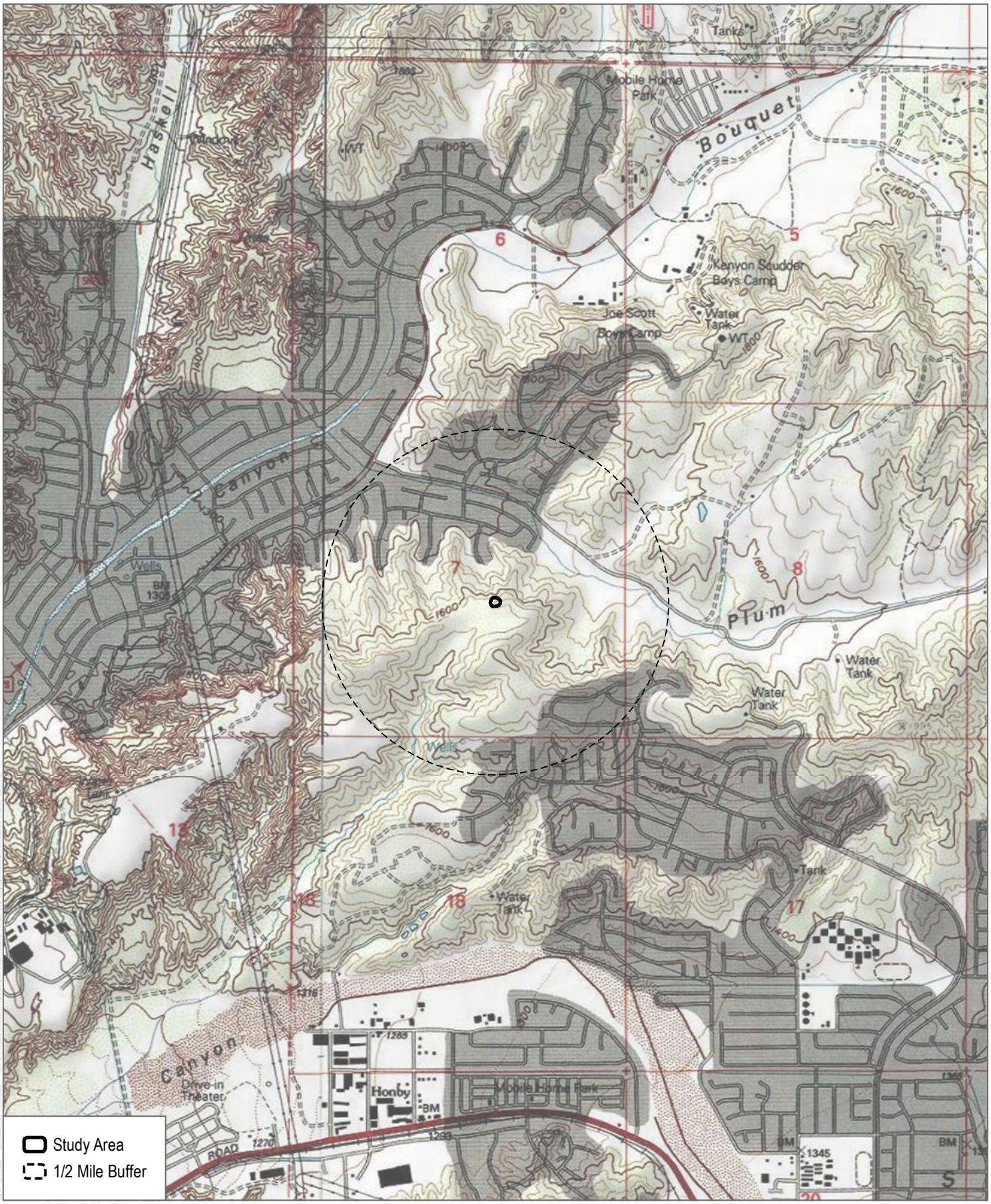
DUDEK

0 1,000 2,000 Feet
0 285 570 Meters
1:24,000

**Tower Span 57-1 - 57-2**

Records Search

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series Mint Canyon Quadrangle, Township 4N; Range 15W; Section 07

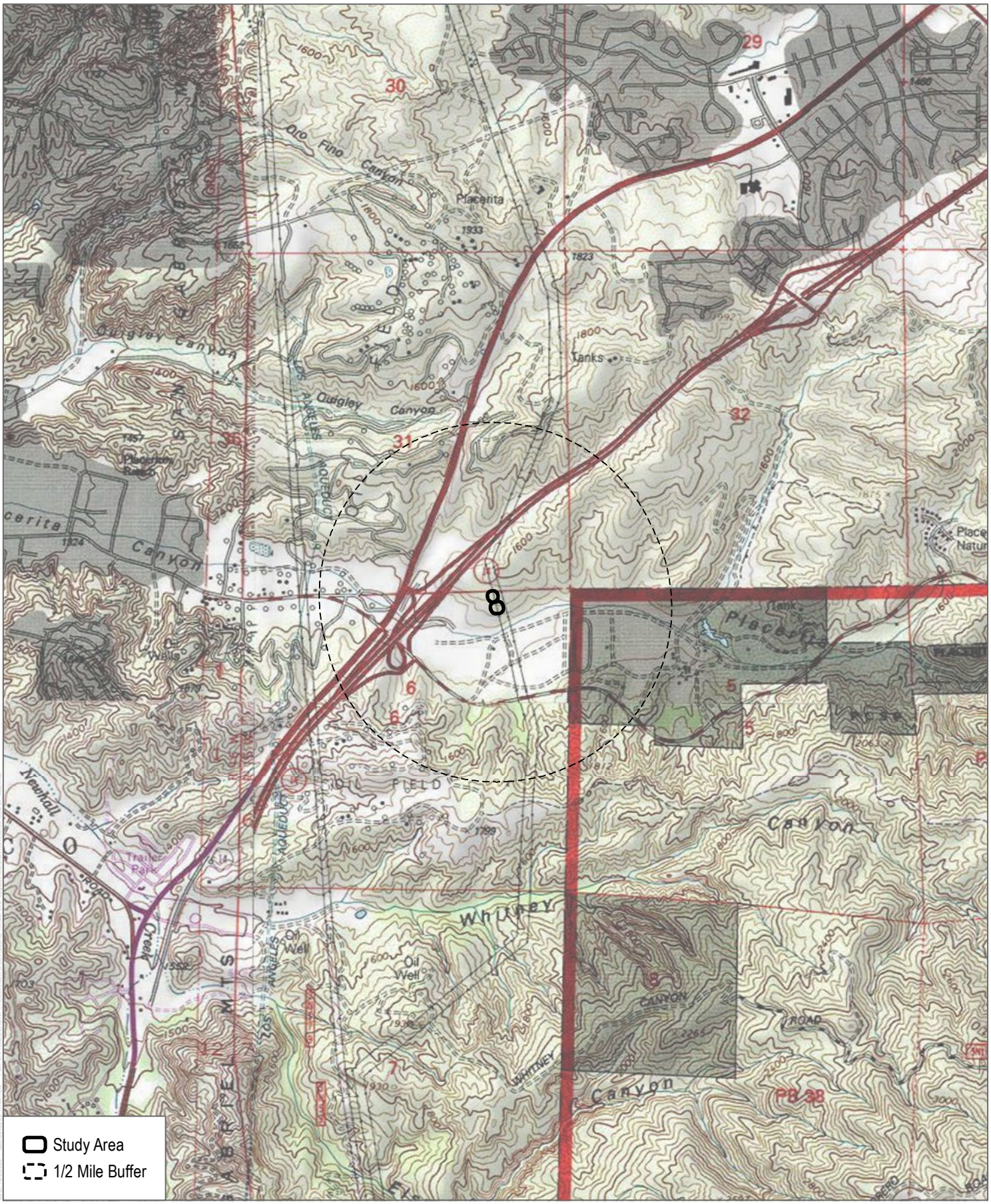
DUDEK

0 1,000 2,000 Feet
0 285 570 Meters
1:24,000

**Tower Span 65-4 - 66-1**

Records Search

LAWP Adelanto-Rinaldi Line Upgrade Project




SOURCE: USGS 7.5 Minute Series Mint Canyon Quadrangle, Township 3N; Range 15W; Section 06

DUDEK

0 1,000 2,000 Feet
0 285 570 Meters
1:24,000

**Tower Span 70-4 - 71-1**

Records Search

LAWP Adelanto-Rinaldi Line Upgrade Project

# NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
**Reginald Pagaling**
*Chumash*

VICE-CHAIRPERSON
**Buffy McQuillen**
*Yokayo Pomo, Yuki, Nomlaki*

SECRETARY
**Sara Dutschke**
*Miwok*

PARLIAMENTARIAN
**Wayne Nelson**
*Luiseño*

COMMISSIONER
**Isaac Bojorquez**
*Ohlone-Costanoan*

COMMISSIONER
**Stanley Rodriguez**
*Kumeyaay*

COMMISSIONER
**Laurena Bolden**
*Serrano*

COMMISSIONER
**Reid Milanovich**
*Cahuilla*

COMMISSIONER
**Vacant**

EXECUTIVE SECRETARY
**Raymond C. Hitchcock**
*Miwok, Nisenan*

**NAHC HEADQUARTERS**
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

March 1, 2024

Jennifer De Alba
Dudek

Via Email to: jdealba@dudek.com

**Re: 14553.09 Project, Los Angeles County**

To Whom It May Concern:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information submitted for the above referenced project. The results were positive. Please contact the Gabrieleno Band of Mission Indians – Kizh Nation on the attached list for information. Please note that tribes do not always record their sacred sites in the SLF, nor are they required to do so. A SLF search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with a project's geographic area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites, such as the appropriate regional California Historical Research Information System (CHRIS) archaeological Information Center for the presence of recorded archaeological sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. Please contact all of those listed; if they cannot supply information, they may recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
*Cultural Resources Analyst*

Attachment

**Native American Heritage Commission**
**Native American Contact List**
**Los Angeles County**
**3/1/2024**

| Tribe Name | F or N | Contact Person | Contact Address | Phone # | Email Address | Cultural Affiliation | Counties | Last Updated |
|---|---|---|---|---|---|---|---|---|
| Barbareño/Ventureño Band of Mission Indians | N | Cultural Resource Committee, | P.O. Box 364 Ojai, CA, 93024 | (805) 746-6685 | CR@bvbmi.com | Chumash | Los Angeles, San Luis Obispo, Santa Barbara, Ventura | 6/19/2023 |
| Chumash Council of Bakersfield | N | Julio Quair, Chairperson | 729 Texas Street Bakersfield, CA, 93307 | (661) 322-0121 | chumashtribe@sbcglobal.net | Chumash | Kern, Los Angeles, San Luis Obispo, Santa Barbara, Ventura | |
| Coastal Band of the Chumash Nation | N | Gabe Frausto, Chairman | P.O. Box 40653 Santa Barbara, CA, 93140 | (805) 568-8063 | fraustogabriel28@gmail.com | Chumash | Kern, Los Angeles, San Luis Obispo, Santa Barbara, Ventura | 8/28/2023 |
| Fernandeno Tataviam Band of Mission Indians | N | Sarah Brunzell, CRM Manager | 1019 Second Street San Fernando, CA, 91340 | (818) 837-0794 | CRM@tataviam-nsn.us | Tataviam | Kern, Los Angeles, Ventura | 5/25/2023 |
| Gabrieleno Band of Mission Indians - Kizh Nation | N | Christina Swindall Martinez, Secretary | P.O. Box 393 Covina, CA, 91723 | (844) 390-0787 | admin@gabrielenoindians.org | Gabrieleno | Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, Ventura | 8/18/2023 |
| Gabrieleno Band of Mission Indians - Kizh Nation | N | Andrew Salas, Chairperson | P.O. Box 393 Covina, CA, 91723 | (844) 390-0787 | admin@gabrielenoindians.org | Gabrieleno | Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, Ventura | 8/18/2023 |
| Gabrieleno/Tongva San Gabriel Band of Mission Indians | N | Anthony Morales, Chairperson | P.O. Box 693 San Gabriel, CA, 91778 | (626) 483-3564 | GTTribalcouncil@aol.com | Gabrieleno | Los Angeles, Orange, Riverside, San Bernardino, Ventura | 12/4/2023 |
| Gabrielino /Tongva Nation | N | Sandonne Goad, Chairperson | 106 1/2 Judge John Aiso St., #231 Los Angeles, CA, 90012 | (951) 807-0479 | sgoad@gabrielino-tongva.com | Gabrielino | Los Angeles, Orange, Riverside, San Bernardino, Ventura | 3/28/2023 |
| Gabrielino Tongva Indians of California Tribal Council | N | Robert Dorame, Chairperson | P.O. Box 490 Bellflower, CA, 90707 | (562) 761-6417 | gtongva@gmail.com | Gabrielino | Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, Ventura | 3/16/2023 |
| Gabrielino Tongva Indians of California Tribal Council | N | Christina Conley, Cultural | P.O. Box 941078 Simi Valley, CA, 93094 | (626) 407-8761 | christina.marsden@alumni.usc.edu | Gabrielino | Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, Ventura | 3/16/2023 |

| Tribe Name | F or N | Contact Person | Contact Address | Phone # | Email Address | Cultural Affiliation | Counties | Last Updated |
|---|---|---|---|---|---|---|---|---|
| | | Resource Administrator | | | | | | |
| Gabrielino-Tongva Tribe | N | Sam Dunlap, Cultural Resource Director | P.O. Box 3919 Seal Beach, CA, 90740 | (909) 262-9351 | tongvatcr@gmail.com | Gabrielino | Los Angeles, Orange, Riverside, San Bernardino, Ventura | 5/30/2023 |
| Gabrielino-Tongva Tribe | N | Charles Alvarez, Chairperson | 23454 Vanowen Street West Hills, CA, 91307 | (310) 403-6048 | Chavez1956metro@gmail.com | Gabrielino | Los Angeles, Orange, Riverside, San Bernardino, Ventura | 5/30/2023 |
| Morongo Band of Mission Indians | F | Robert Martin, Chairperson | 12700 Pumarra Road Banning, CA, 92220 | (951) 755-5110 | abrierty@morongo-nsn.gov | Cahuilla Serrano | Imperial, Los Angeles, Riverside, San Bernardino, San Diego | |
| Morongo Band of Mission Indians | F | Ann Brierty, THPO | 12700 Pumarra Road Banning, CA, 92220 | (951) 755-5259 | abrierty@morongo-nsn.gov | Cahuilla Serrano | Imperial, Los Angeles, Riverside, San Bernardino, San Diego | |
| Northern Chumash Tribal Council | N | Violet Walker, Chairperson | P.O. Box 6533 Los Osos, CA, 93412 | (760) 549-3532 | violetsagewalker@gmail.com | Chumash | Kern, Los Angeles, San Luis Obispo, Santa Barbara, Ventura | 6/5/2023 |
| Quechan Tribe of the Fort Yuma Reservation | F | Manfred Scott, Acting Chairman - Kw'ts'an Cultural Committee | P.O. Box 1899 Yuma, AZ, 85366 | (928) 210-8739 | culturalcommittee@quechantribe.com | Quechan | Imperial, Kern, Los Angeles, Riverside, San Bernardino, San Diego | 5/16/2023 |
| Quechan Tribe of the Fort Yuma Reservation | F | Jordan Joaquin, President, Quechan Tribal Council | P.O.Box 1899 Yuma, AZ, 85366 | (760) 919-3600 | executivesecretary@quechantribe.com | Quechan | Imperial, Kern, Los Angeles, Riverside, San Bernardino, San Diego | 5/16/2023 |
| Quechan Tribe of the Fort Yuma Reservation | F | Jill McCormick, Historic Preservation Officer | P.O. Box 1899 Yuma, AZ, 85366 | (928) 261-0254 | historicpreservation@quechantribe.com | Quechan | Imperial, Kern, Los Angeles, Riverside, San Bernardino, San Diego | 5/16/2023 |
| San Fernando Band of Mission Indians | N | Donna Yocum, Chairperson | P.O. Box 221838 Newhall, CA, 91322 | (503) 539-0933 | dyocum@sfbmi.org | Kitanemuk Vanyume Tataviam | Kern, Los Angeles, San Bernardino, Ventura | 5/8/2023 |
| San Manuel Band of Mission Indians | F | Alexandra McCleary, Senior Manager of Cultural | 26569 Community Center Drive Highland, CA, 92346 | (909) 633-0054 | alexandra.mccleary@sanmanuel-nsn.gov | Serrano | Kern, Los Angeles, Riverside, San Bernardino | 1/16/2024 |

| Tribe Name | F or N | Contact Person | Contact Address | Phone # | Email Address | Cultural Affiliation | Counties | Last Updated |
|---|---|---|---|---|---|---|---|---|
| | | Resources Management | | | | | | |
| Santa Rosa Band of Cahuilla Indians | F | Lovina Redner, Tribal Chair | P.O. Box 391820 Anza, CA, 92539 | (951) 659-2700 | lsaul@santarosa-nsn.gov | Cahuilla | Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego | |
| Santa Ynez Band of Chumash Indians | F | Nakia Zavalla, Tribal Historic Preservation Officer | 100 Via Juana Road Santa Ynez, CA, 93460 | | nzavalla@chumash.gov | Chumash | Kern, Los Angeles, San Luis Obispo, Santa Barbara, Ventura | 7/6/2023 |
| Santa Ynez Band of Chumash Indians | F | Wendy Teeter, Cultural Resources Archaeologist | 100 Via Juana Road Santa Ynez, CA, 93460 | (805) 325-8630 | wteeter@chumash.gov | Chumash | Kern, Los Angeles, San Luis Obispo, Santa Barbara, Ventura | 7/6/2023 |
| Santa Ynez Band of Chumash Indians | F | Sam Cohen, Government & Legal Affairs Director | 100 Via Juana Road Santa Ynez, CA, 93460 | | scohen@chumash.gov | Chumash | Kern, Los Angeles, San Luis Obispo, Santa Barbara, Ventura | 7/6/2023 |
| Santa Ynez Band of Chumash Indians | F | Kelsie Mendoza, Elders' Council Administrative Assistant | 100 Via Juana Road Santa Ynez, CA, 93460 | (805) 325-5537 | cmendoza@chumash.gov | Chumash | Kern, Los Angeles, San Luis Obispo, Santa Barbara, Ventura | 2/27/2024 |
| Serrano Nation of Mission Indians | N | Mark Cochrane, Co-Chairperson | P. O. Box 343 Patton, CA, 92369 | (909) 578-2598 | serranonation1@gmail.com | Serrano | Los Angeles, Riverside, San Bernardino | 10/10/2023 |
| Serrano Nation of Mission Indians | N | Wayne Walker, Co-Chairperson | P. O. Box 343 Patton, CA, 92369 | (253) 370-0167 | serranonation1@gmail.com | Serrano | Los Angeles, Riverside, San Bernardino | 10/10/2023 |
| Soboba Band of Luiseno Indians | F | Joseph Ontiveros, Tribal Historic Preservation Officer | P.O. Box 487 San Jacinto, CA, 92581 | (951) 663-5279 | jontiveros@soboba-nsn.gov | Cahuilla Luiseno | Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego | 7/14/2023 |
| Soboba Band of Luiseno Indians | F | Jessica Valdez, Cultural Resource Specialist | P.O. Box 487 San Jacinto, CA, 92581 | (951) 663-6261 | jvaldez@soboba-nsn.gov | Cahuilla Luiseno | Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego | 7/14/2023 |
| Soboba Band of Luiseno Indians | F | Isaiah Vivanco, Chairperson | P.O. Box 487 San Jacinto, CA, 92581 | (951) 654-5544 | ivivanco@soboba-nsn.com | Cahuilla Luiseno | Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego | 7/14/2023 |

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 14553.09 Project, Los Angeles County.

# Appendix C

CONFIDENTIAL Department of Parks and Recreation 523 Form