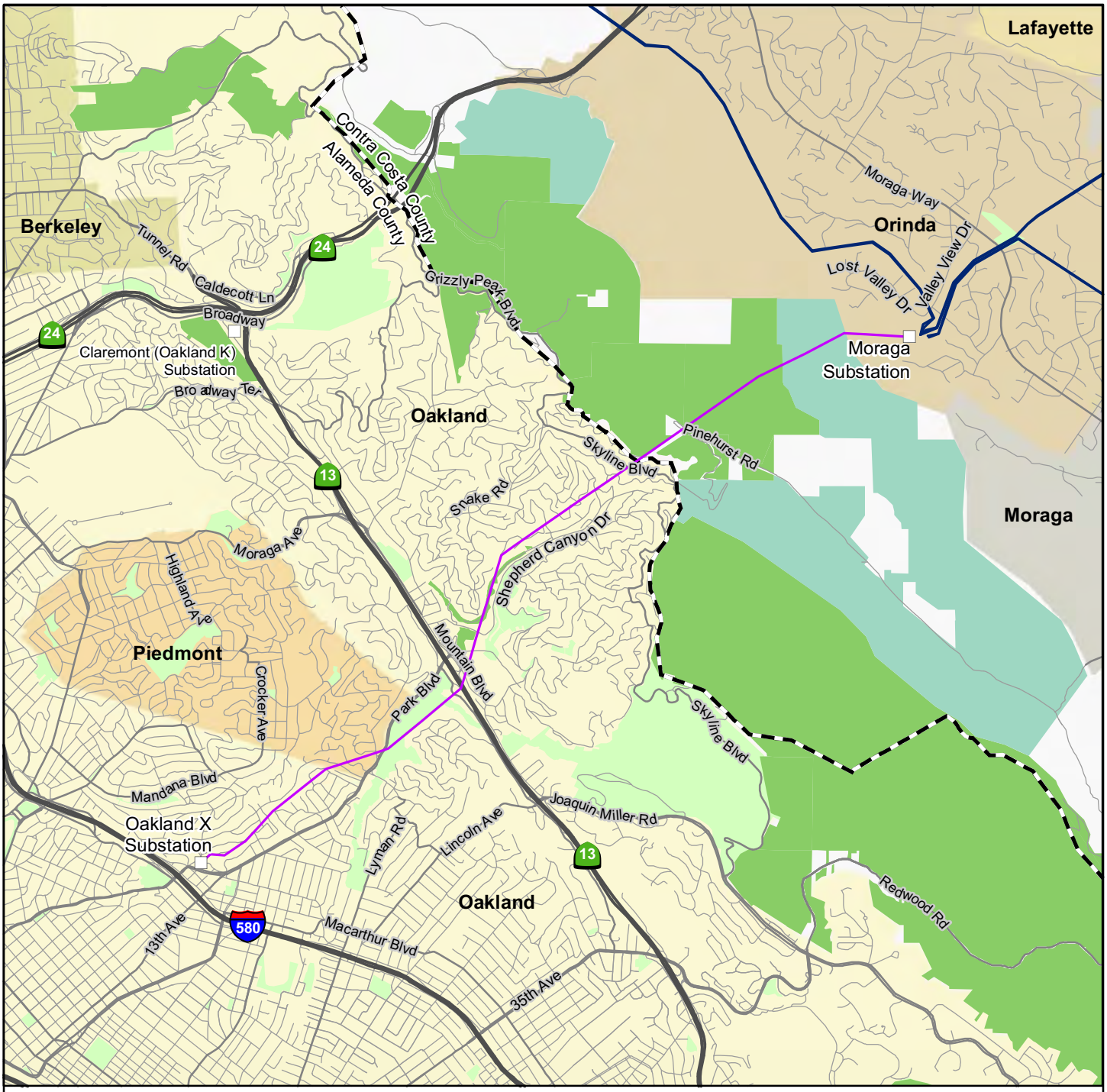
Appendix A

FIGURES AND MAPS



Source: PG&E

- Substation
- Four Existing Moraga-Oakland X 115 kV Lines to be Rebuilt
- Existing 230 kV Transmission Line
- State Route/Highway
- Arterial
- Local Street
- East Bay Regional Park District
- EBMUD Property
- Other Park or Recreation Area

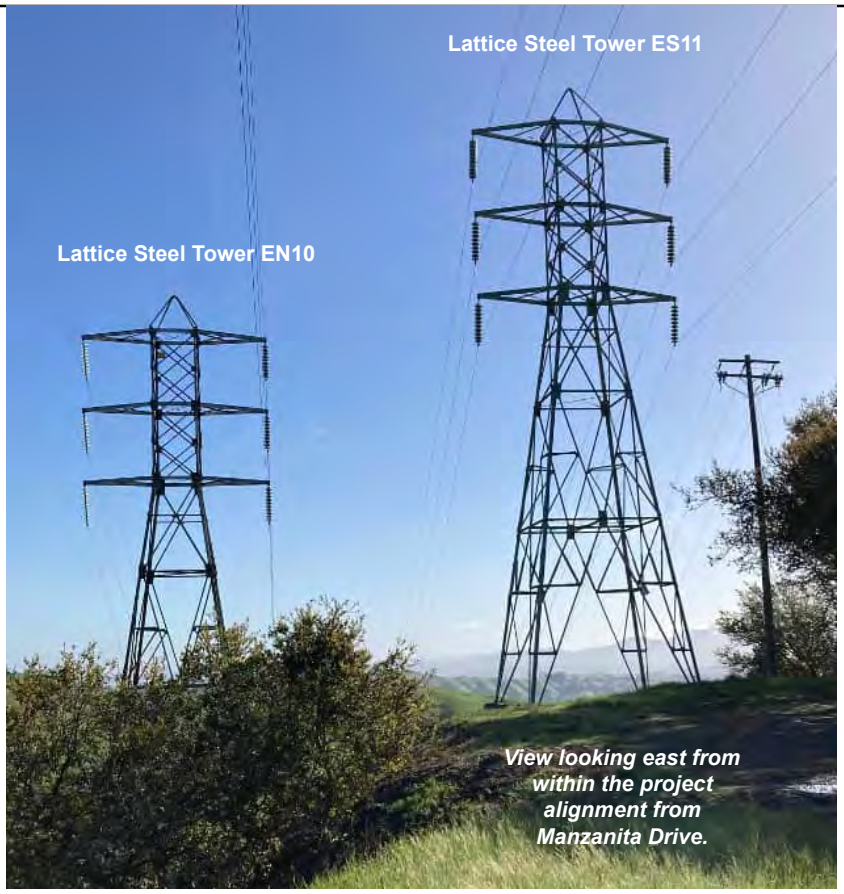
- County Boundary
- City of Berkeley
- City of Moraga
- City of Lafayette
- City of Oakland
- City of Orinda
- City of Piedmont

0 0.5 1
Miles

N

Figure 2.1-1a

Overview with Existing Lines



Source: PG&E

Figure 2.1-1b Existing Lattice Steel Towers, Tubular Steel Pole, and Lattice Steel Pole

View looking southwest from within the project alignment from Manzanita Drive.

Tubular steel pole in view is galvanized steel.

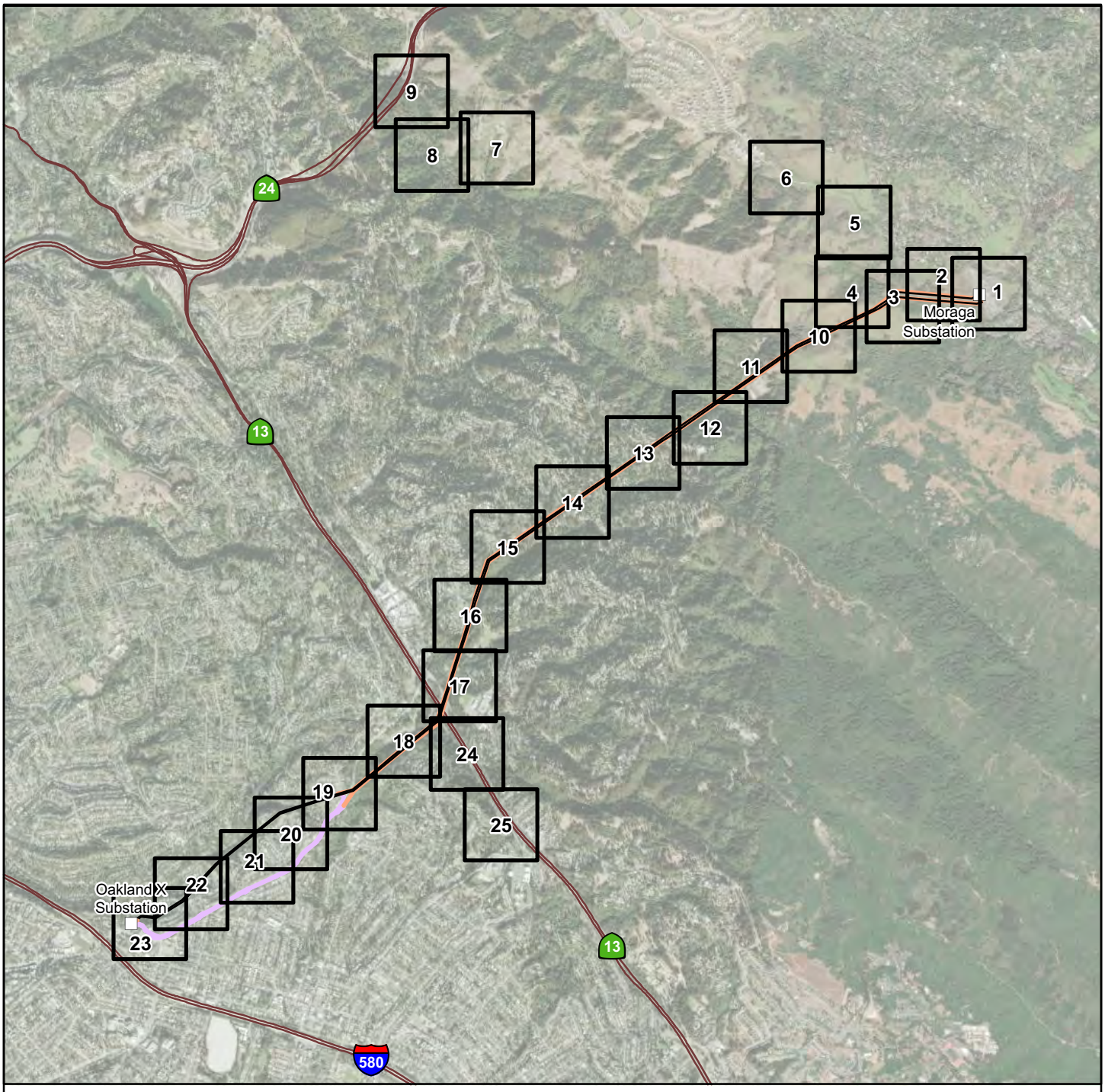
View looking southwest from within the project alignment from Montclair Railroad Trail.

Tubular steel poles in view are Corten steel.

Source: PG&E

Figure 2.1-1c

Existing Tubular Steel Pole Types



Source: PG&E

Detail Map Sheet

Substation

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

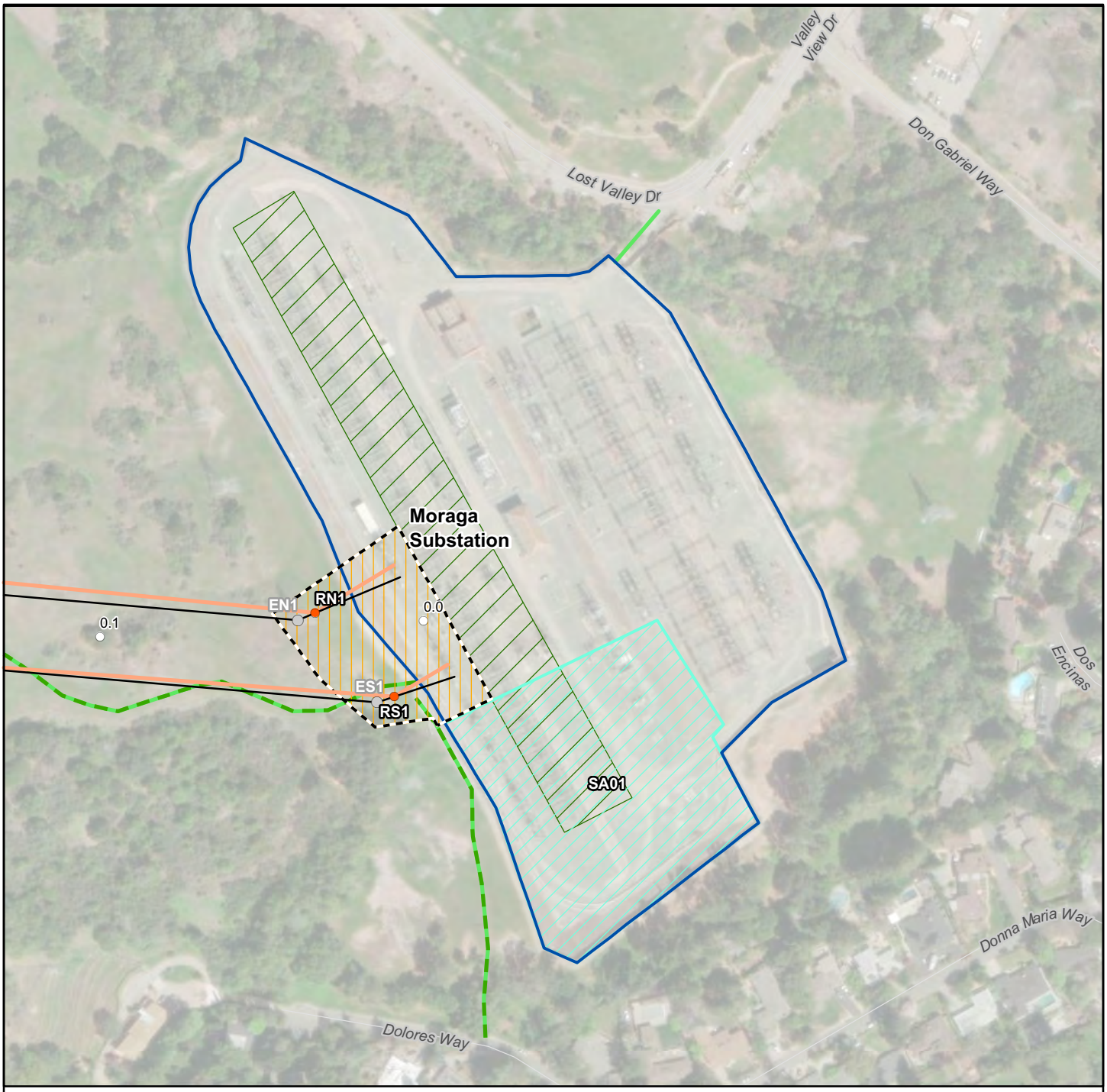
N

0 0.5 1

Miles

Figure 2.1-2

Proposed Project - Detail Overview



Source: PG&E

Access
- Existing
- Improvement

Temporary Work Areas
- Moraga Substation 115 kV Breaker Work Area
- Staging Area
- Substation Work Area
- Tension Pull Site
- Work Area

N

0 250 500
Feet

- Milepost

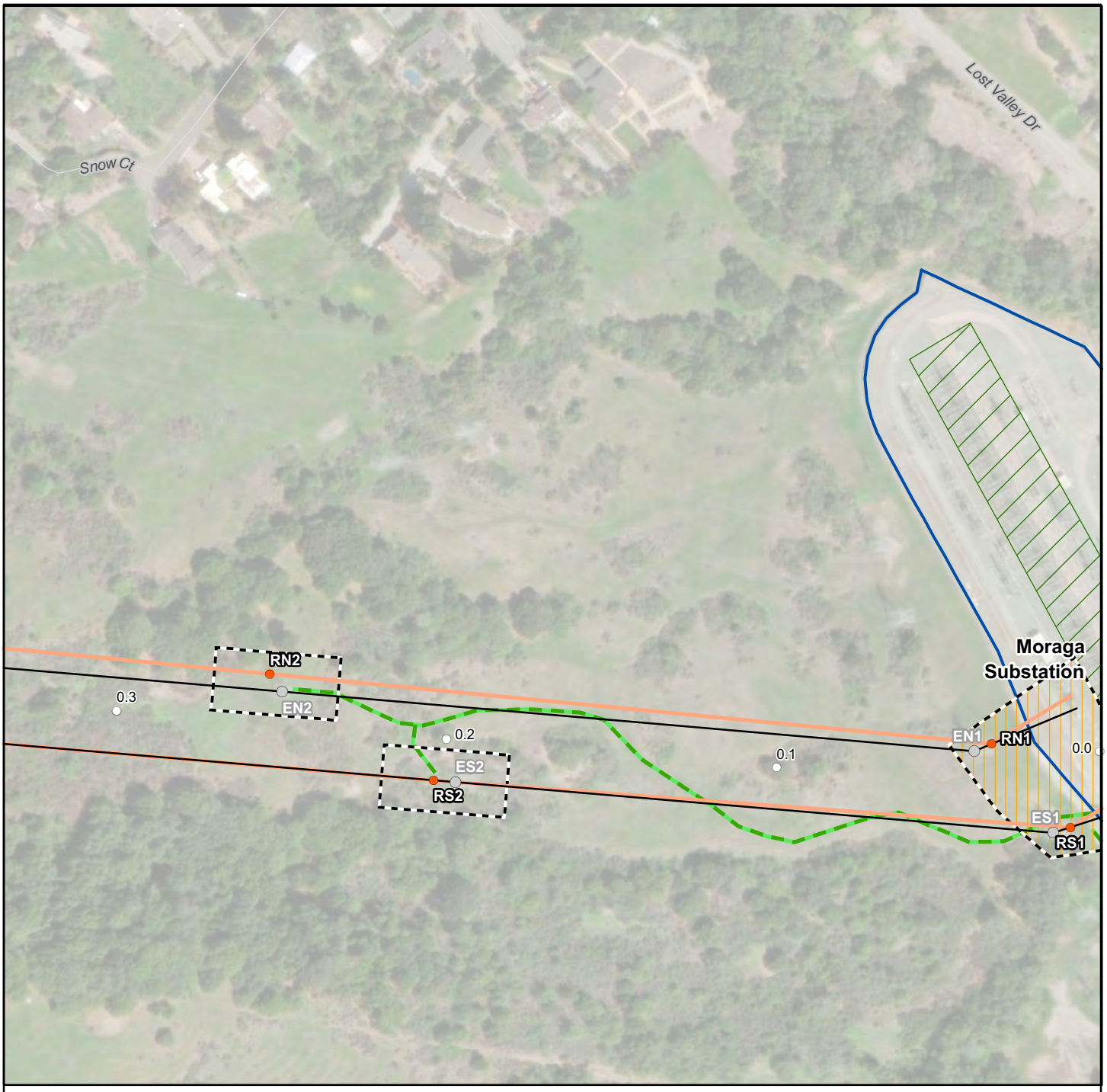
Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 1 of 25



Source: PG&E

Access
- Improvement

Temporary Work Areas
- Moraga Substation 115 kV Breaker Work Area
- Substation Work Area
- Tension Pull Site
- Work Area

N

0 250 500
Feet

- Milepost

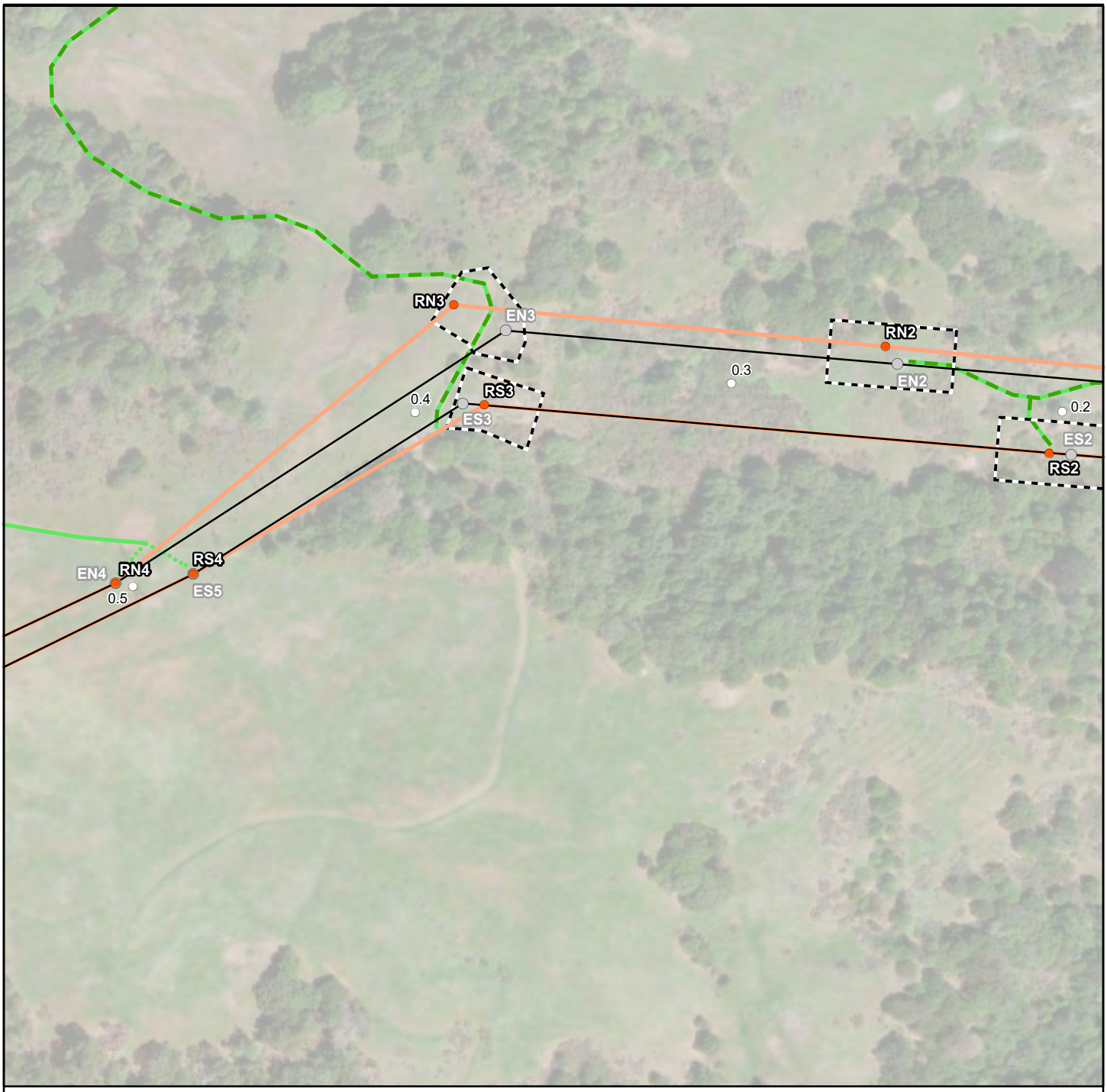
Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 2 of 25



Source: PG&E

Access
- Existing
- Improvement
- Walk-in

Temporary Work Areas
- Work Area

N

0 250 500
Feet

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 3 of 25

Source: PG&E

Access
- Existing
- Improvement
- Walk-in

Temporary Work Areas
- Landing Zone/ Staging Area

N

0 250 500
Feet

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 4 of 25

Source: PG&E

Access
- Existing
- Improvement

Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

N

0 250 500
Feet

Figure 2.1-2

Proposed Project - Detail Map 5 of 25

Source: PG&E

Access
- Existing

Temporary Work Areas
- Landing Zone/ Staging Area

N

0 250 500
Feet

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 6 of 25

Source: PG&E

Access
- Existing

Temporary Work Areas
- Landing Zone/ Staging Area

N

0 250 500
Feet

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 7 of 25

Source: PG&E

Access
- Existing

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

N

0 250 500
Feet

Figure 2.1-2

Proposed Project - Detail Map 8 of 25

Source: PG&E

Access
- Existing

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

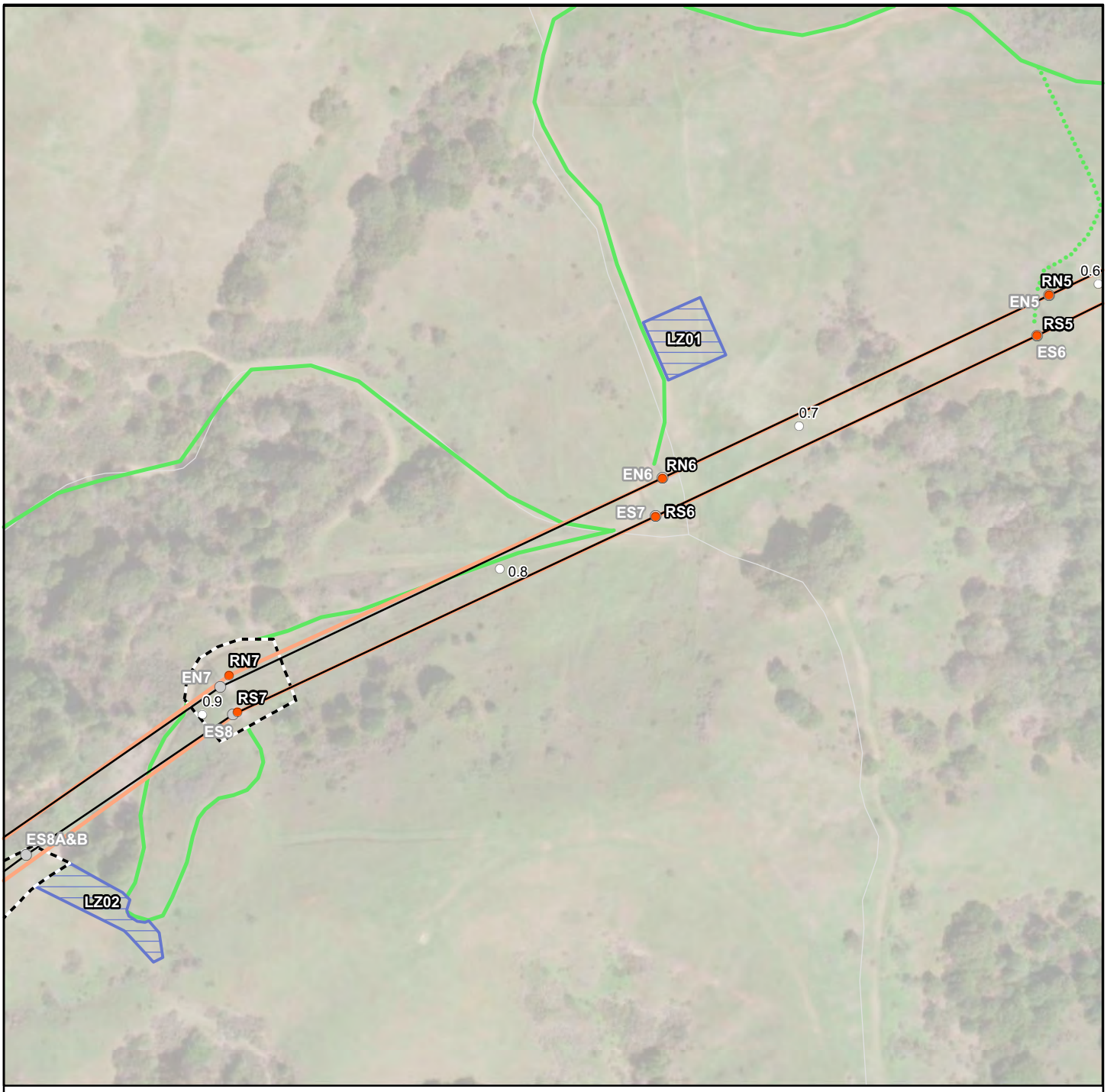
Underground Routes
- Proposed

N

0 250 500
Feet

Figure 2.1-2

Proposed Project - Detail Map 9 of 25



Source: PG&E

Access
- Existing
- Walk-in

Temporary Work Areas
- Landing Zone/ Staging Area
- Work Area

N

0 250 500
Feet

- Milepost

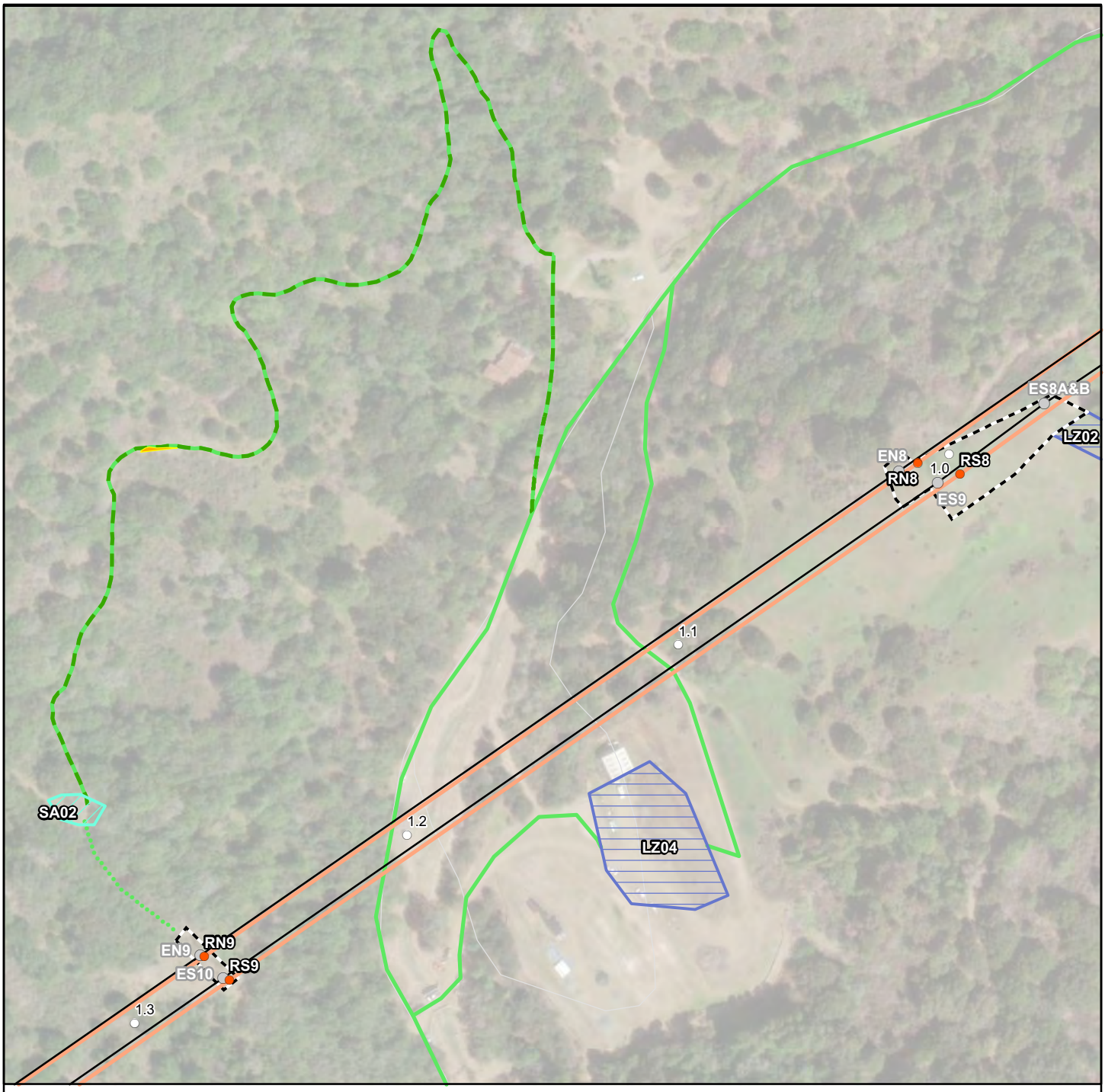
Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 10 of 25



Source: PG&E

Access
- Existing
- Improvement
- Walk-In

Temporary Work Areas
- Landing Zone/ Staging Area
- Road Repair
- Staging Area
- Work Area

N

0 250 500
Feet

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 11 of 25

Source: PG&E

Access
- Existing

Temporary Work Areas
- Staging Area
- Work Area

N

0 250 500
Feet

- Milepost

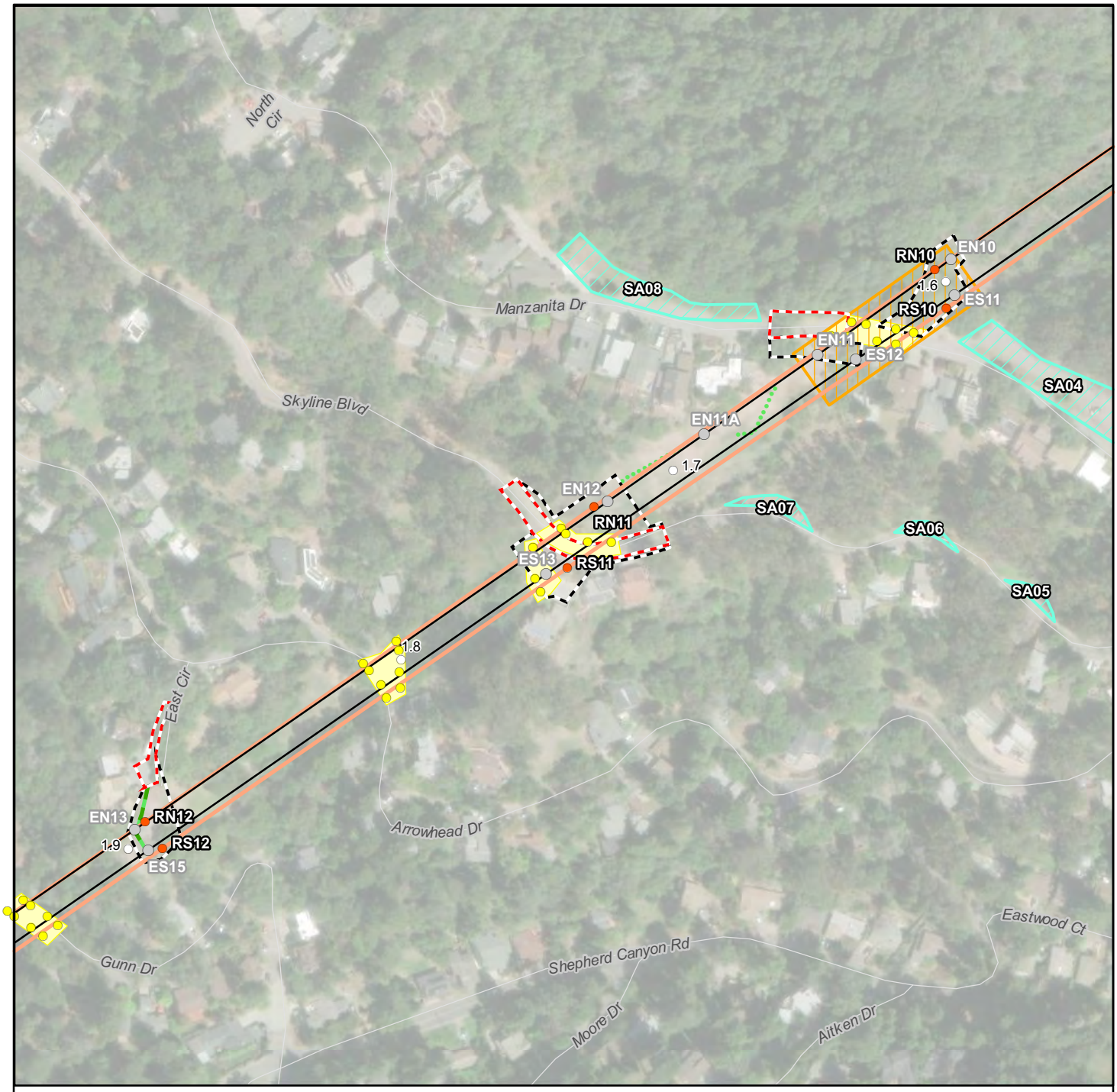
Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 12 of 25



Source: PG&E

Access
- Improvement
- Walk-In

Temporary Work Areas
- Guard Poles
- Staging Area
- Tension Pull Site
- Work Area
- Work Area, Temporary Closure

N

0 250 500
Feet

- Milepost

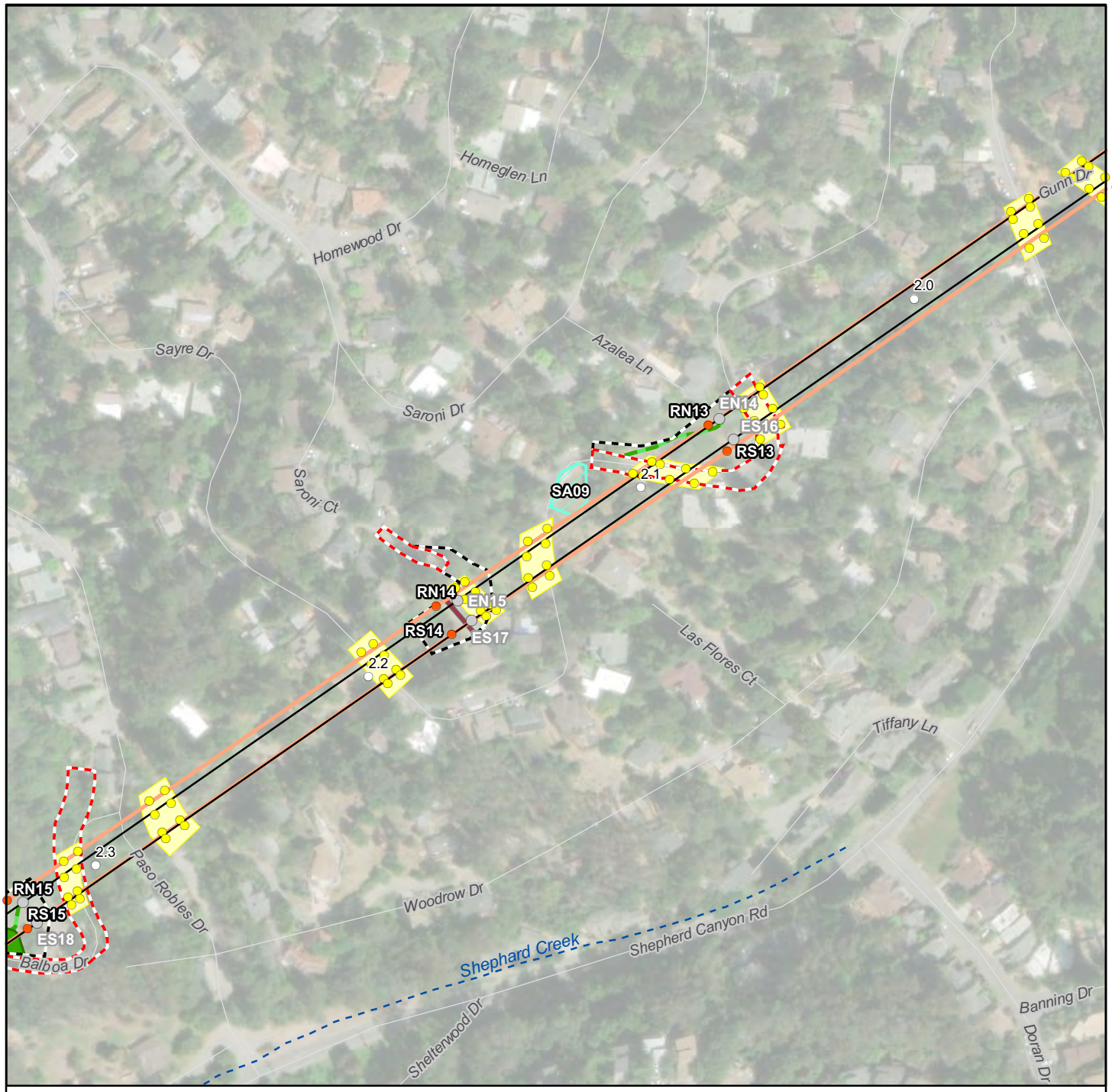
Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 13 of 25



Source: PG&E

Access
- Improvement

Temporary Work Areas
- Fence Removal/Replacement
- Guard Poles
- Staging Area
- Work Area
- Work Area, Temporary Closure
- Veg Work/Tree Removal

N

0 250 500
Feet

- Milepost

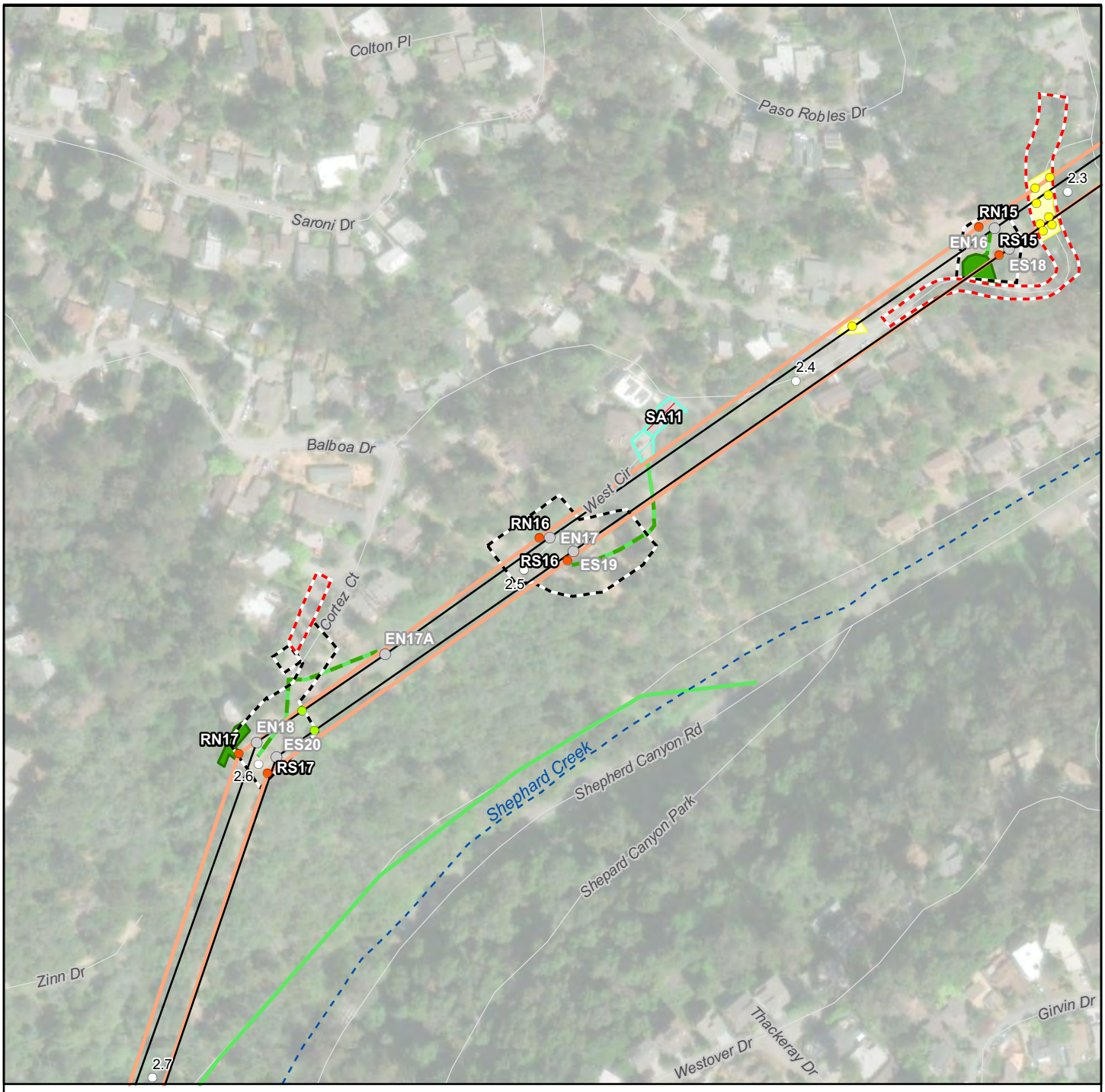
Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 14 of 25



Source: PG&E

Access
- Existing
- Improvement

Temporary Work Areas
- Guard Poles
- Staging Area
- Staging Area, Temporary Closure
- Work Area
- Work Area, Temporary Closure
- Veg Work/Tree Removal

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

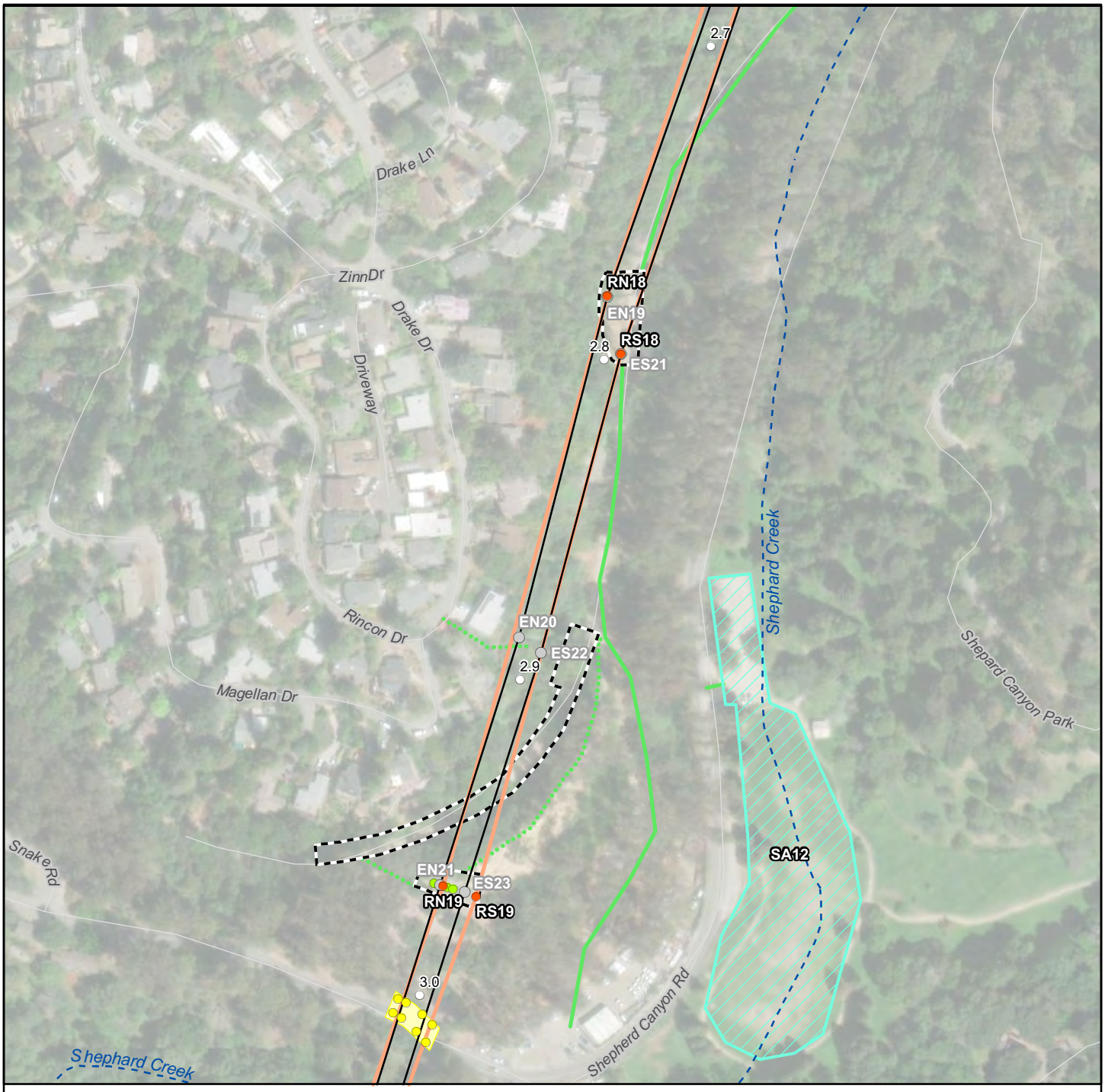
Underground Routes
- Proposed

N

0 250 500
Feet

Figure 2.1-2

Proposed Project - Detail Map 15 of 25



Source: PG&E

Access
- Existing
- Walk-In

Temporary Work Areas
- Guard Poles
- Staging Area
- Work Area

N

0 250 500
Feet

- Milepost

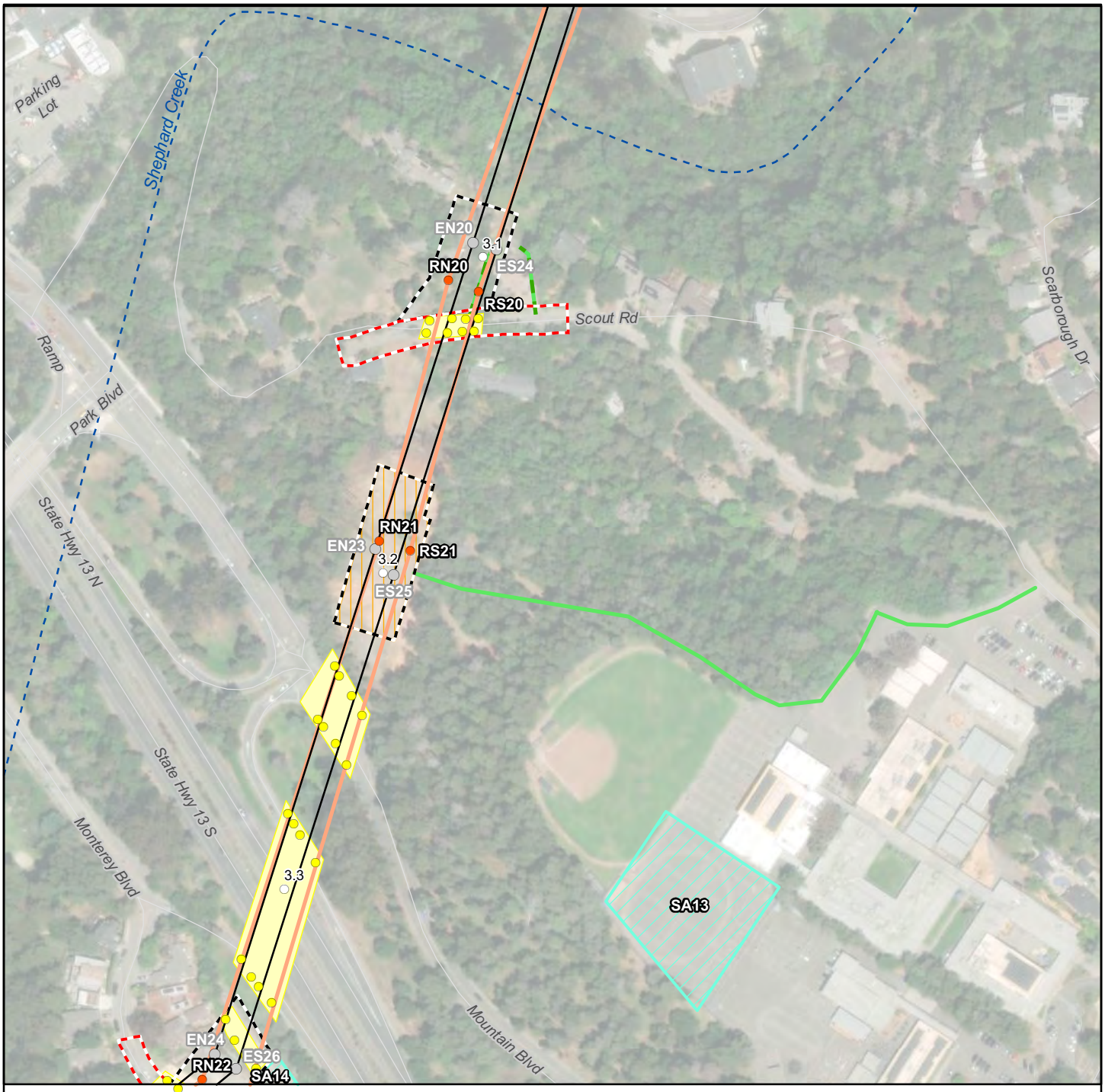
Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 16 of 25



Source: PG&E

Access
- Existing
- Improvement

Temporary Work Areas
- Guard Poles
- Staging Area
- Tension Pull Site
- Work Area
- Work Area, Temporary Closure

N

0 250 500
Feet

- Milepost

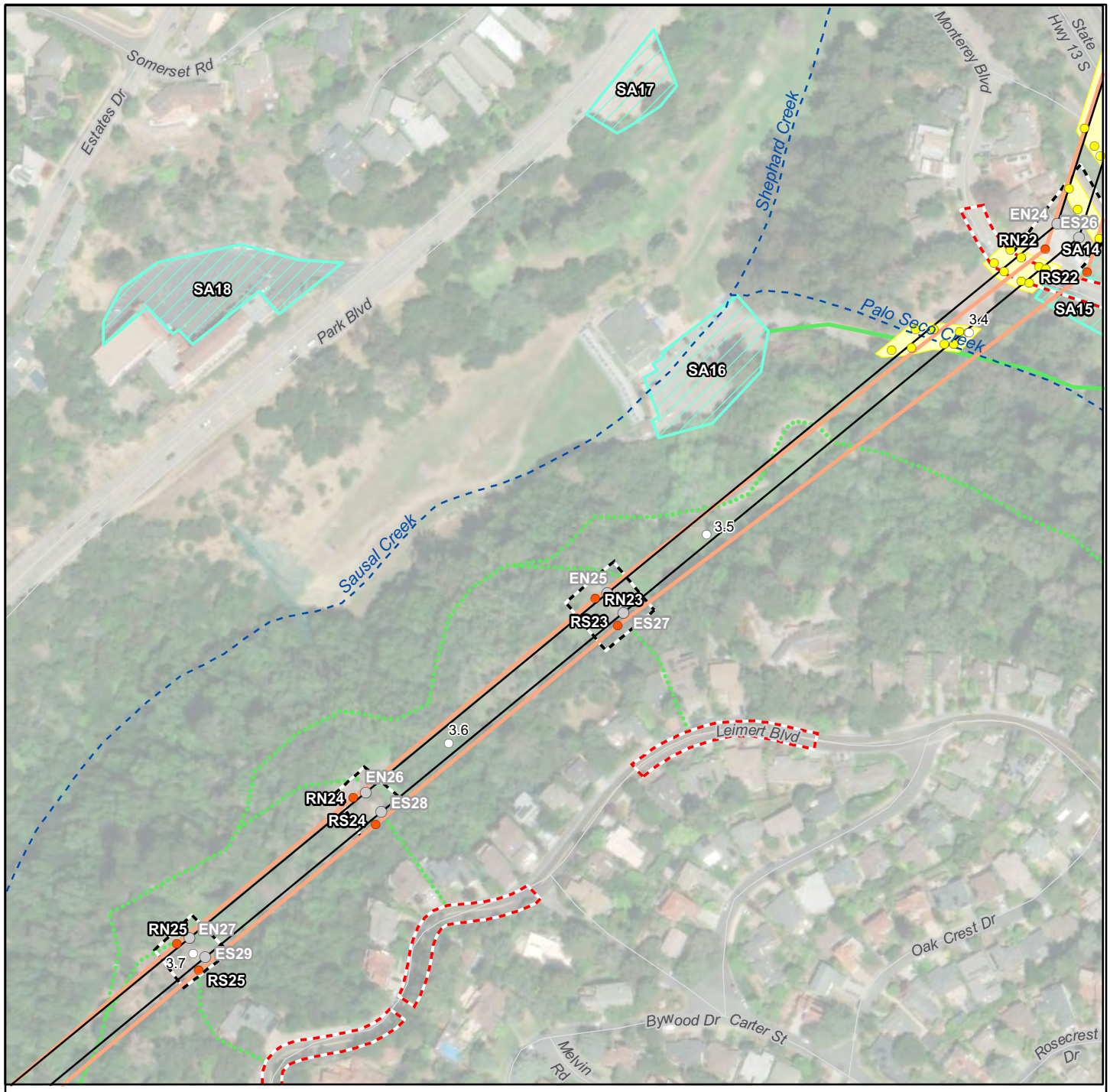
Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 17 of 25



Source: PG&E

Access
- Existing
- Walk-In

Temporary Work Areas
- Guard Poles
- Staging Area
- Work Area
- Work Area, Temporary Closure

Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

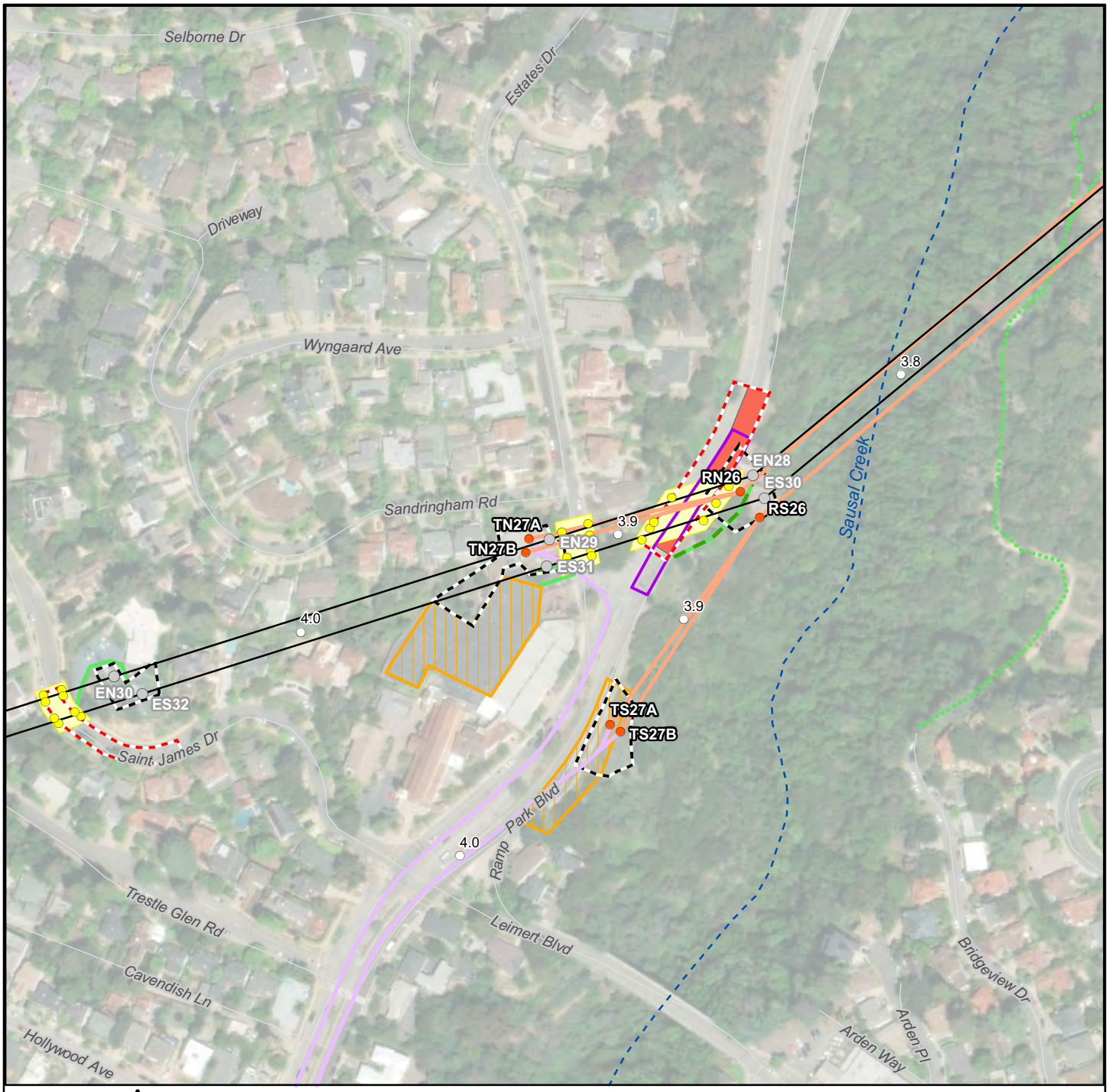
Underground Routes
- Proposed

N

0 250 500
Feet

Figure 2.1-2

Proposed Project - Detail Map 18 of 25



Source: PG&E

Access
- Existing
- Improvement
- Walk-In

Temporary Work Areas
- Guard Poles
- Tension Pull Site
- Work Area
- Work Area, Temporary Closure
- EB Work Area Option
- Move Distribution Pole Option

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

N

0 250 500
Feet

Figure 2.1-2

Proposed Project - Detail Map 19 of 25

Source: PG&E

Access
- Existing
- Walk-In

Temporary Work Areas
- Guard Poles
- Work Area
- Work Area, Temporary Closure

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

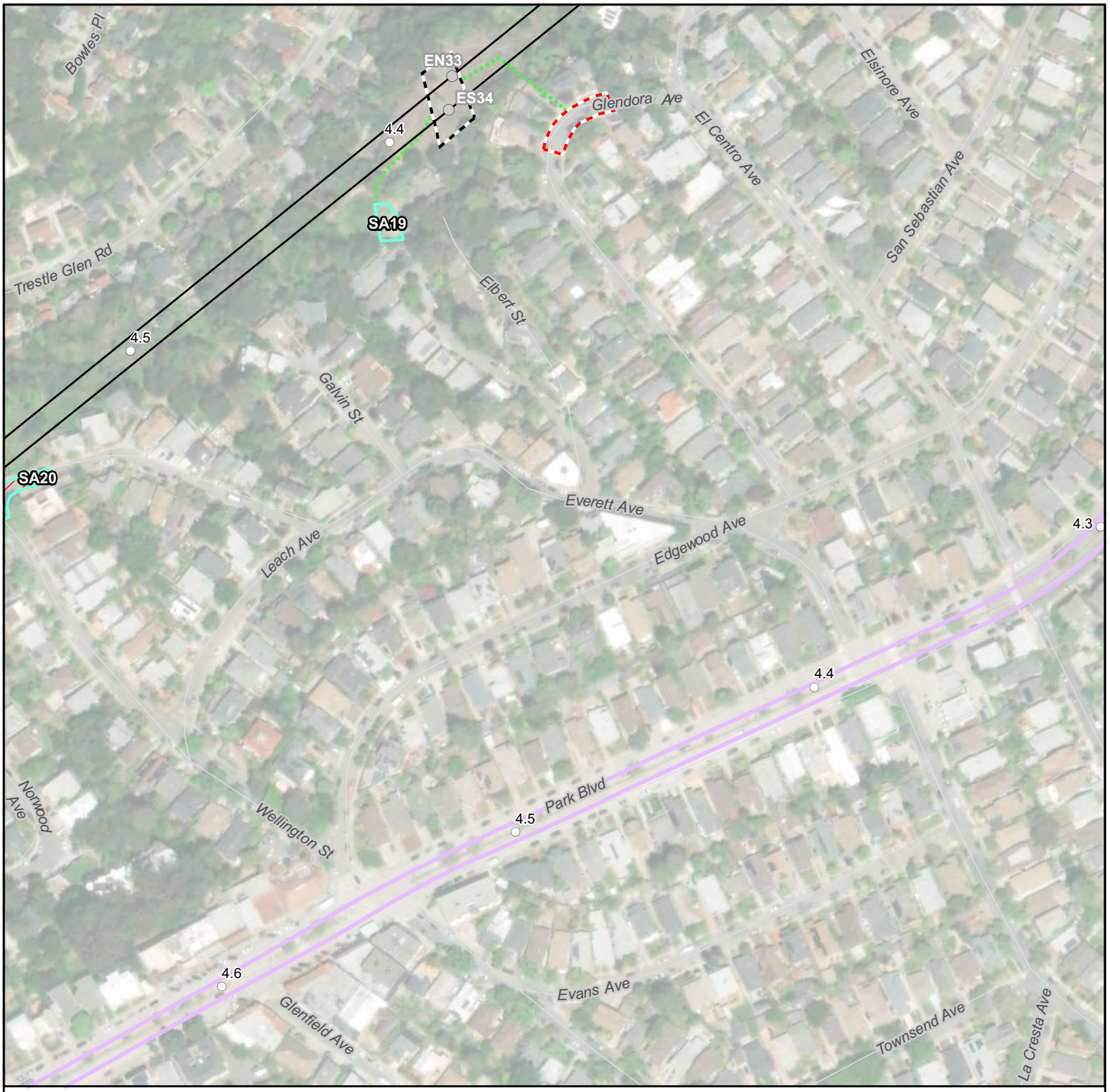
Underground Routes
- Proposed

N

0 250 500
Feet

Figure 2.1-2

Proposed Project - Detail Map 20 of 25



Source: PG&E

Access

- Walk-In

Temporary Work Areas

- Staging Area
- Staging Area, Temporary Closure
- Work Area
- Work Area, Temporary Closure

- Milepost

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes

- Proposed

N

0 250 500

Feet

Figure 2.1-2

Proposed Project - Detail Map 21 of 25

Source: PG&E

Access
- Walk-In

Temporary Work Areas
- Guard Poles
- Staging Area
- Staging Area, Temporary Closure
- Work Area
- Work Area, Temporary Closure

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

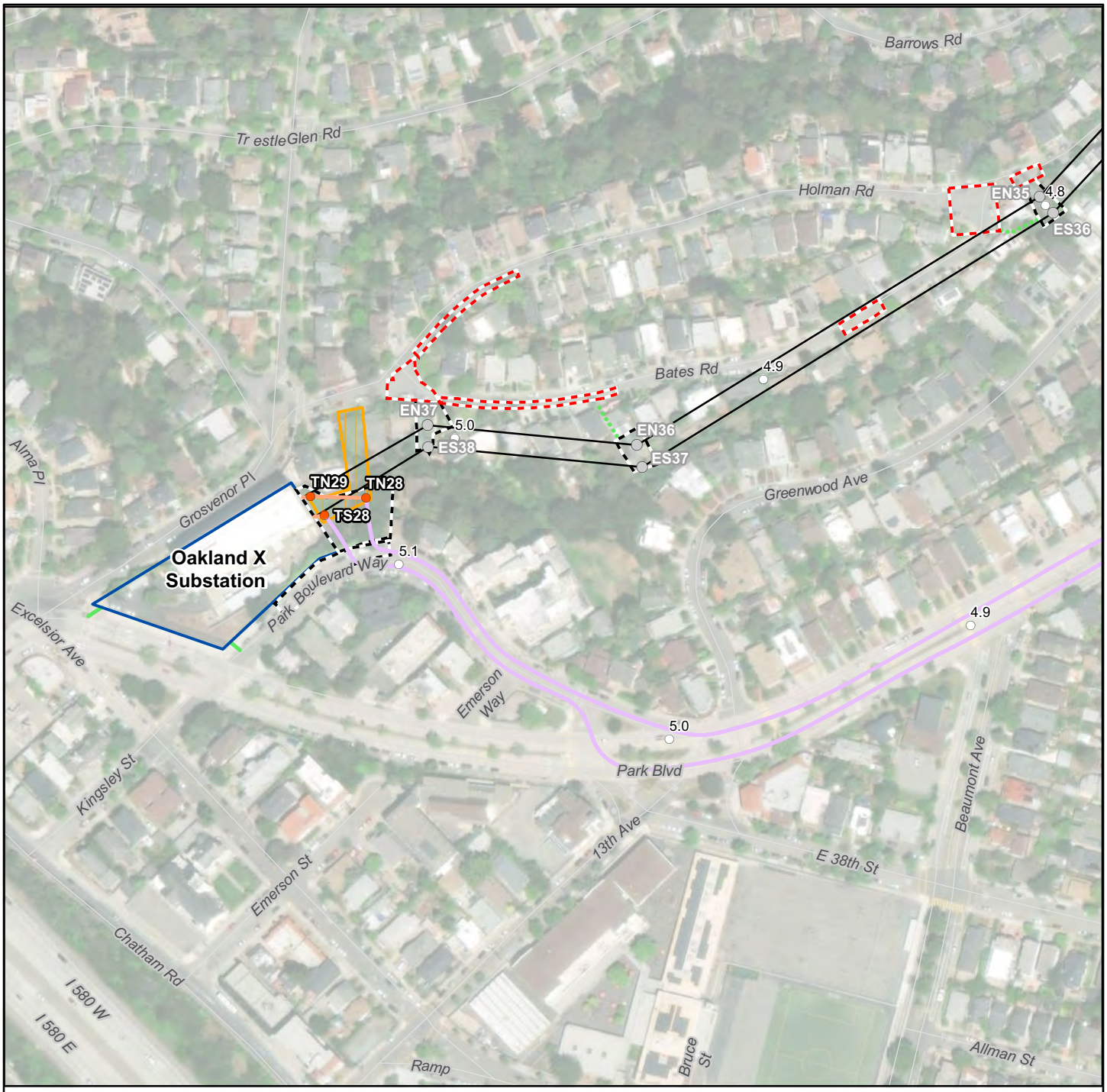
Underground Routes
- Proposed

N

0 250 500
Feet

Figure 2.1-2

Proposed Project - Detail
Map 22 of 25



Source: PG&E

Access
- Existing
- Walk-In

Temporary Work Areas
- Substation Work Area
- Tension Pull Site
- Work Area
- Work Area, Temporary Closure

N

0 250 500
Feet

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

Figure 2.1-2

Proposed Project - Detail Map 23 of 25

Source: PG&E

Access
- Existing
- Walk-In

Temporary Work Areas
- Guard Poles
- Staging Area
- Work Area
- Work Area, Temporary Closure

- Milepost

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed
- Temporary Reconductoring Pole
- Guard Pole

Underground Routes
- Proposed

N

0 250 500
Feet

Figure 2.1-2

Proposed Project - Detail Map 24 of 25

Source: PG&E

Temporary Work Areas

Staging Area

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Temporary Reconductoring Pole

Guard Pole

Underground Routes

Proposed

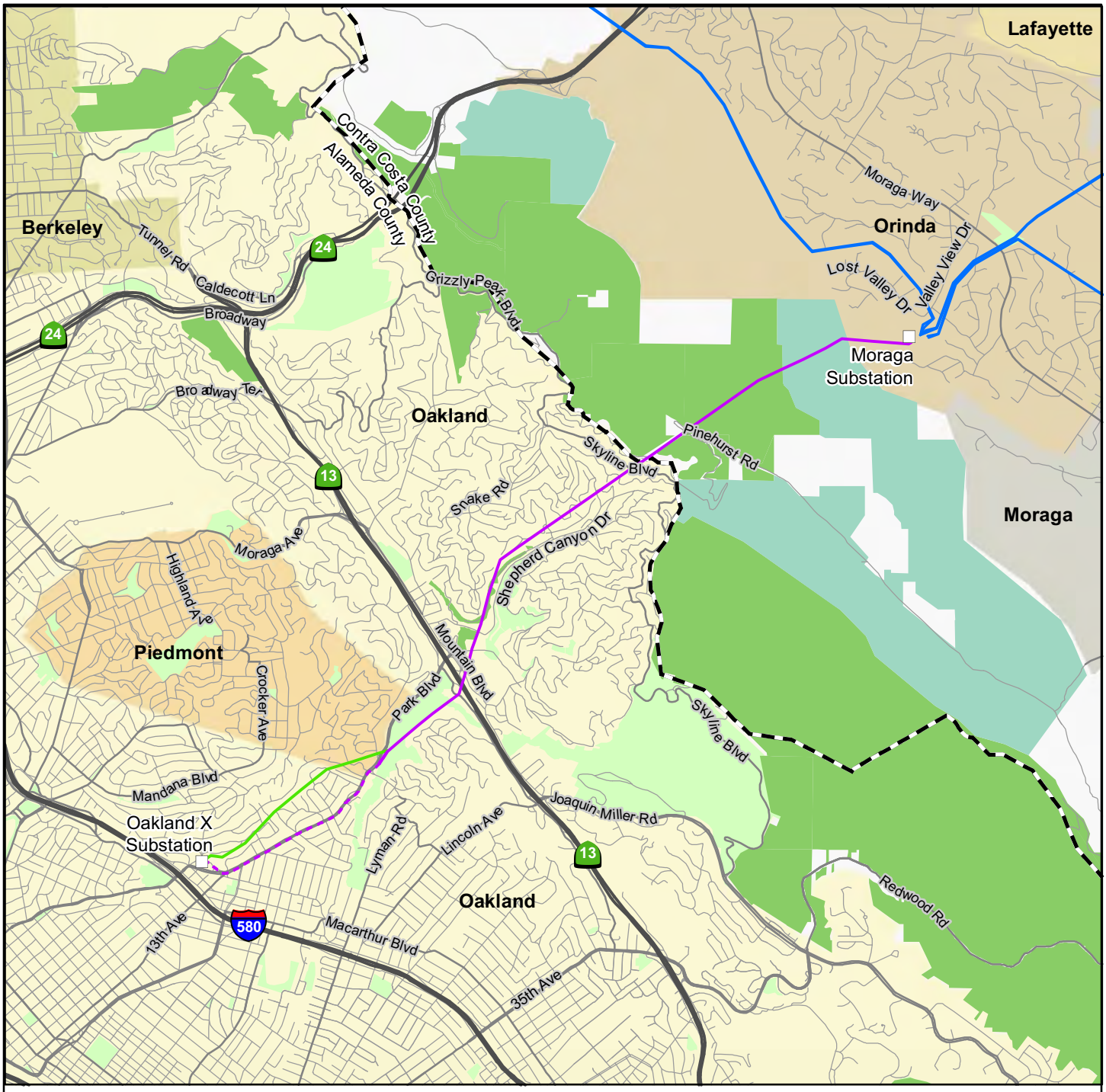
N

0 250 500

Feet

Figure 2.1-2

Proposed Project - Detail Map 25 of 25



Source: PG&E

- Substation
- Existing 230 kV Transmission Line
- State Route/Highway
- Arterial
- Local Street

Moraga-Oakland X 115 kV Rebuild Project

- Four Existing Overhead 115 kV Lines to be Rebuilt in Same Overhead Configuration
- Four New Underground 115 kV Lines
- Four Existing Overhead 115 kV Lines to be Removed

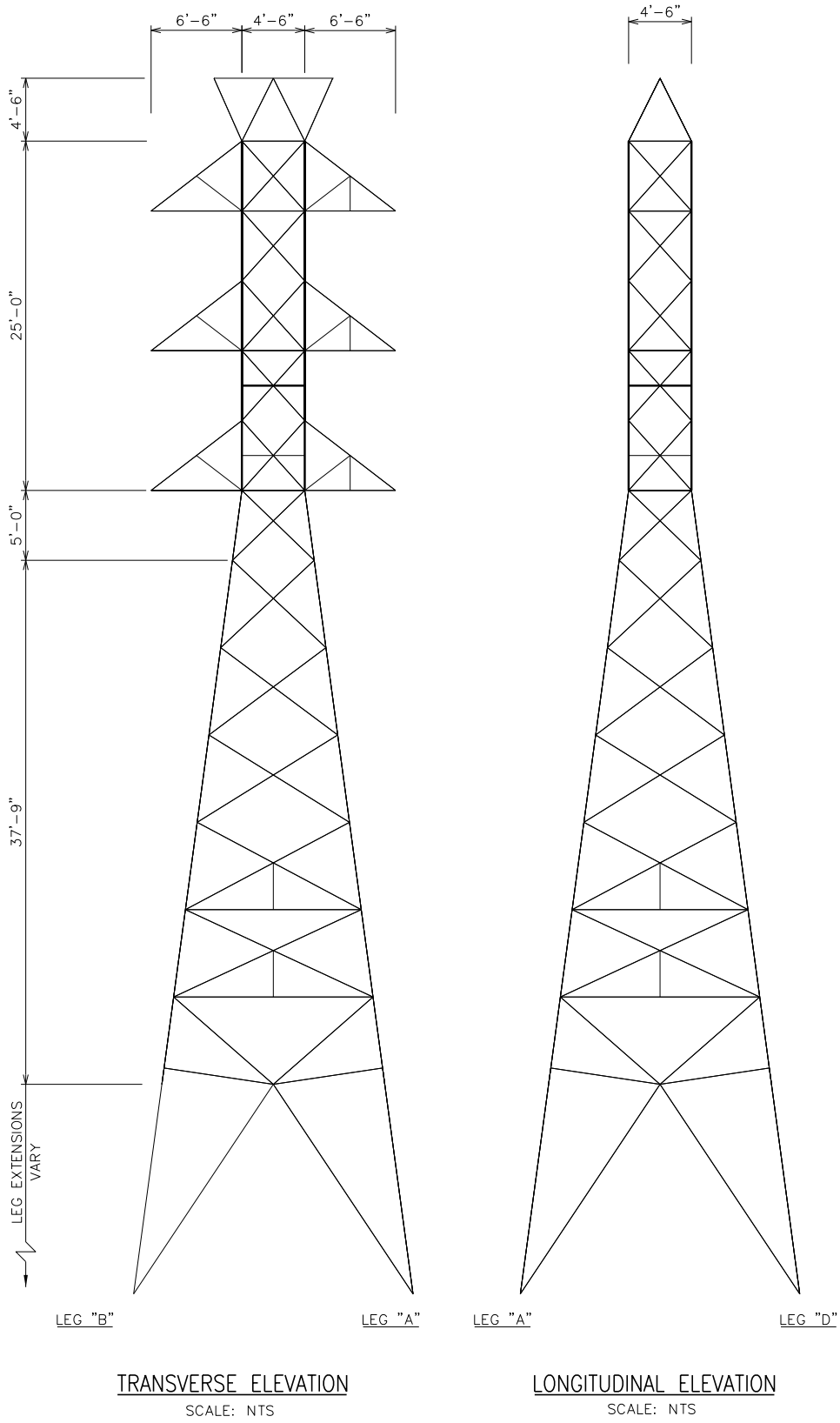
0 0.5 1 Miles

N

- East Bay Regional Park District
- EBMUD Property
- Other Park or Recreation Area
- County Boundary
- City of Berkeley
- City of Moraga
- City of Lafayette
- City of Oakland
- City of Orinda
- City of Piedmont

Figure 2.1-3

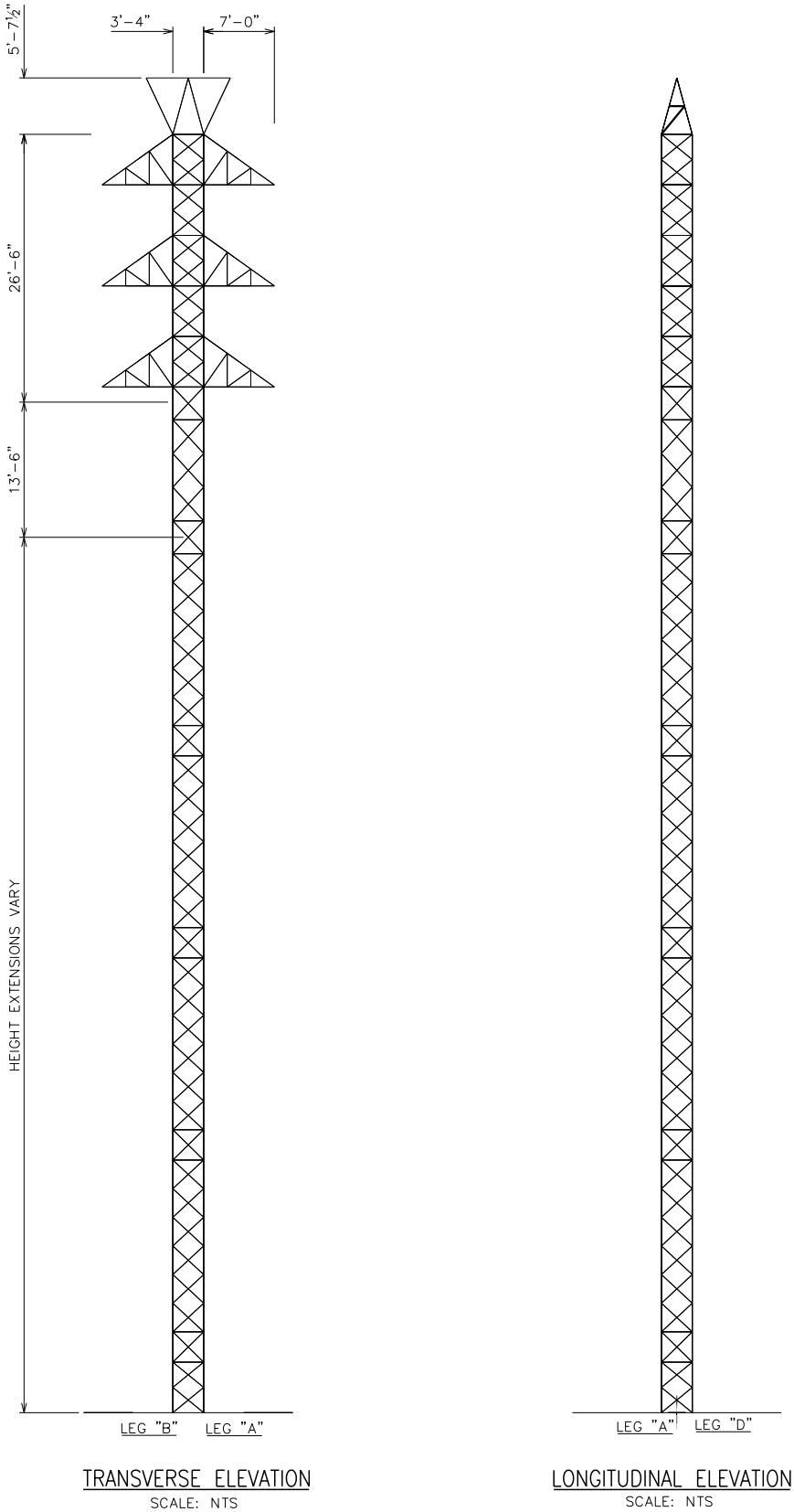
Overview with Proposed Lines Rebuild



Source: PG&E

Figure 2.1-4a

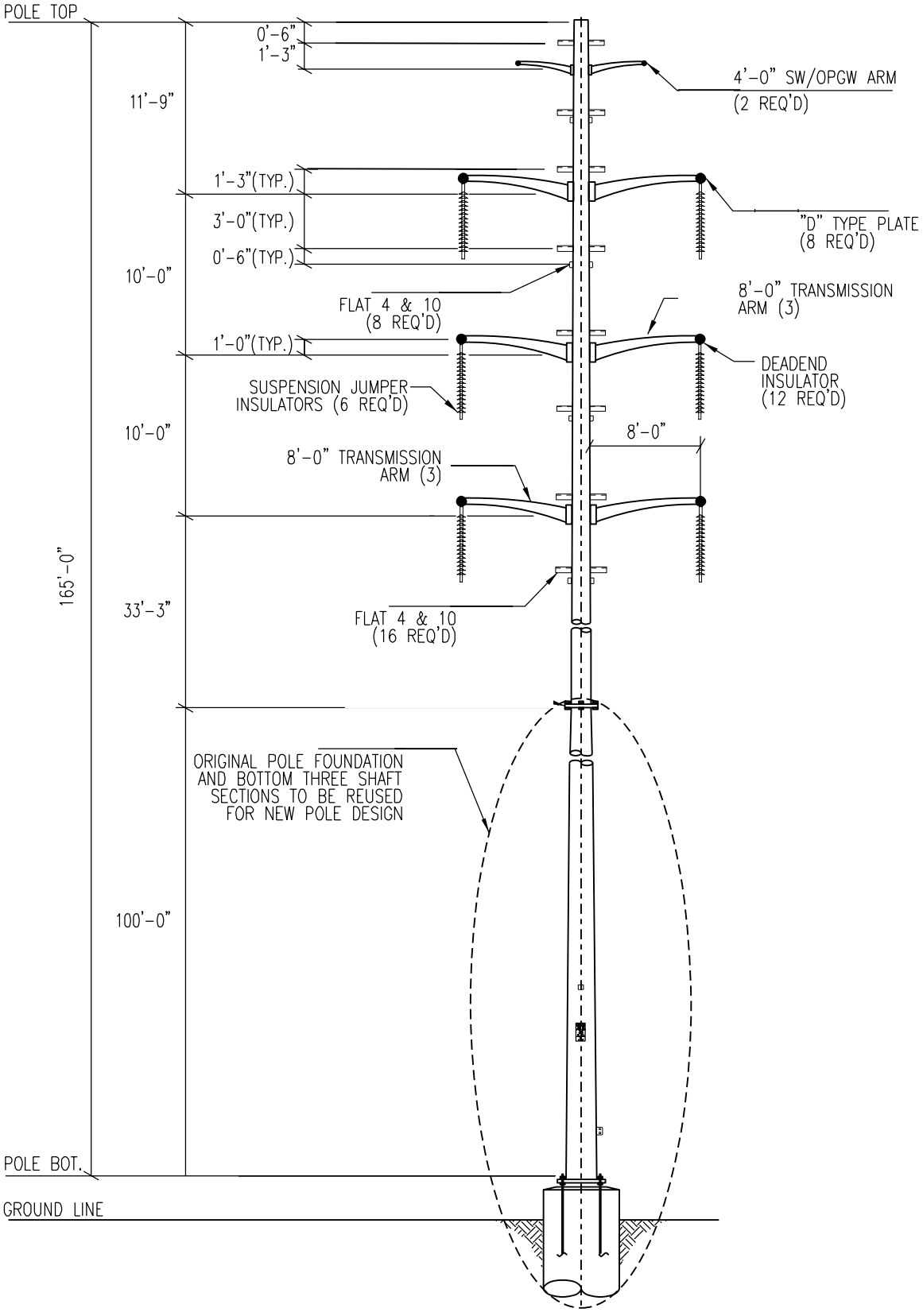
Lattice Steel Tower (Typical)



Source: PG&E

Figure 2.1-4b

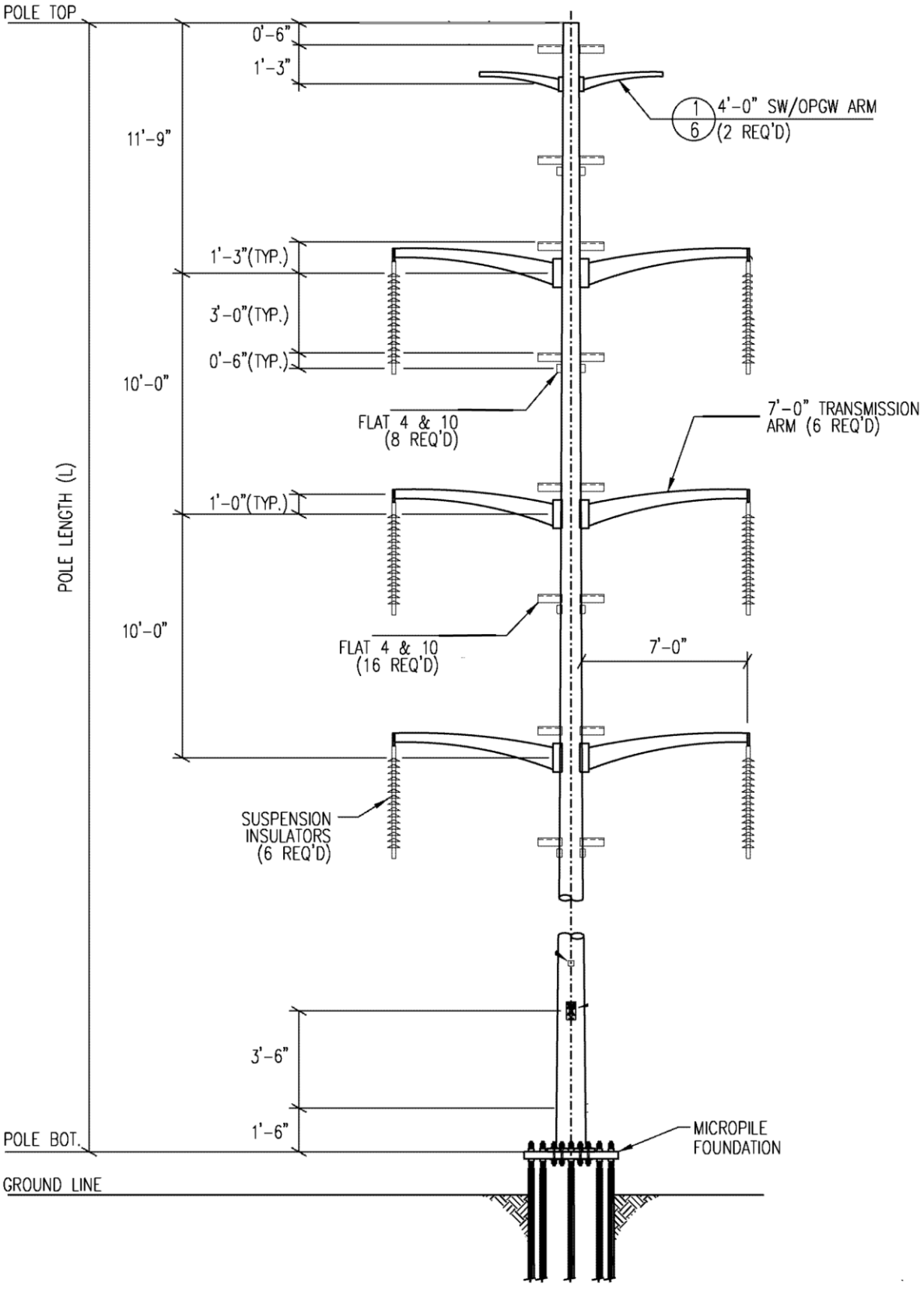
Lattice Steel Pole (Typical)



Source: PG&E

Figure 2.1-4c

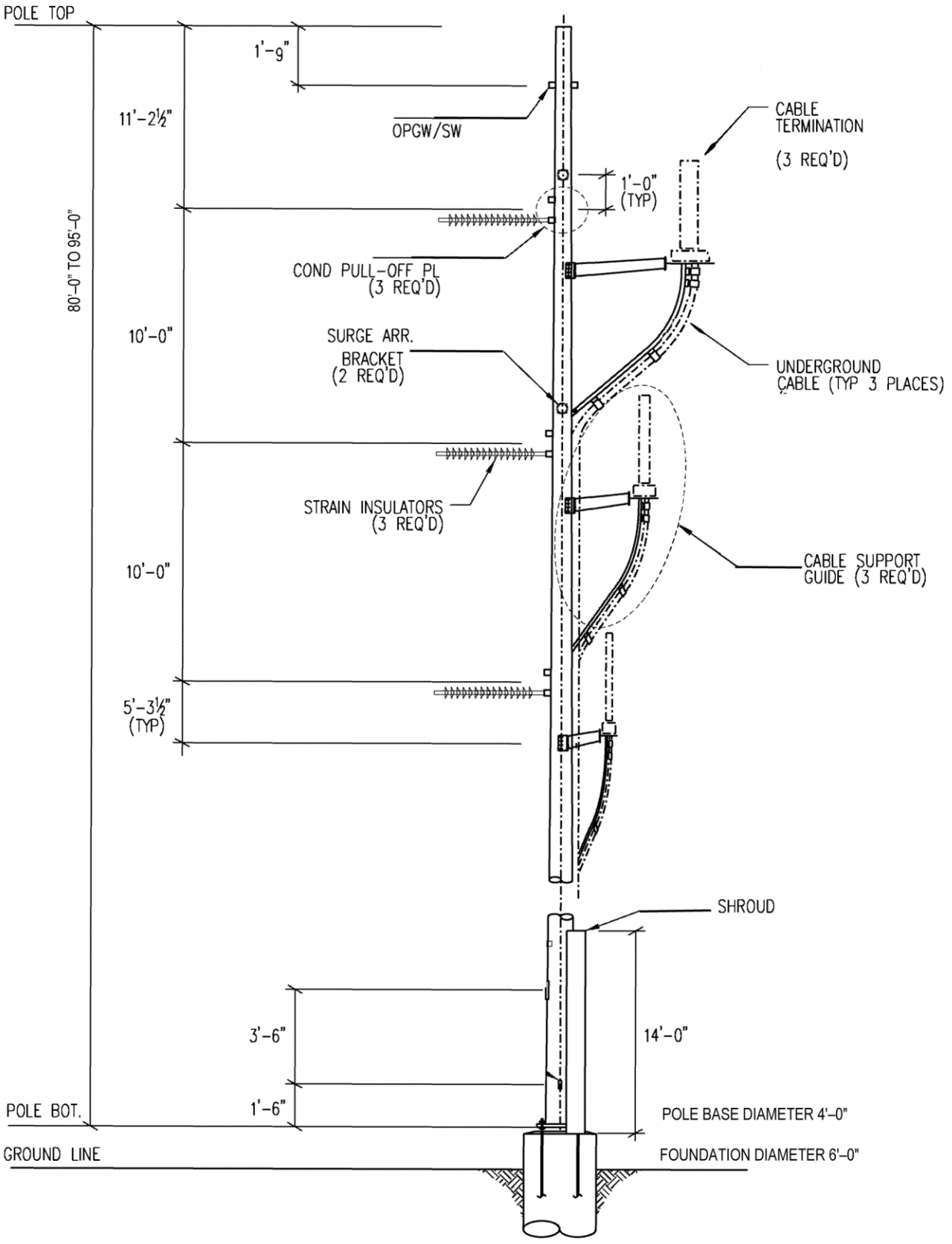
Modified Tubular Steel Pole (Typical) with a Drilled Pier Foundation



Source: PG&E

Figure 2.1-4d

Tubular Steel Pole (Typical) with a Micropile Foundation

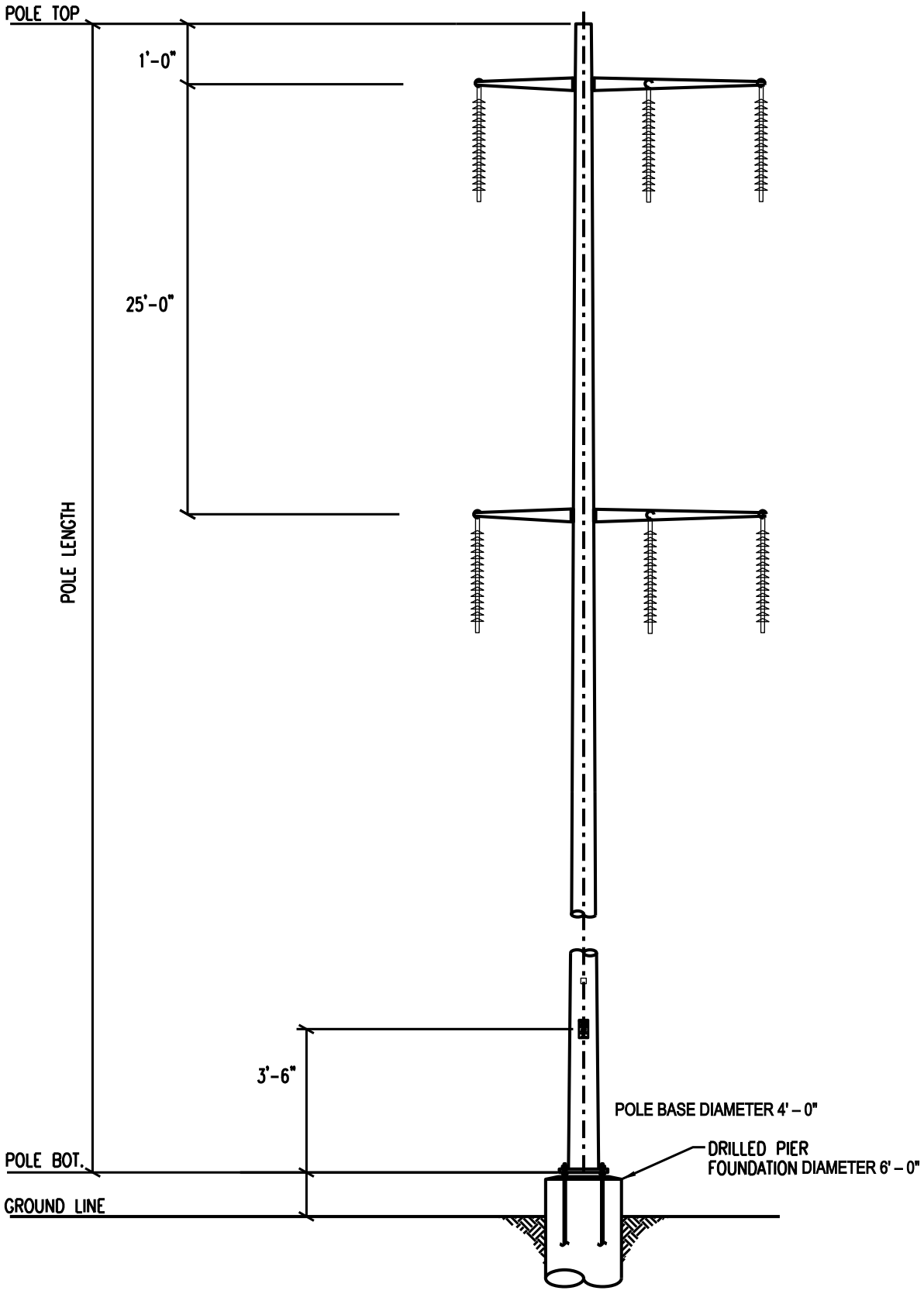


Source: PG&E

Anticipated to be used for TN27A, TN27B, TS27A and TS27B at the eastern end of the underground portion of the project near the intersection of Estates Drive and Park Boulevard.

Figure 2.1-5a

Vertical Single Circuit Transition Structure Tubular Steel Pole (Typical)

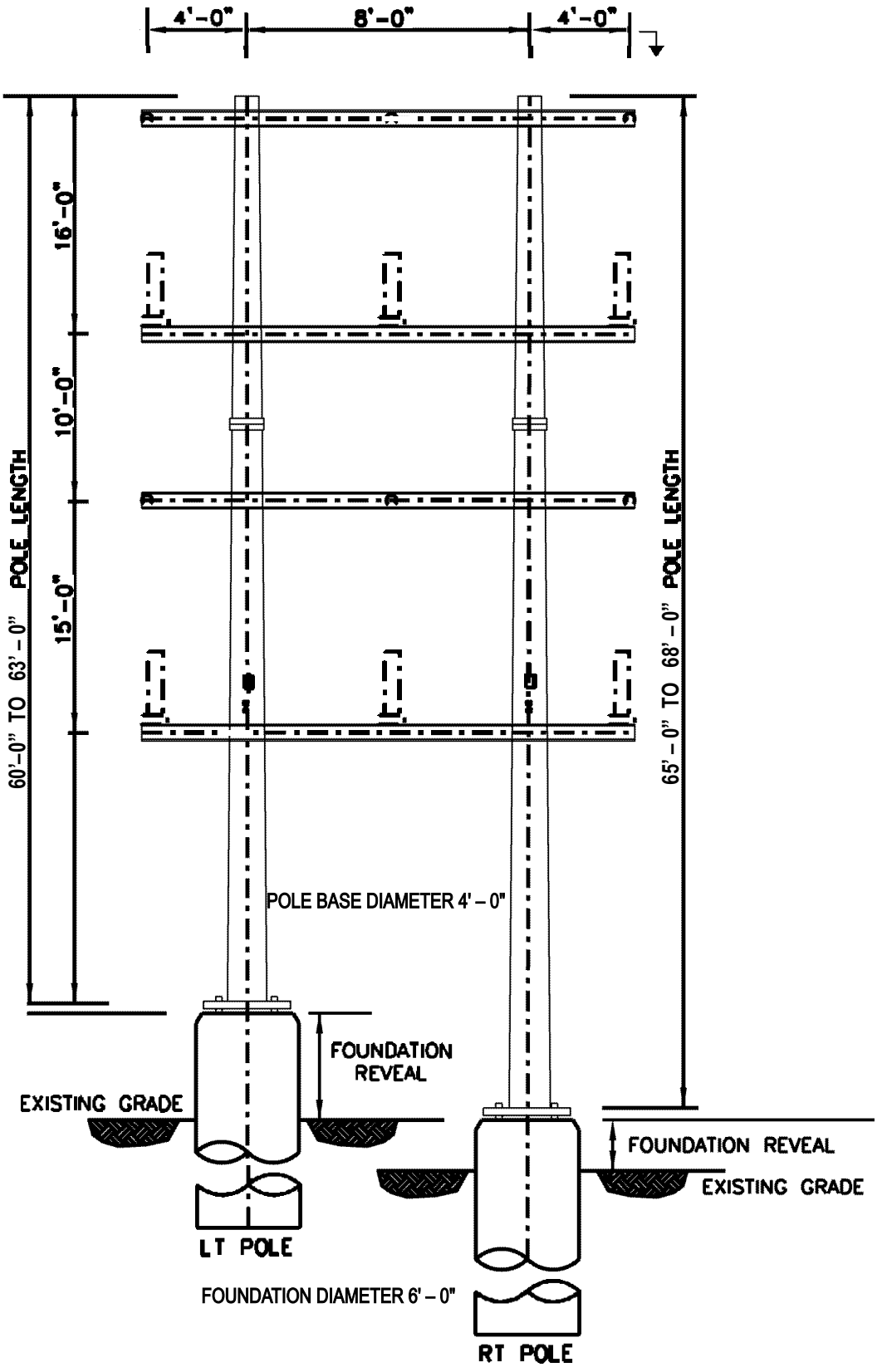


Source: PG&E

Anticipated to be used for TS28 at the western end of the underground portion of the project at Oakland X Substation.

Figure 2.1-5b

Vertical Double Circuit Transition Structure Tubular Steel Pole (Typical)

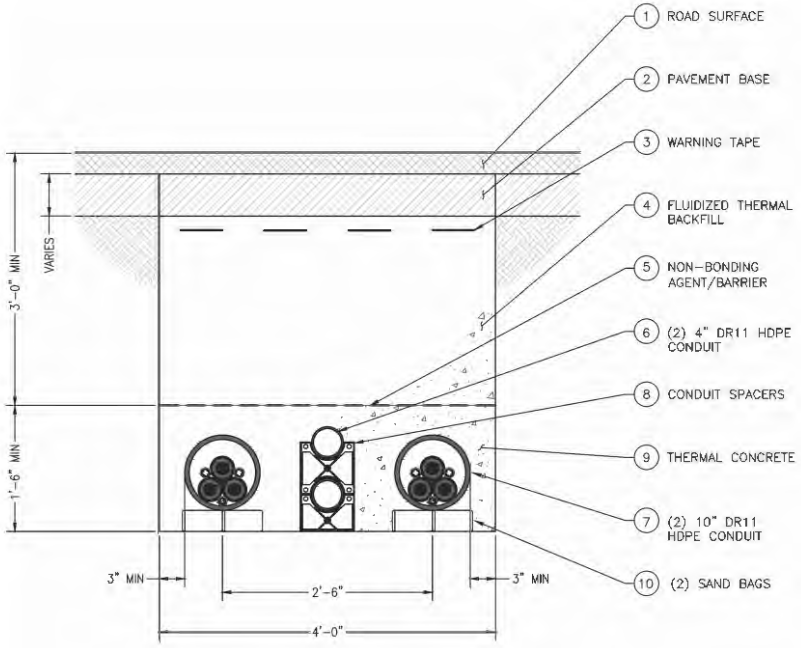


Source: PG&E

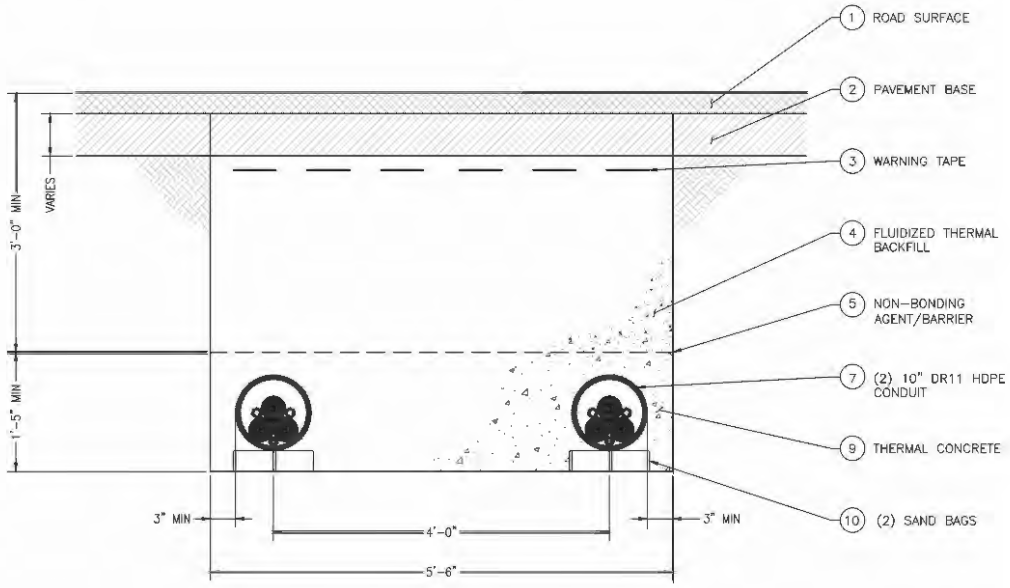
Anticipated to be used for TN28A and TN28B at the western end of the underground portion of the project at Oakland X Substation.

Figure 2.1-5c

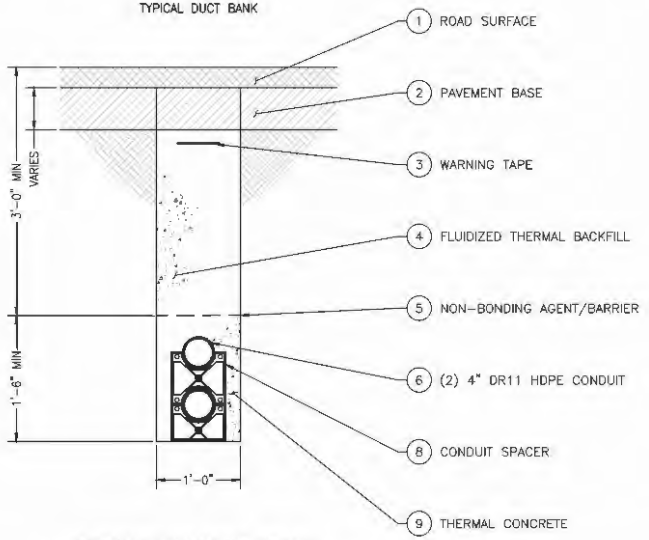
H-Frame Double Circuit Transition Structure Tubular Steel Pole (Typical)



TYPICAL DUCT BANK



115 KV CONDUIT DUCT BANK
SPLICE MANHOLE APPROACH AND DEPARTURE

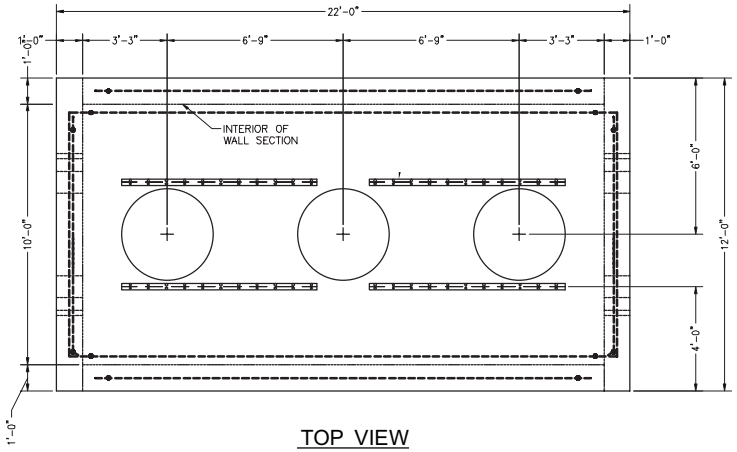


TELECOMMUNICATION CONDUIT DUCT BANK
TELECOMMUNICATIONS MH APPROACH AND DEPARTURE

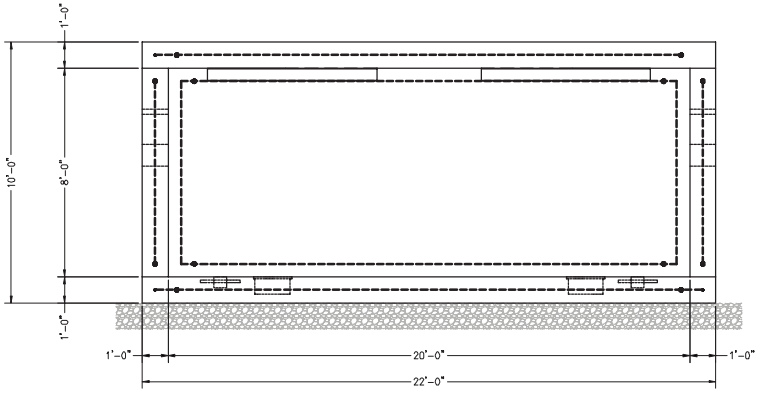
Source: PG&E

Figure 2.1-6

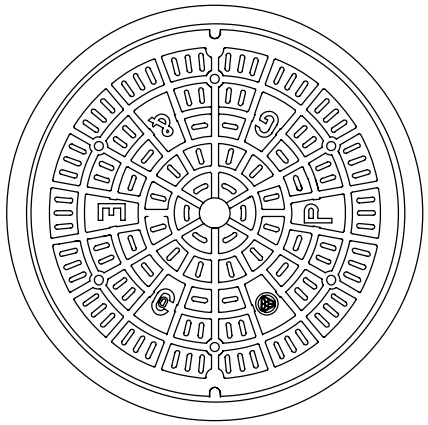
Underground Duct Bank Cross Sections (Preliminary Drawing)



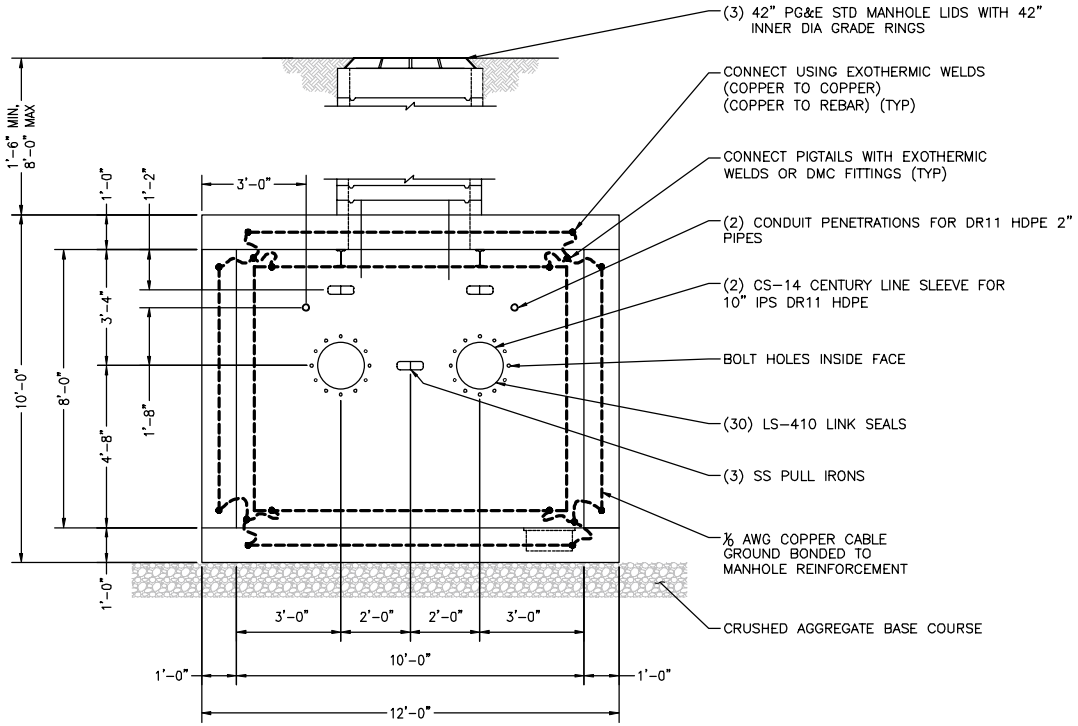
TOP VIEW



SIDE VIEW



39INCH COVER



END VIEW

Source: PG&E

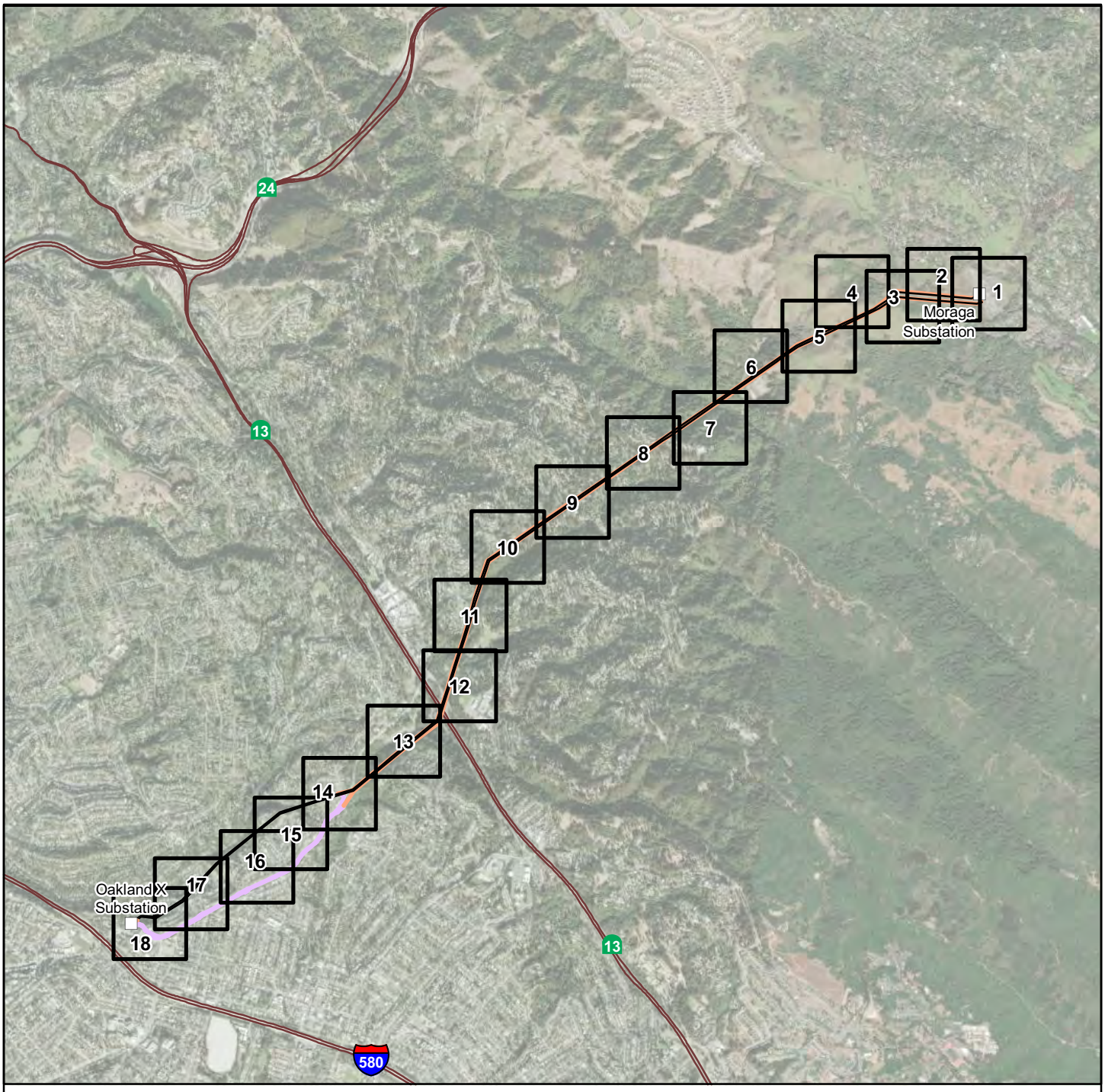
Figure 2.1-7

Underground Vault Details (Preliminary Drawing)

Source: PG&E

Figure 2.1-8

Example Single Circuit and Double Circuit Transition Structure Tubular Steel Poles



Source: PG&E

Detail Map Sheet

Substation

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

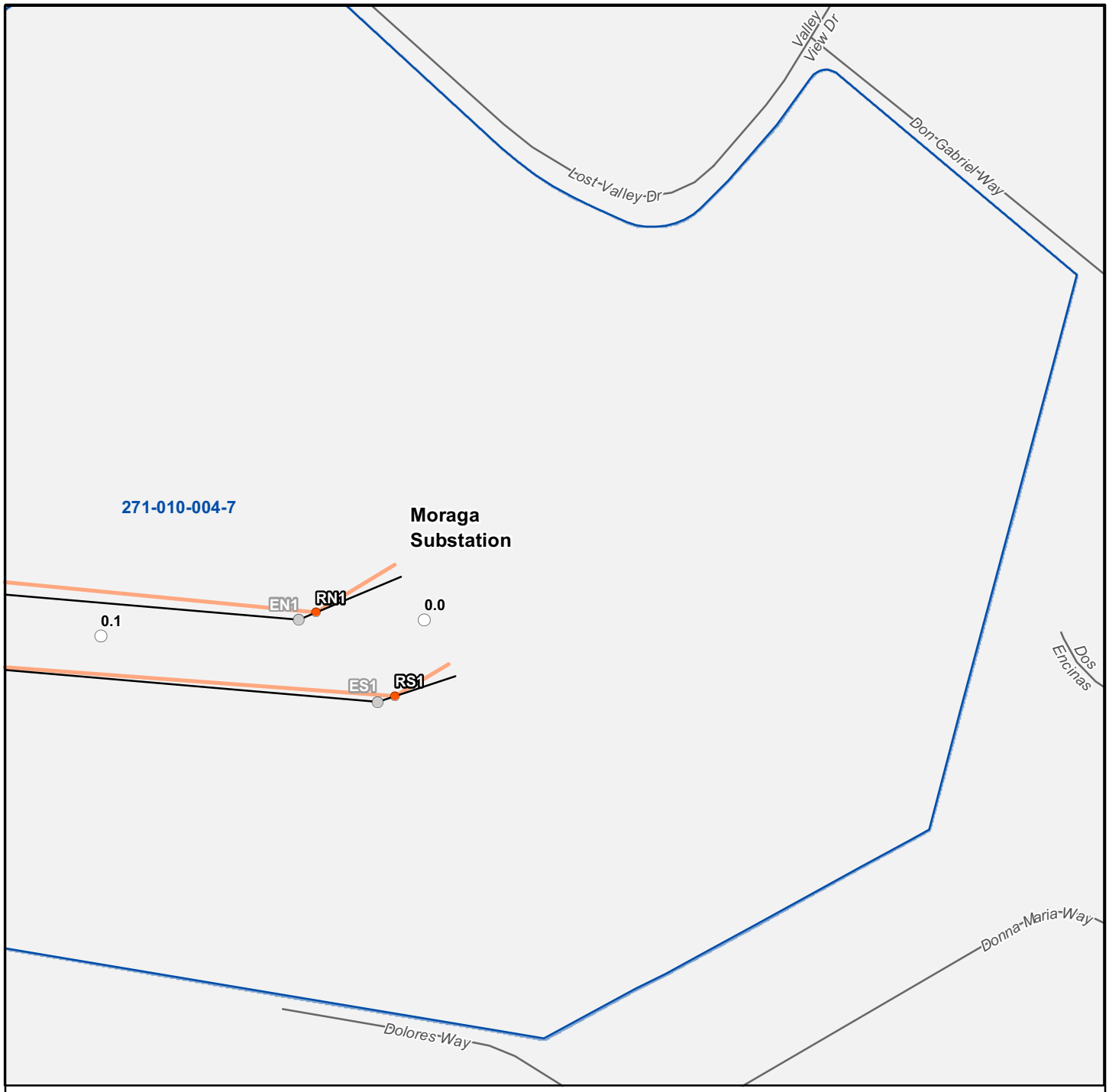
0 0.5 1

Miles

N

Figure 2.2-1

Existing and Anticipated Modified and New Easements Overview



Source: PG&E

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

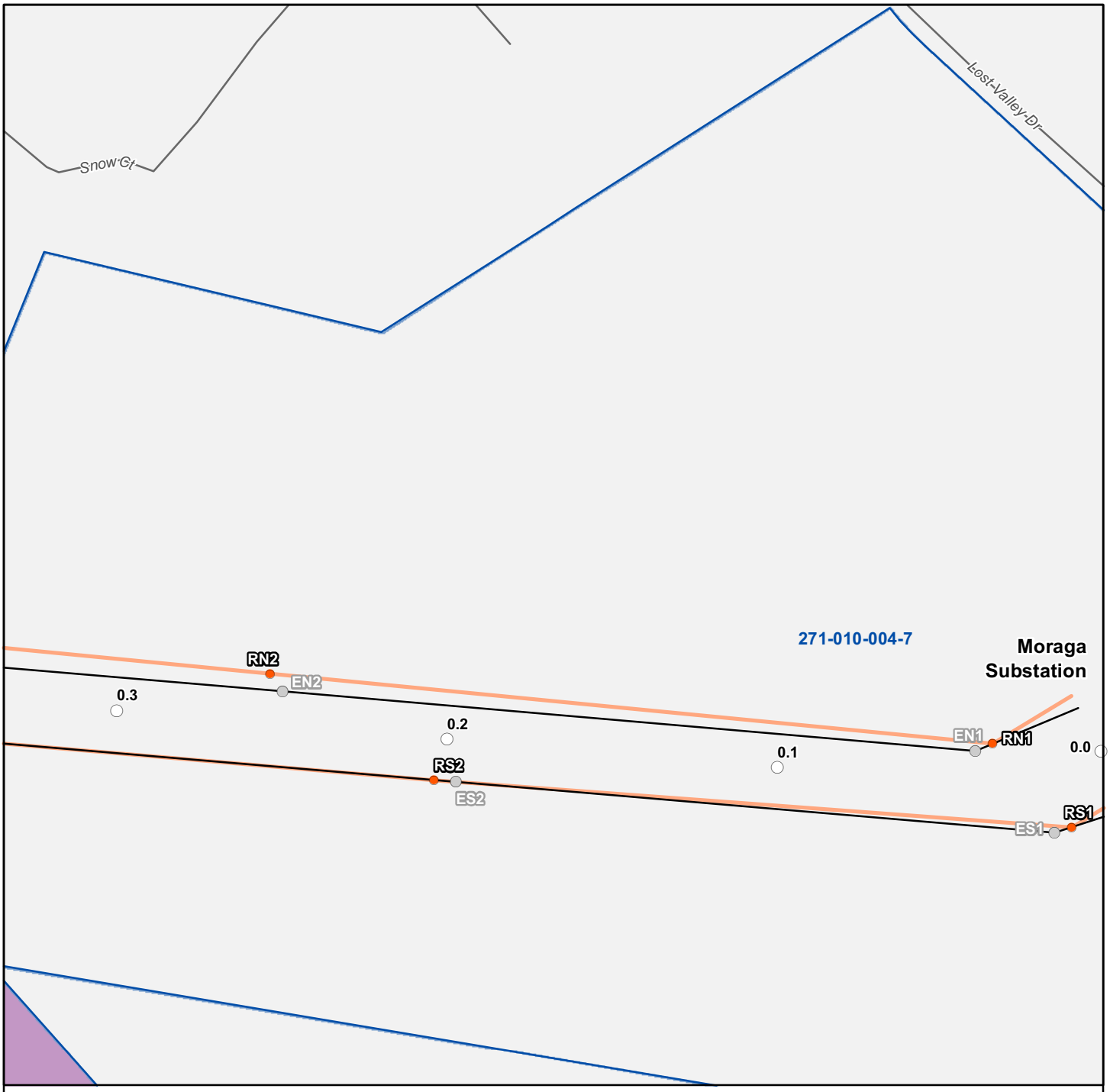
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 1 of 18



Source: PG&E

Parcel Status

Existing Easement
Modification Anticipated

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

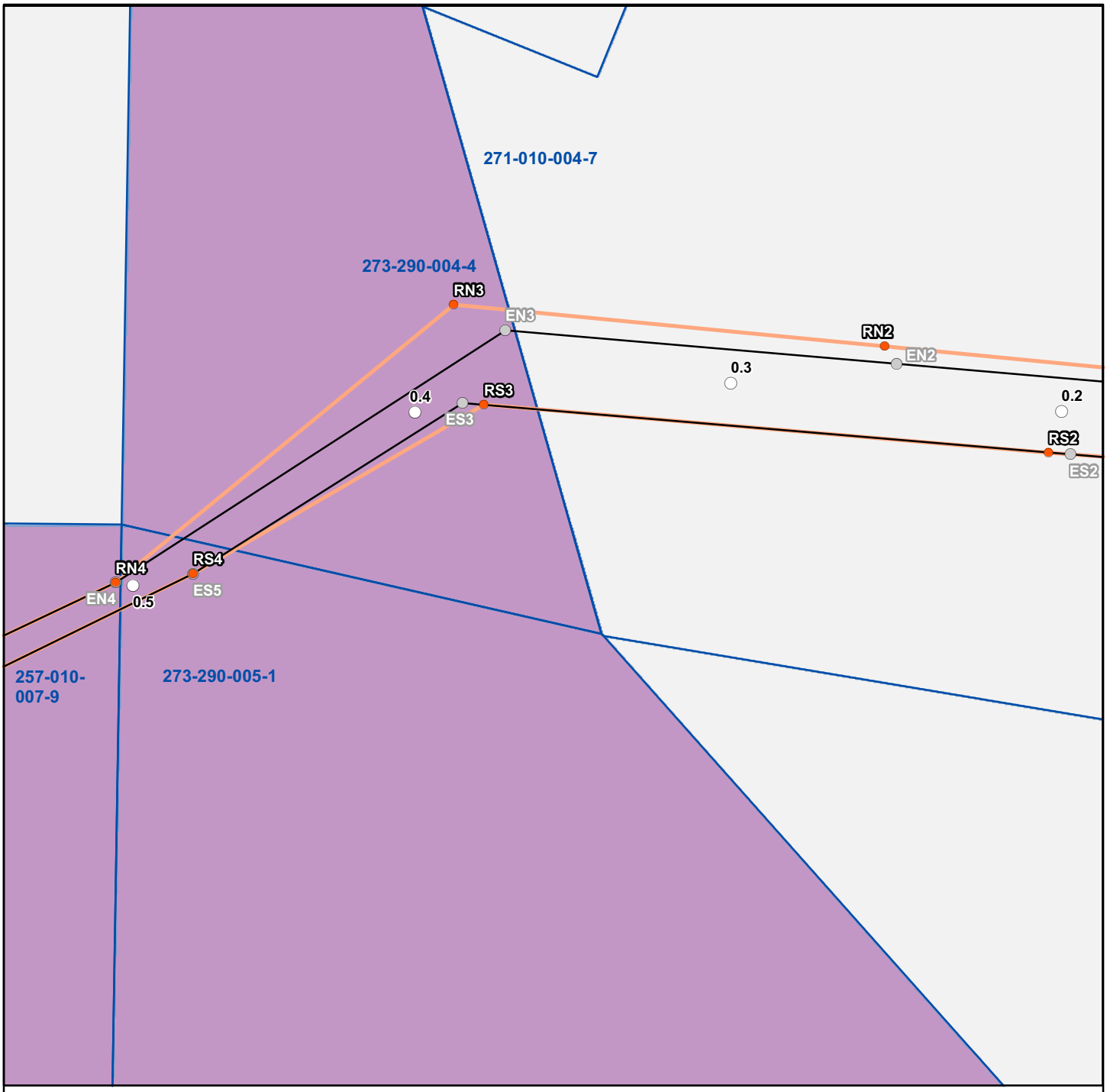
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 2 of 18



Source: PG&E

Parcel Status

Existing Easement
Modification Anticipated

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

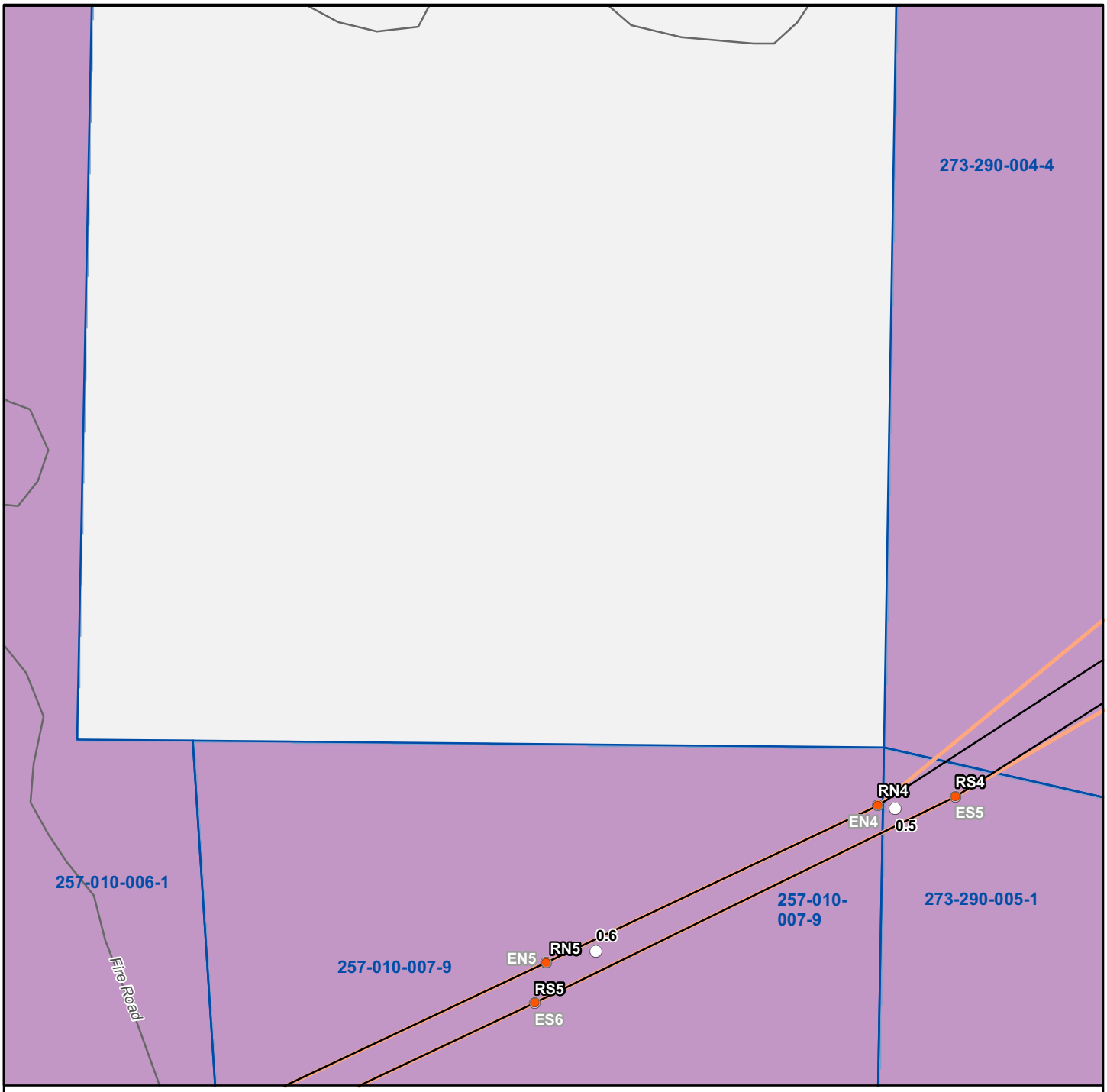
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 3 of 18



Source: PG&E

Parcel Status

Existing Easement
Modification Anticipated

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

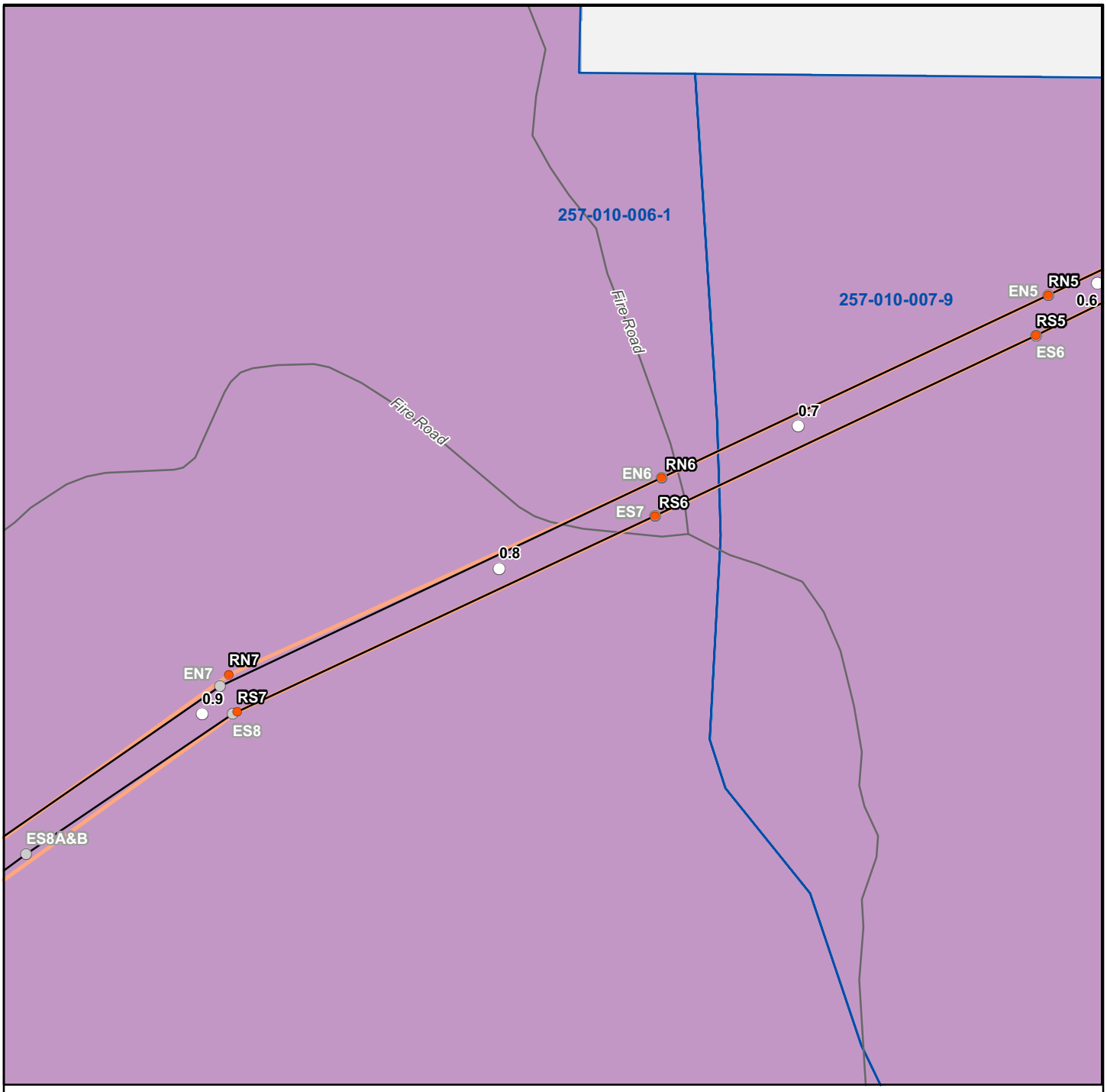
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 4 of 18



Source: PG&E

Parcel Status

Existing Easement
Modification Anticipated

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

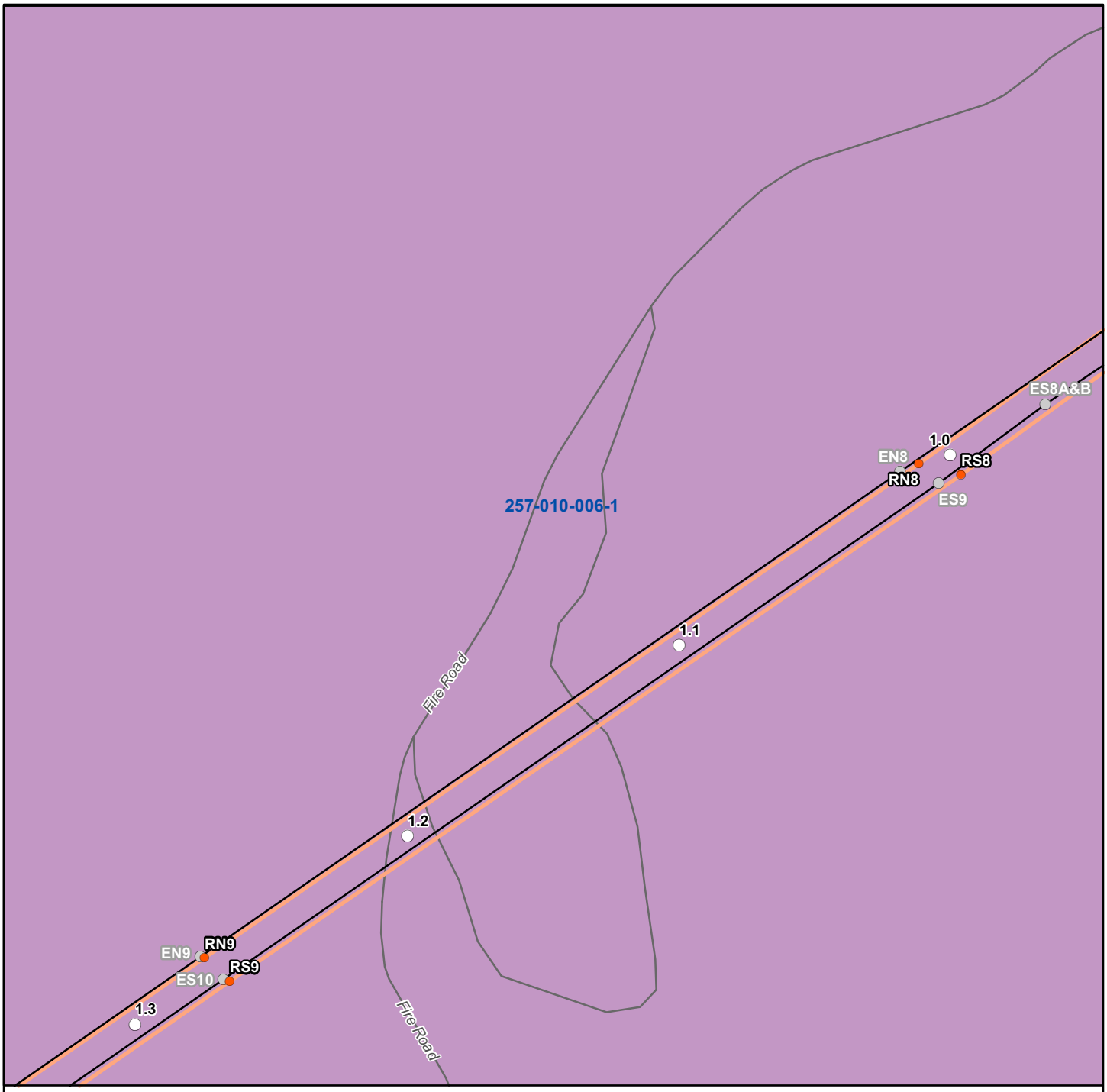
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 5 of 18



Source: PG&E

Parcel Status

Existing Easement
Modification Anticipated

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

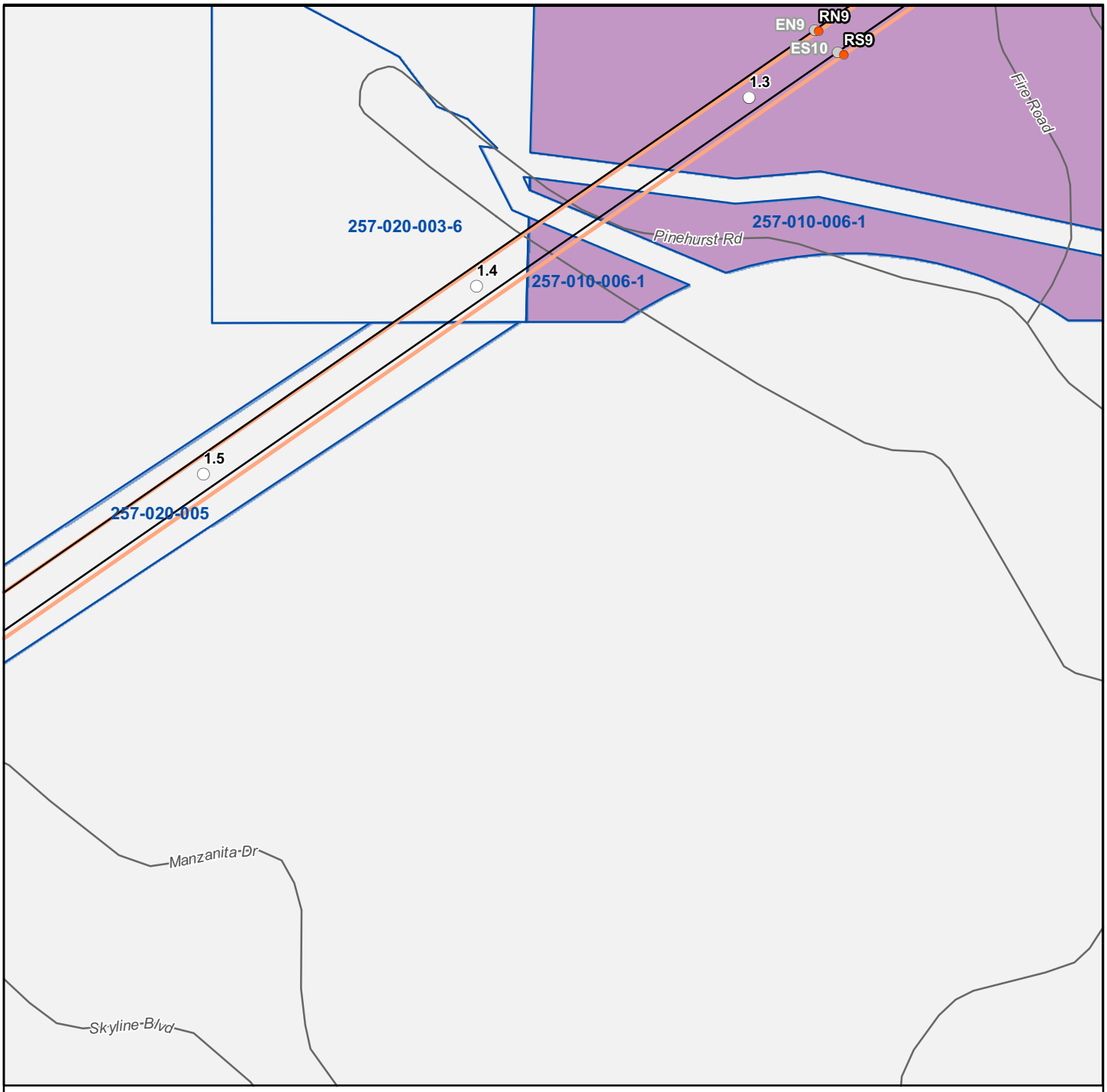
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 6 of 18



Source: PG&E

Parcel Status

Existing Easement
Modification Anticipated

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

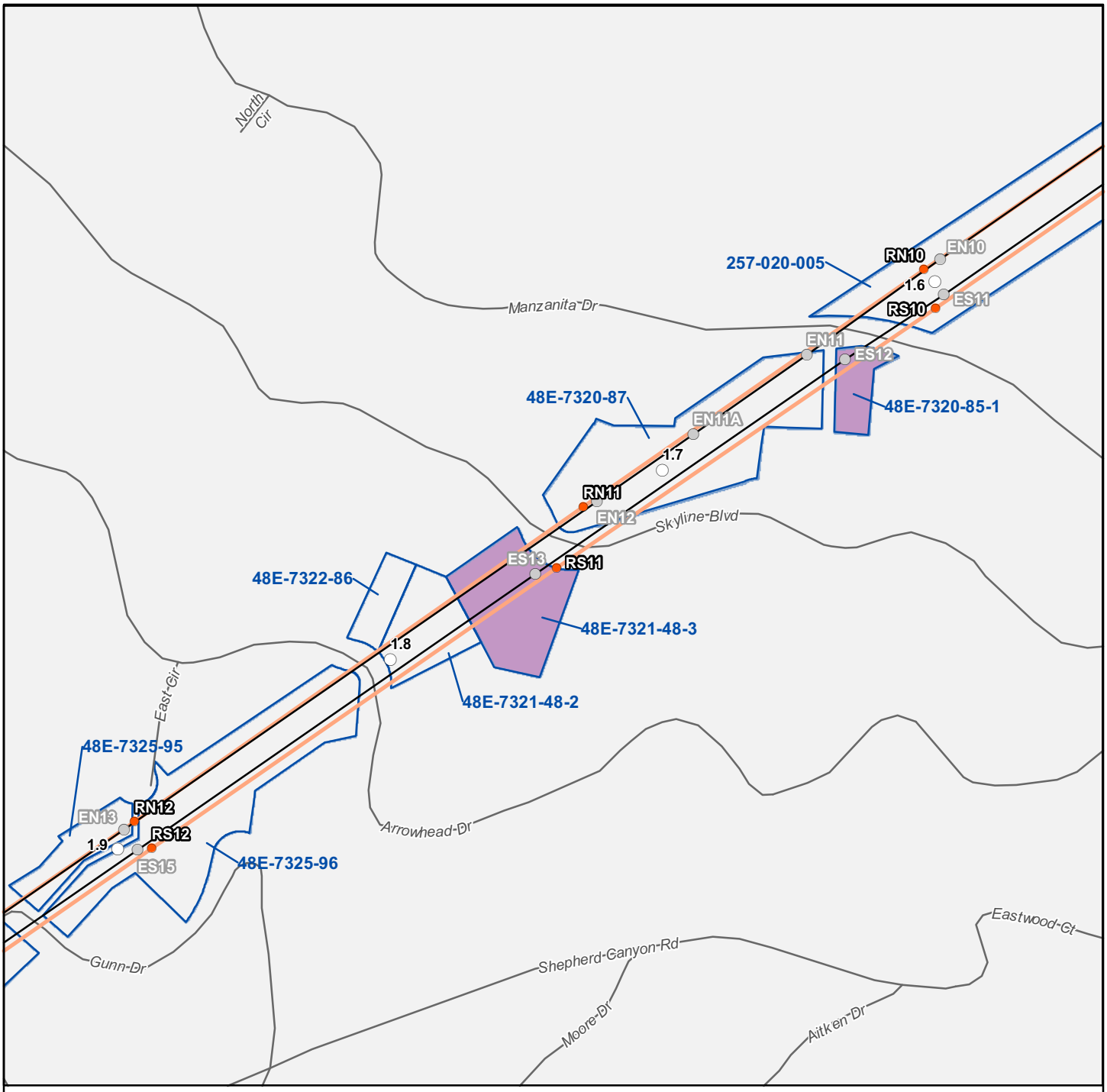
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 7 of 18



Source: PG&E

Parcel Status

Existing Easement
Modification Anticipated

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

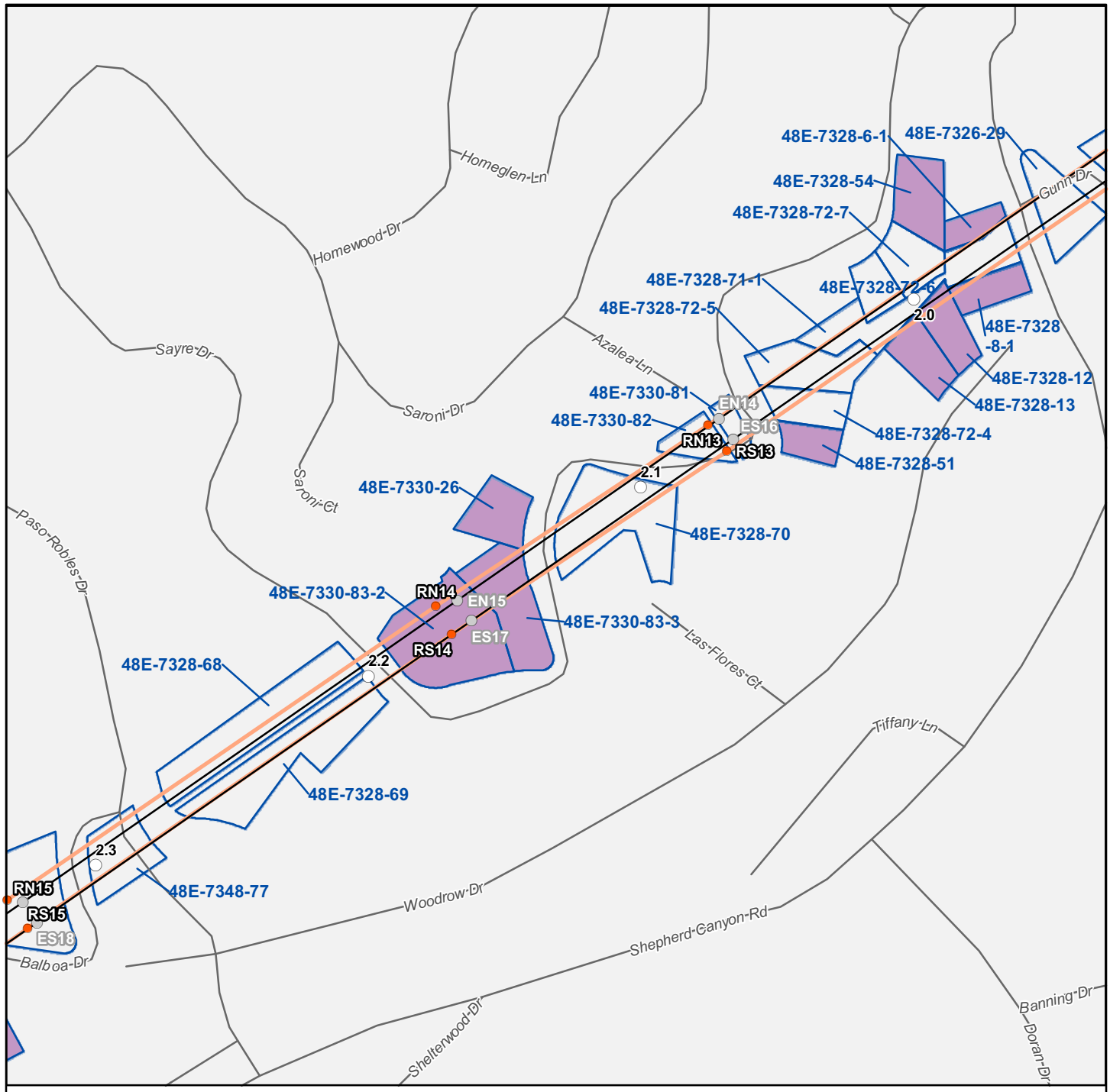
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 8 of 18



Source: PG&E

Parcel Status

- Existing Easement
- Modification Anticipated

- Milepost

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

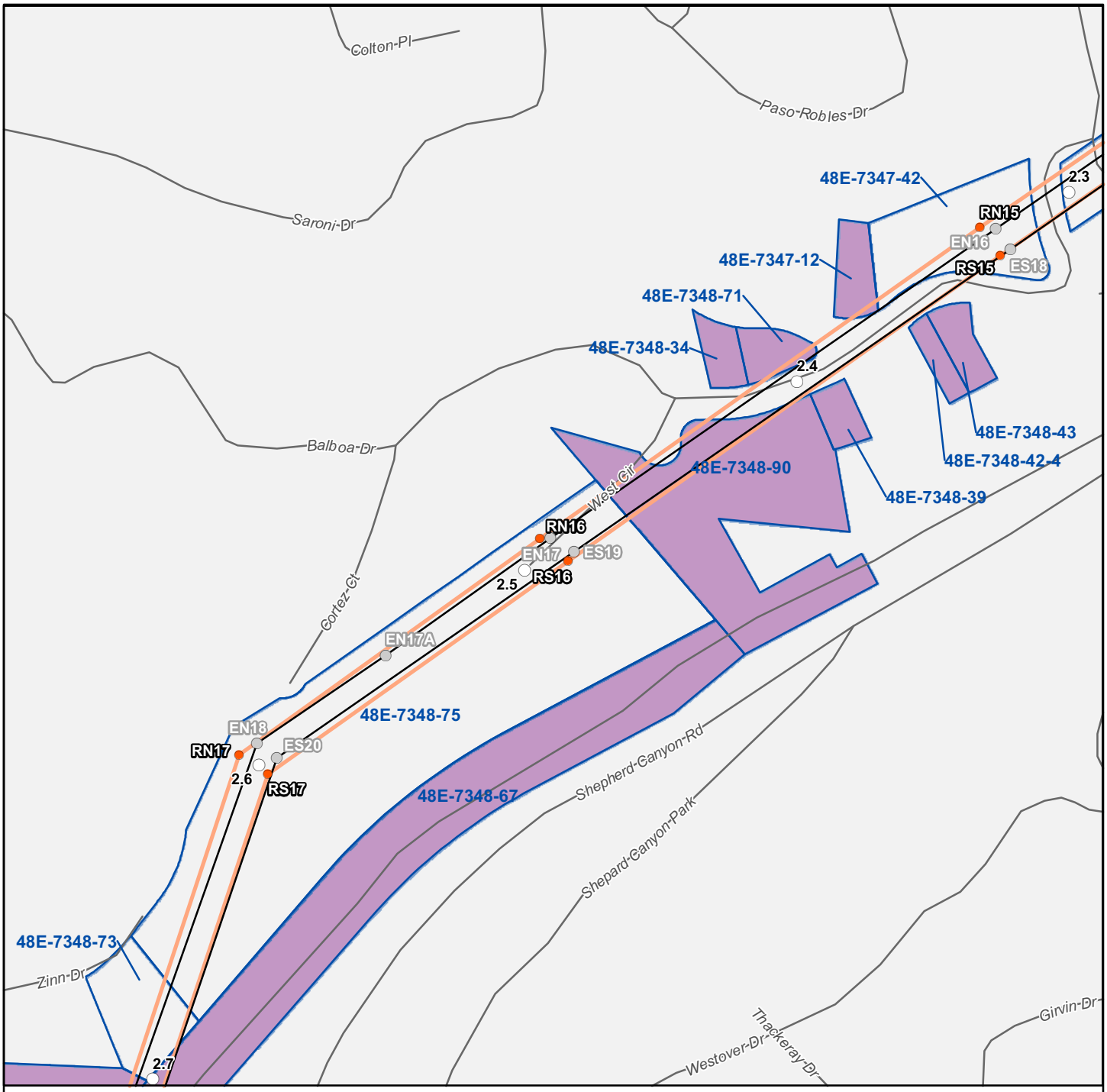
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 9 of 18



Source: PG&E

Parcel Status

Existing Easement Modification Anticipated

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

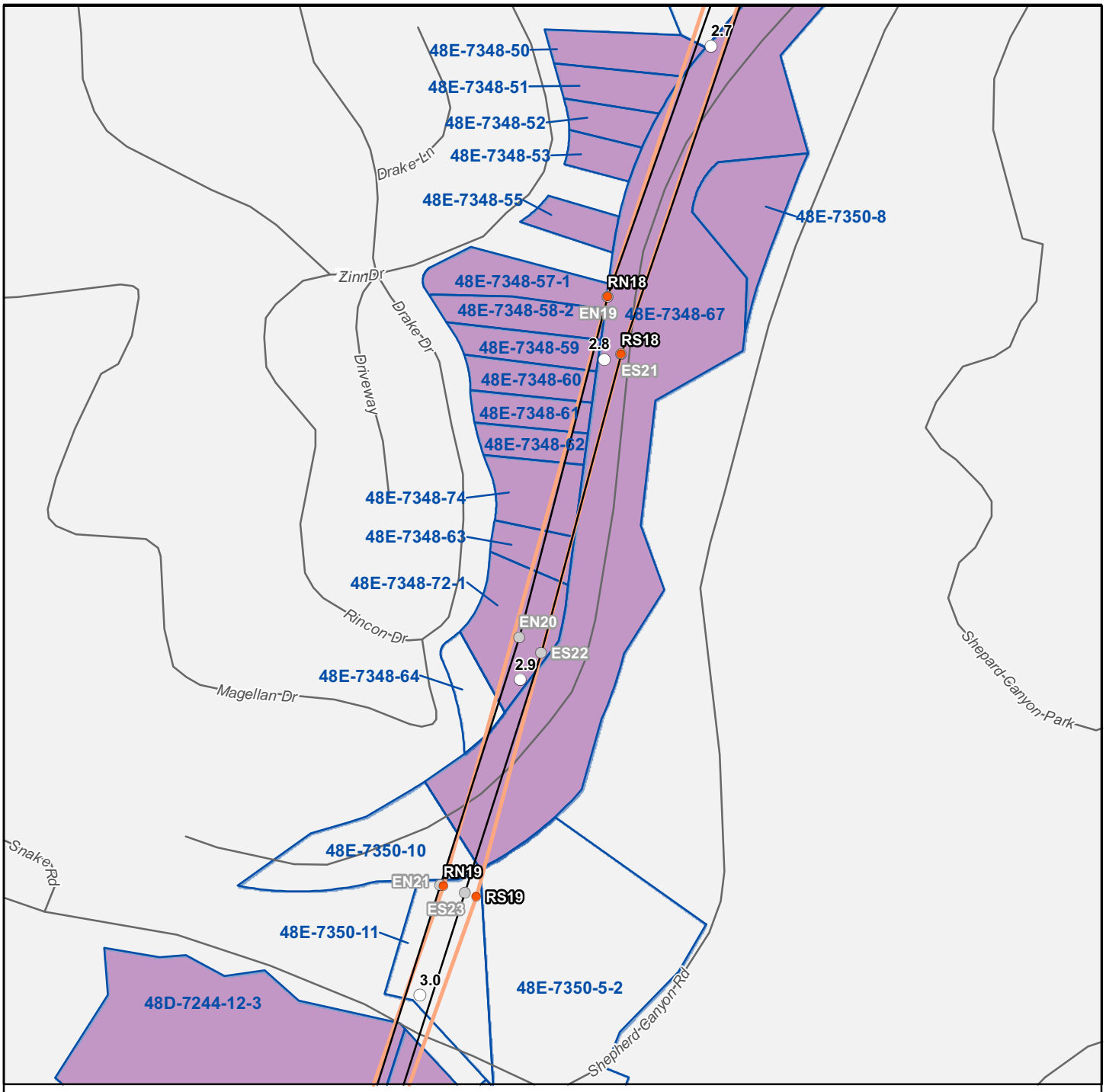
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements Map 10 of 18



Source: PG&E

Parcel Status

Existing Easement
Modification Anticipated

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

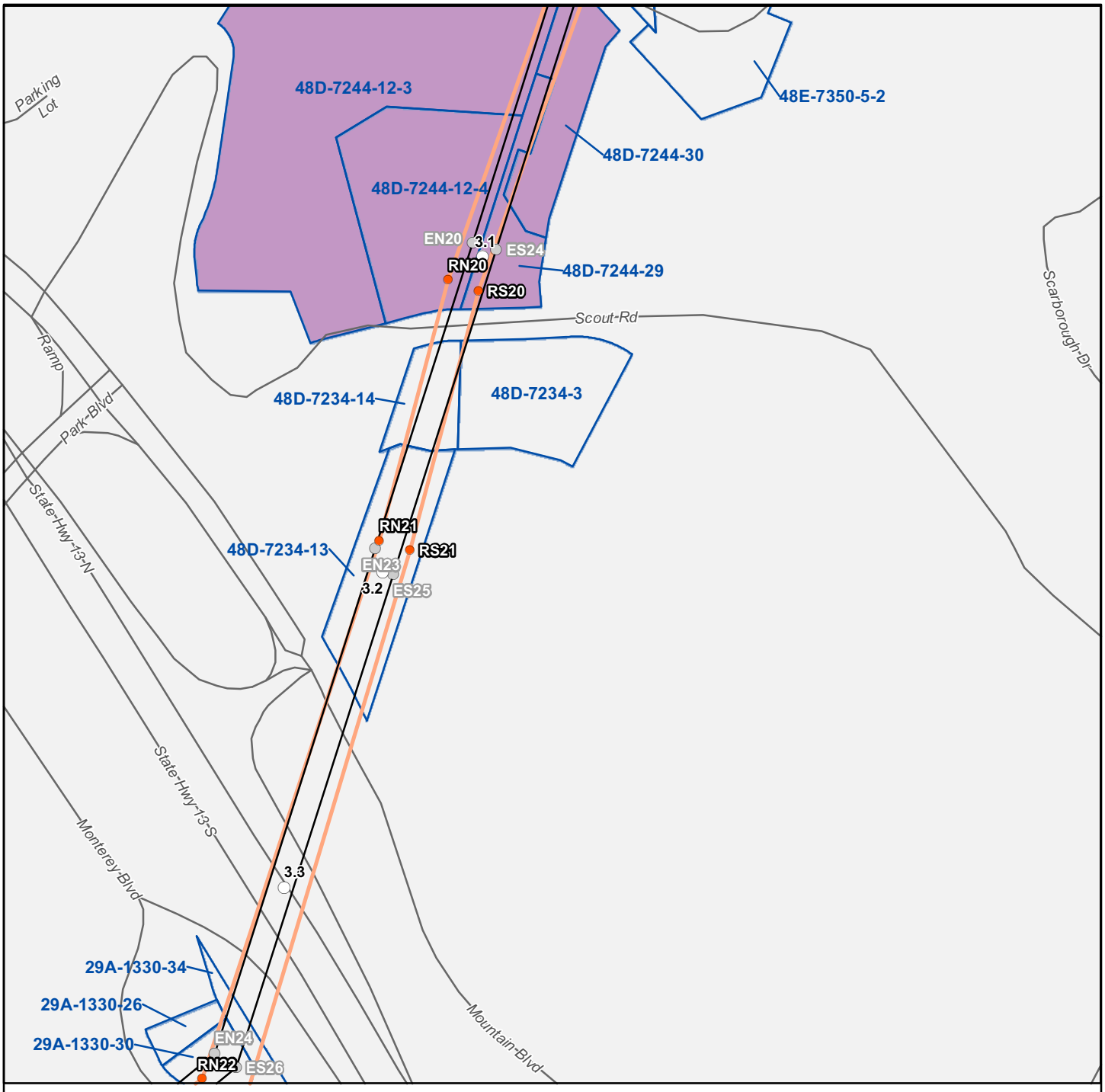
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 11 of 18



Source: PG&E

Parcel Status

Existing Easement
Modification Anticipated

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

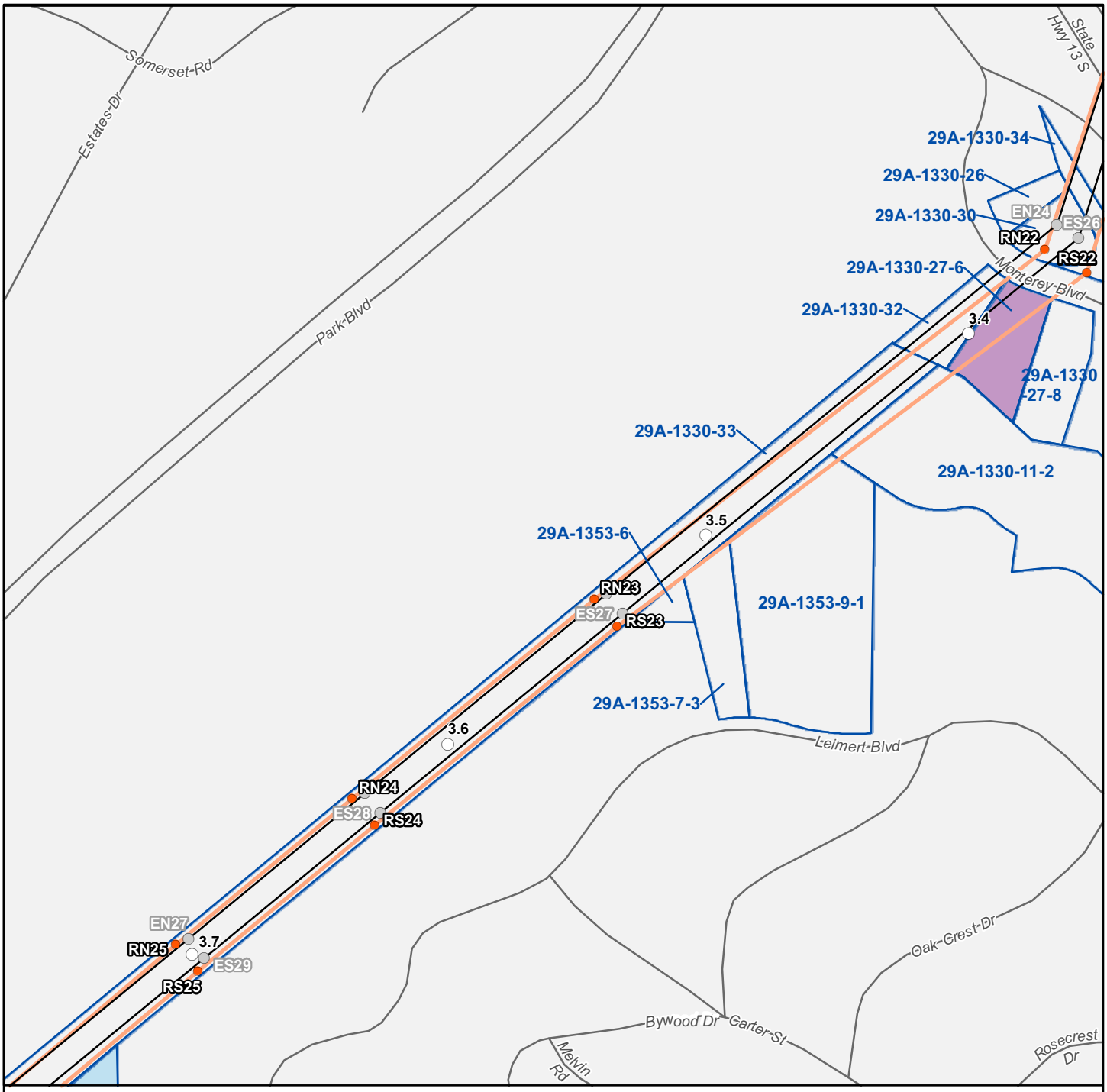
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 12 of 18



Source: PG&E

Parcel Status

- Existing Easement Modification Anticipated
- New Easement Anticipated

- Milepost

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

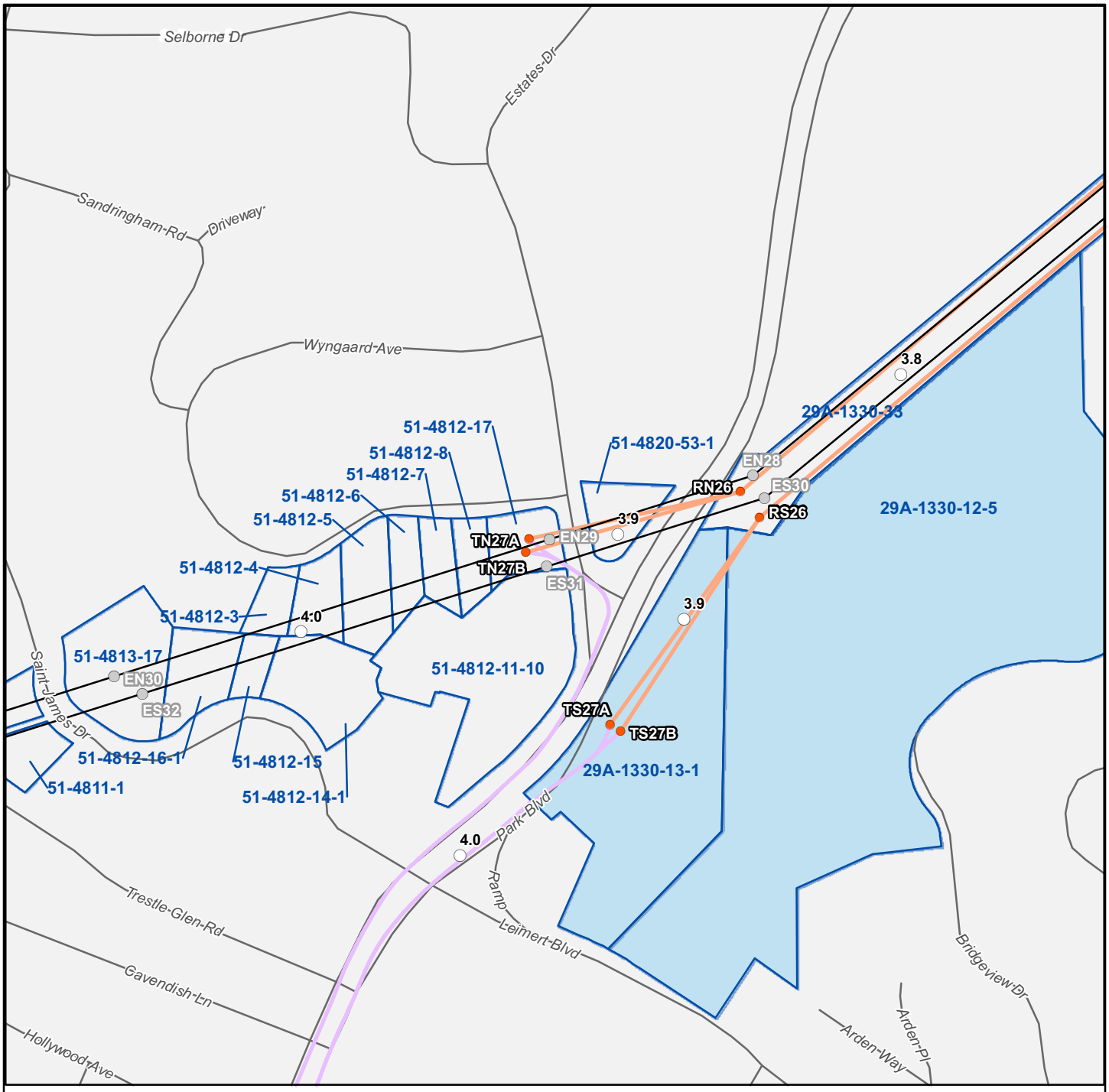
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 13 of 18



Source: PG&E

Parcel Status

New Easement Anticipated

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

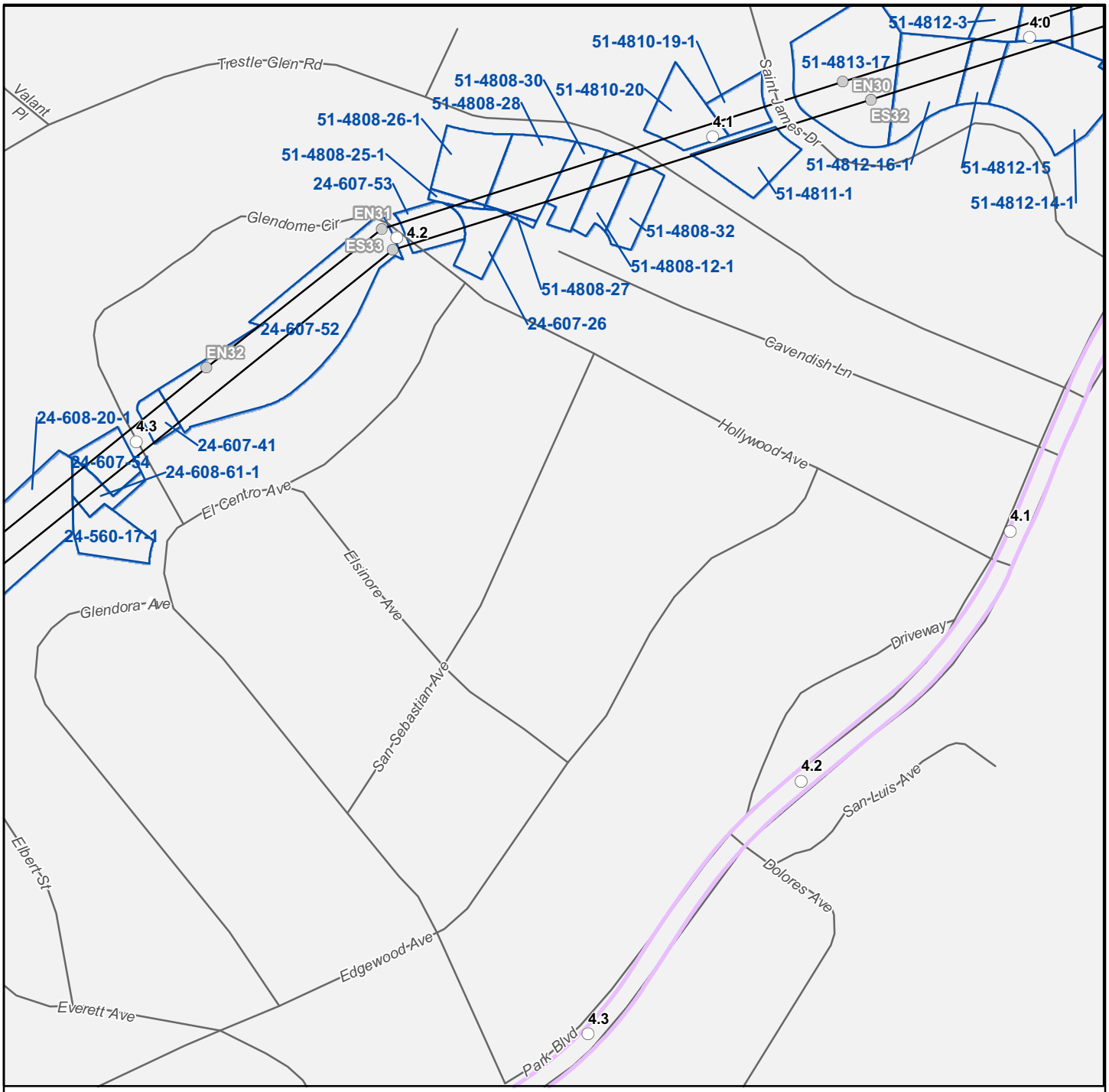
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 14 of 18



Source: PG&E

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

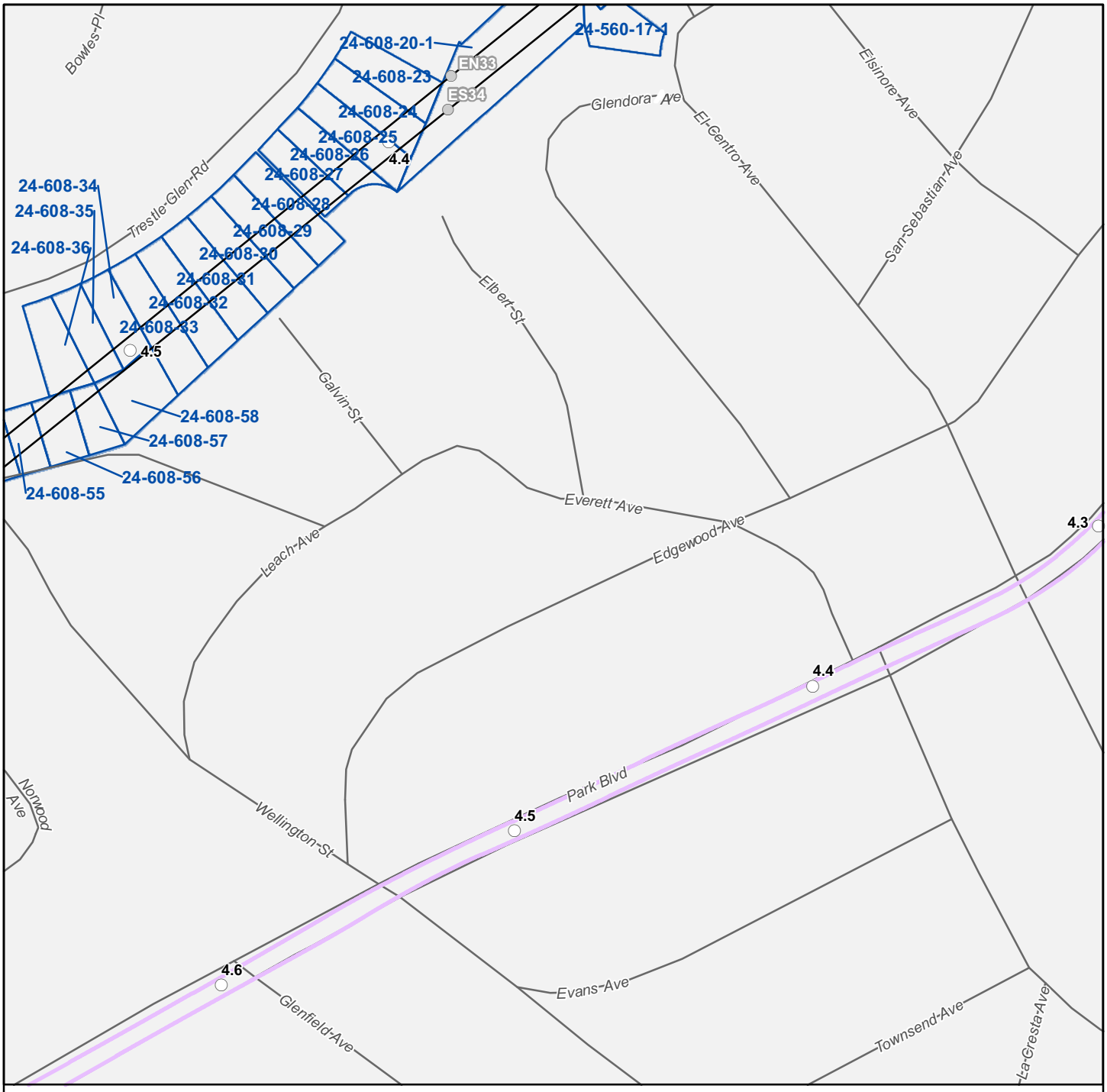
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 15 of 18



Source: PG&E

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

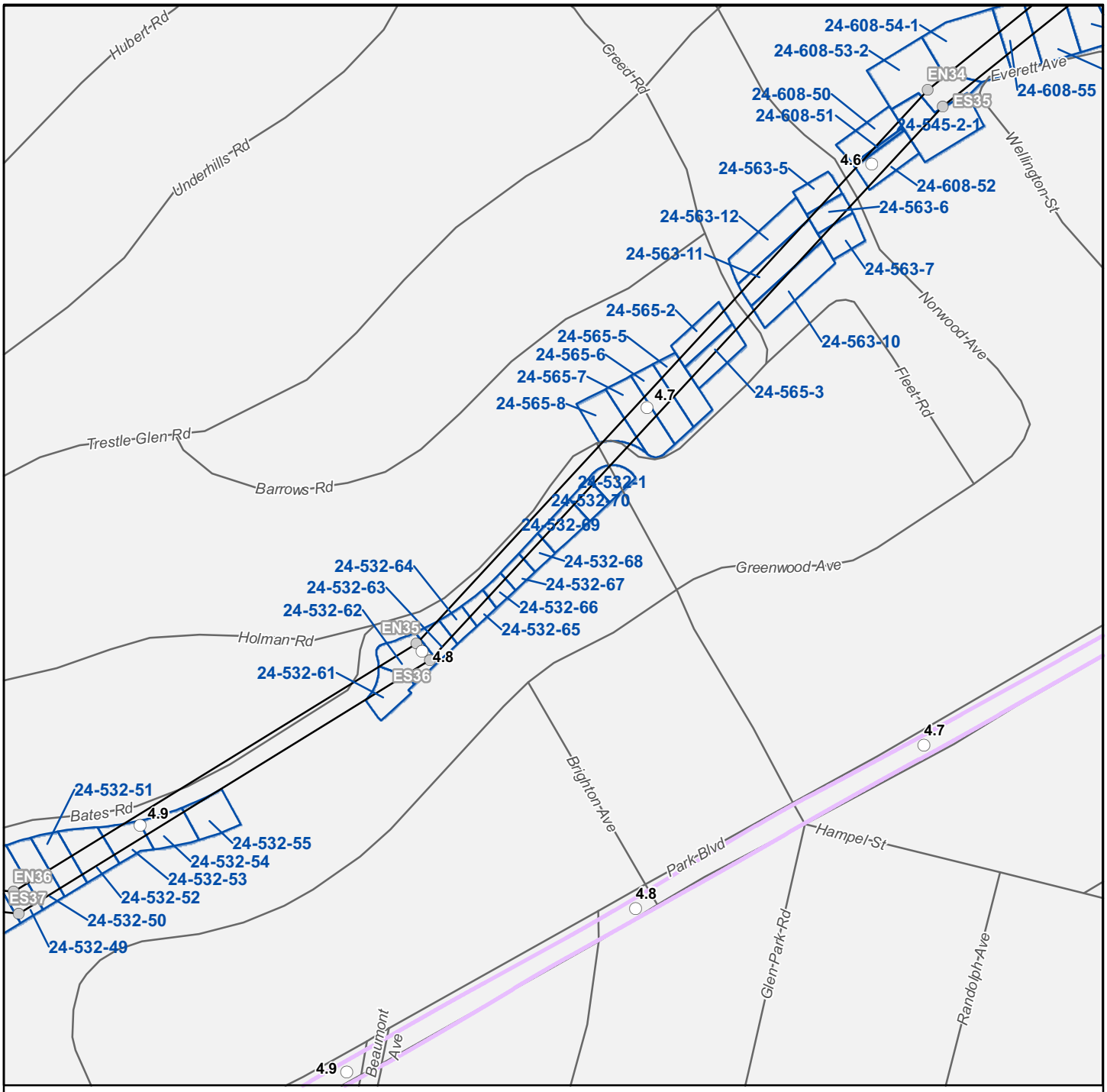
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 16 of 18



Source: PG&E

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

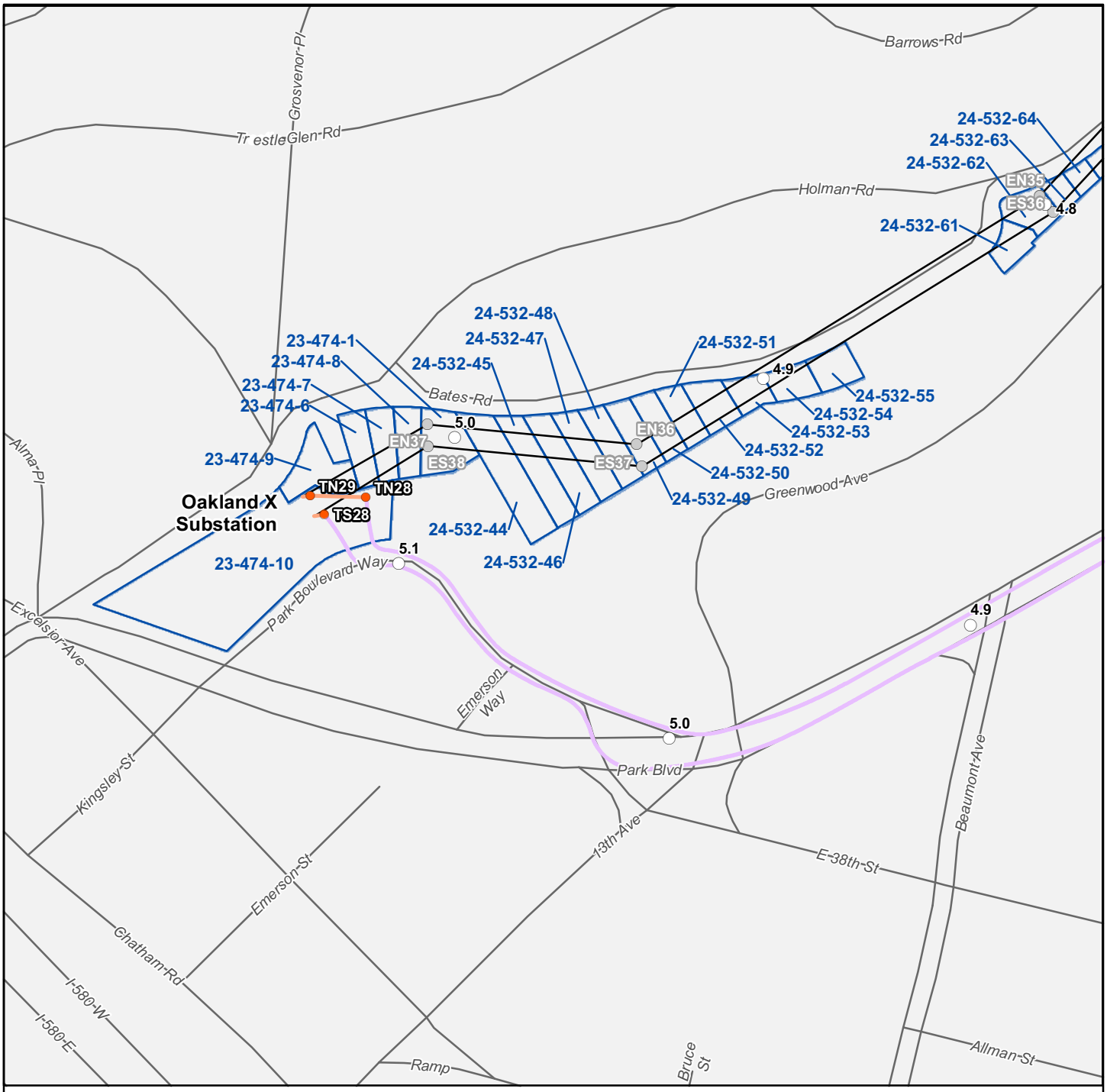
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements Map 17 of 18



Source: PG&E

Milepost

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

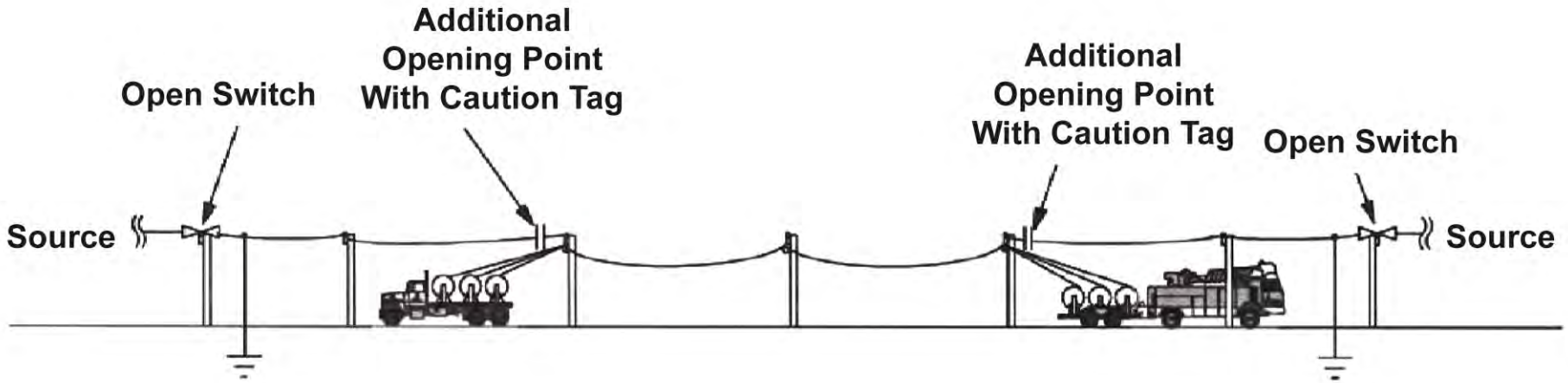
N

0 250 500

Feet

Figure 2.2-1

Existing and Anticipated Modified and New Easements
Map 18 of 18



Source: PG&E

Figure 2.3-1

Typical Conductor Stringing Diagram (including typical equipment)

Source: PG&E

Figure 2.3-2

Example Guard Structures

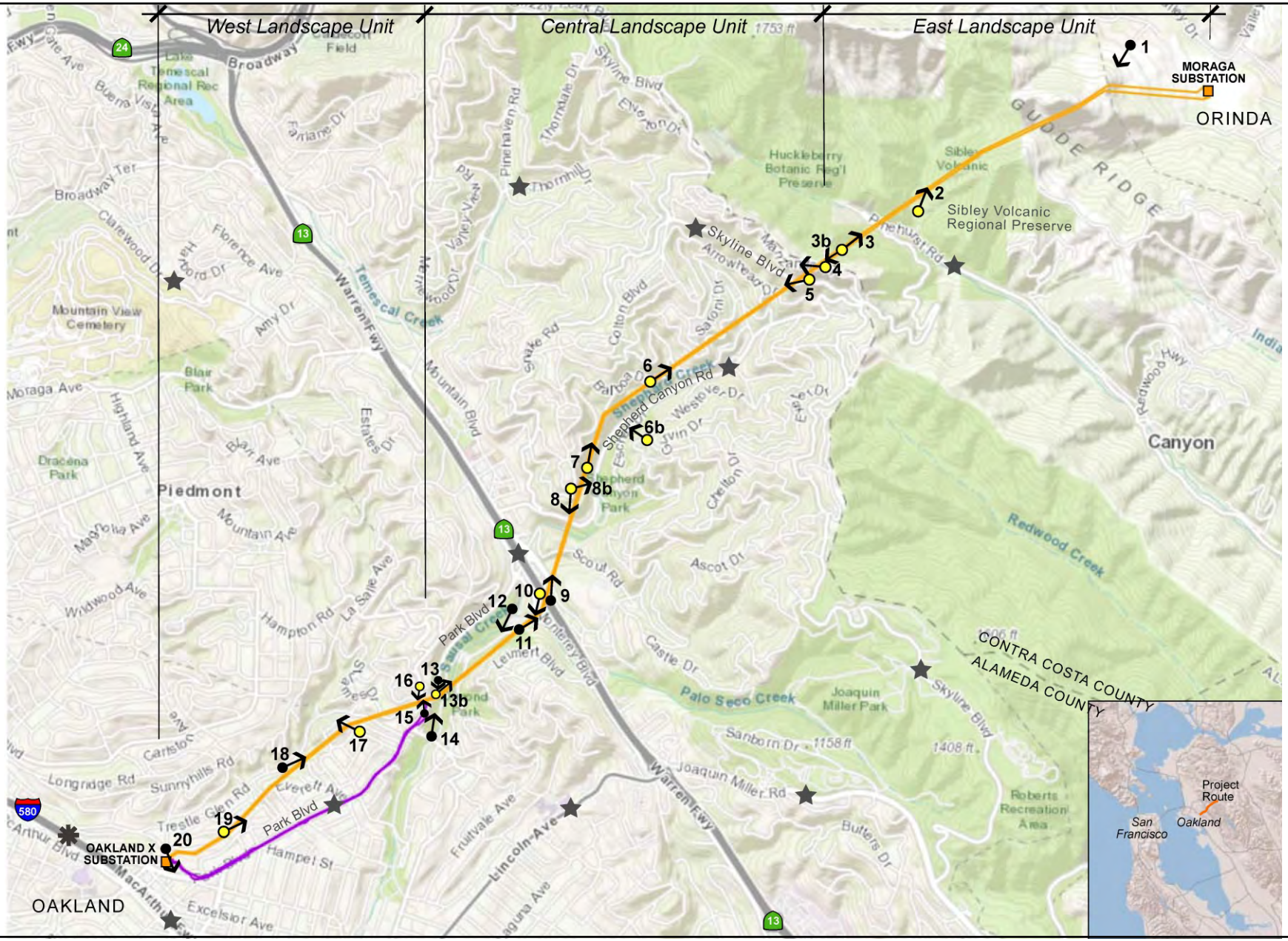
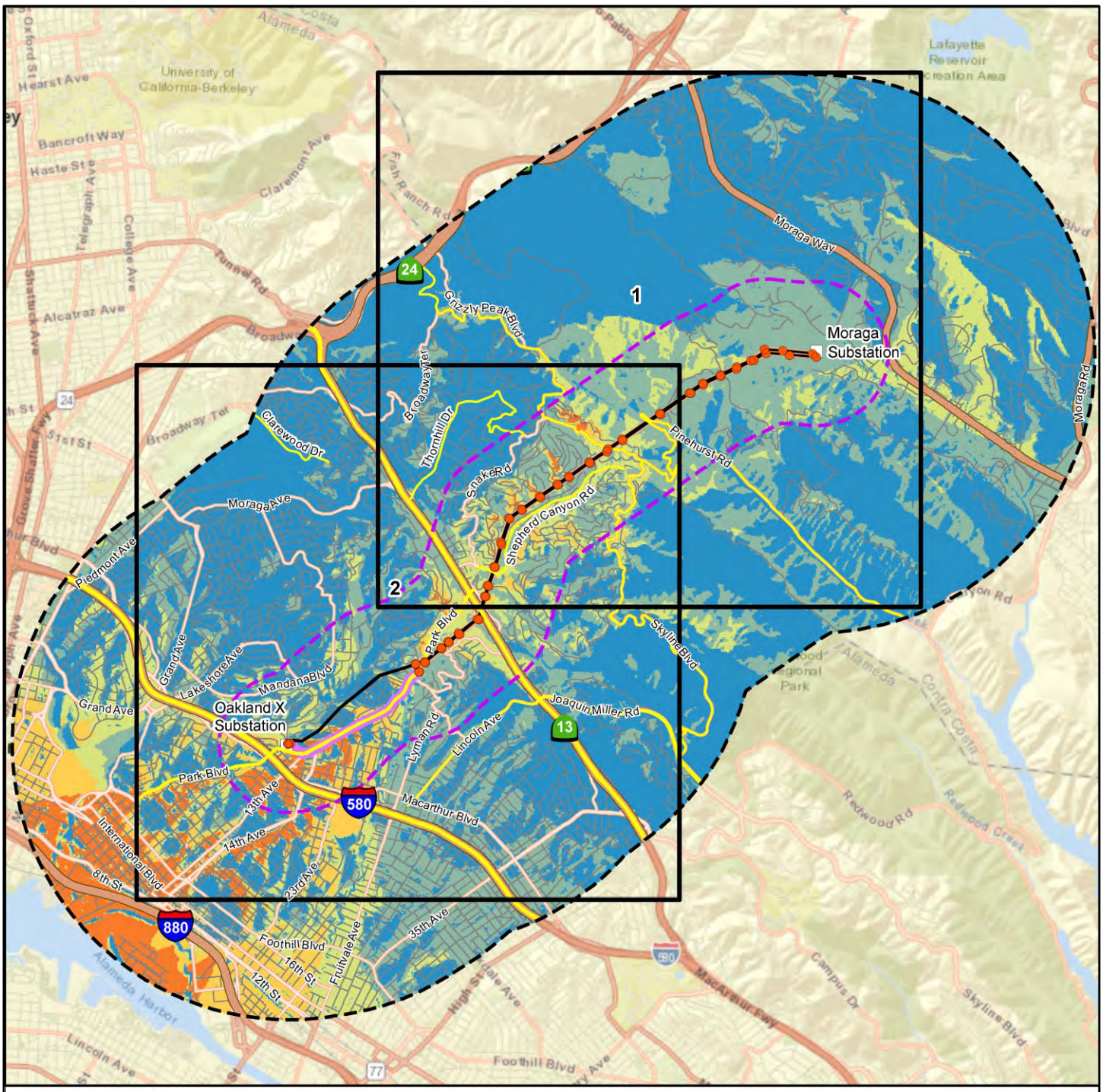


Figure 3.2-1

KOP Map



Source: PG&E

- Detail Map Sheet
- 0.5-mile Project Buffer
- 2-mile Project Buffer
- Substation

Overhead Structures

- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

- Scenic Roadway

Potential Project Visibility

Number of Structures Visible

- 0
- 1 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- >40

0 1 2 Miles

N

Figure 3.2-2a

Overview Viewshed Analysis

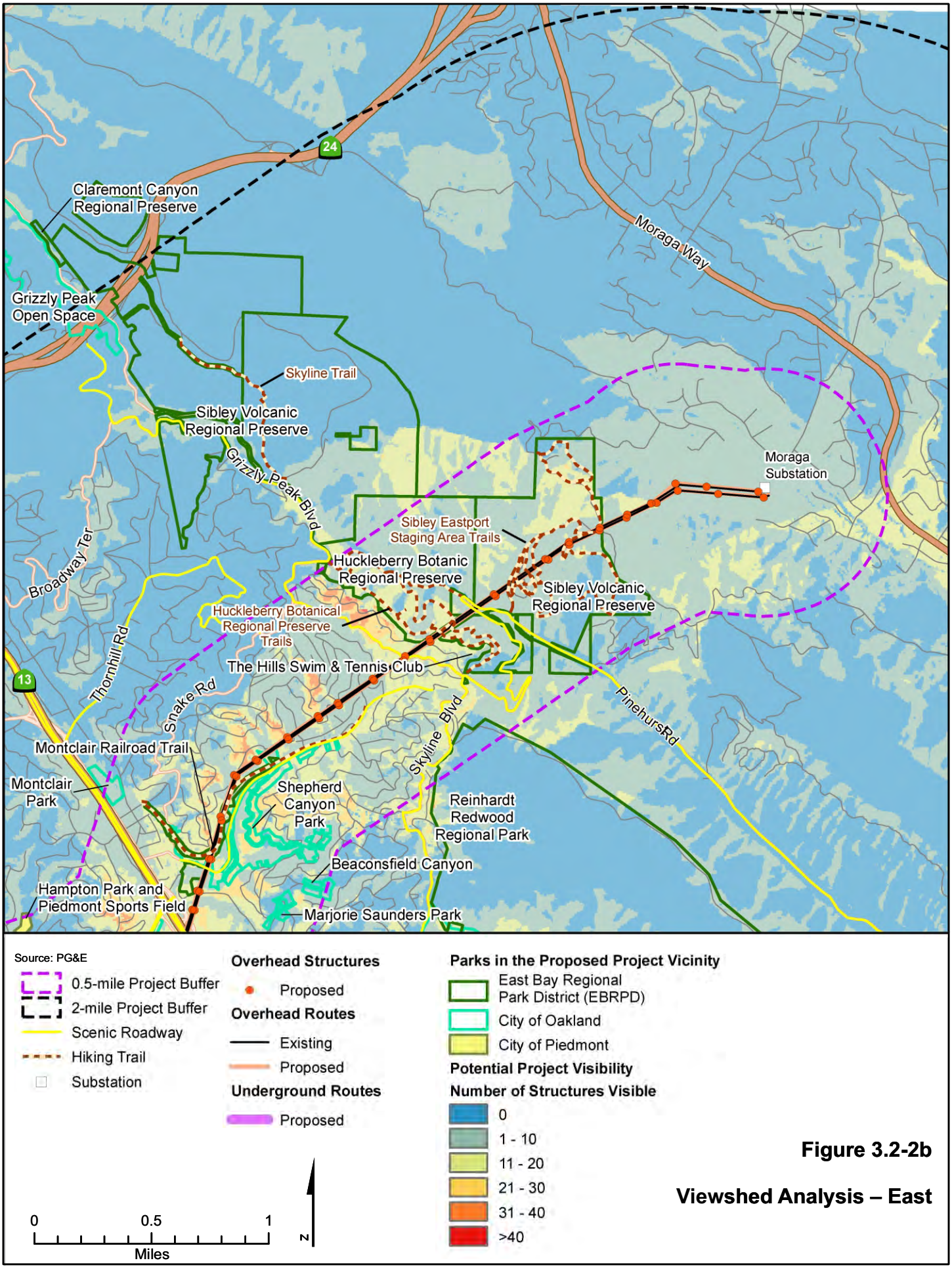


Figure 3.2-2b

Viewshed Analysis – East

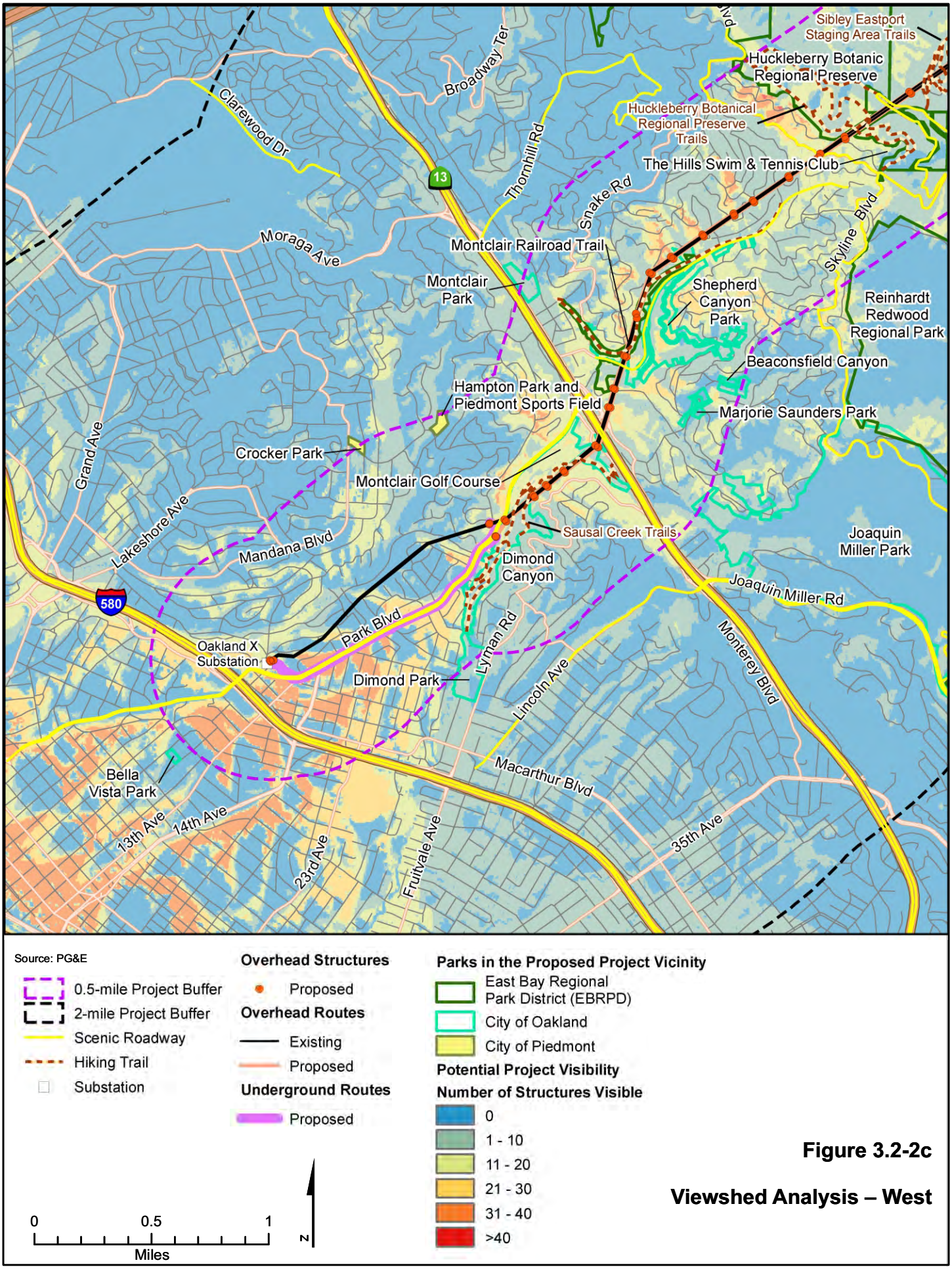


Figure 3.2-2c

Viewshed Analysis – West

Source: PG&E

Existing view from Sibley Volcanic Regional Preserve McCosker Loop Trail looking northeast (KOP 2) Structures EN8, ES8A,8B,9

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-3a

Existing View – KOP 2: Sibley Volcanic Regional Preserve McCosker Loop Trail

Source: PG&E

Visual simulation of proposed project from Sibley Volcanic Regional Preserve McCosker Loop Trail looking northeast (KOP 2) Structures RN8, Rs8

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-3b

Visual Simulation – KOP 2: Sibley Volcanic Regional Preserve McCosker Loop Trail

Source: PG&E

Existing view from East Bay Skyline Trail (Bay Area Ridge Trail)
looking northeast (KOP 3) Structures EN9,8,7,6,5,4, ES10,9,8A,8B,8,7,6,5

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-4a

Existing View – KOP 3a:
East Bay Skyline Trail Viewing Northeast

Source: PG&E

Visual simulation of proposed project from East Bay Skyline Trail (Bay Area Ridge Trail) looking northeast (KOP 3) Structures RN9,8,7,6,5,4, RS9,8,7,6,5,4

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-4b

Visual Simulation – KOP 3a: East Bay Skyline Trail Viewing Northeast

Source: PG&E

Existing view from East Bay Skyline Trail (Bay Area Ridge Trail) looking southwest (KOP 3b) Structures EN10, Es11

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-5a

Existing View – KOP 3b: East Bay Skyline Trail Viewing Southwest

Source: PG&E

Visual simulation of proposed project from East Bay Skyline Trail (Bay Area Ridge Trail) looking southwest (KOP 3b) Structures RN10, Rs10

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-5b

Visual Simulation – KOP 3b: East Bay Skyline Trail Viewing Southwest

Source: PG&E

Existing view from Manzanita Drive near The Hills Swim and Tennis Club looking west (KOP 4) Structures EN11, Es12

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-6a

Existing View – KOP 4: Manzanita Drive

Source: PG&E

Visual simulation of proposed project from Manzanita Drive near The Hills Swim and Tennis Club looking west (KOP 4)

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-6b

Visual Simulation – KOP 4: Manzanita Drive

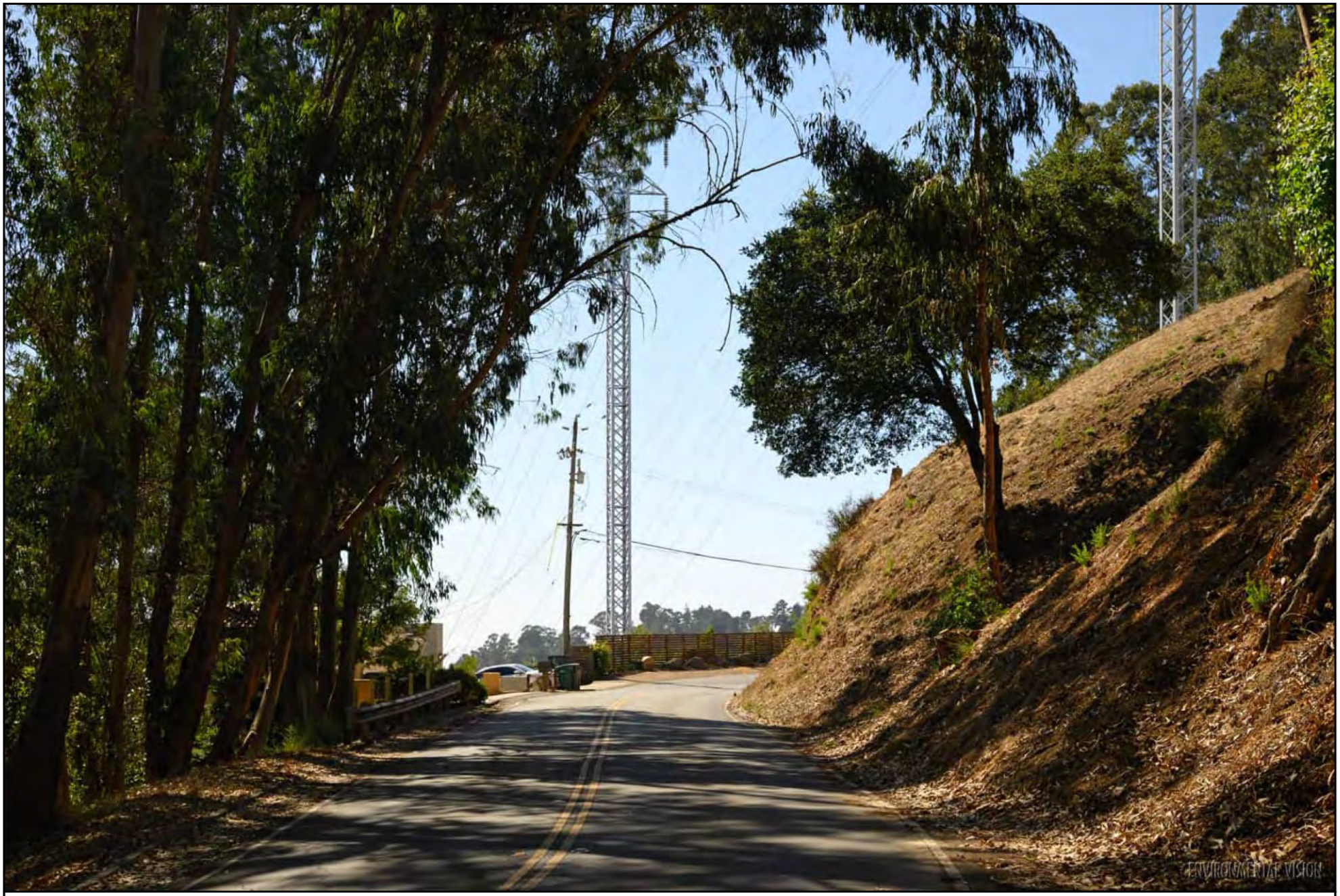
Source: PG&E

Existing view from Skyline Boulevard looking west (KOP 5) Structures EN12, Es13

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-7a

Existing View – KOP 5: Skyline Boulevard



Source: PG&E

Visual simulation of proposed project from Skyline Boulevard looking west (KOP 5) Structures RN11, Rs11

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-7b

Visual Simulation – KOP 5: Skyline Boulevard

Source: PG&E

Existing view from Balboa Drive at West Circle looking northeast (KOP6) Structures EN16,15,14,13,12, ES18,17,16,15,13

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-8a

Existing View – KOP 6a: Balboa Drive at West Circle

Source: PG&E

Visual simulation of proposed project from Balboa Drive at West Circle looking northeast (KOP6) Structures RN15,14,13,12,11, RS15,14,13,12,11

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-8b

Visual Simulation – KOP 6a: Balboa Drive at West Circle

Source: PG&E

Existing view from Thackeray Drive at Westover Drive looking northwest (KOP6b) Structures EN18,17A, ES20

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-9a

Existing View – KOP 6b: Thackeray Drive at Westover Drive

Source: PG&E

Visual simulation of proposed project from Thackeray Drive at Westover Drive looking northwest (KOP6b) Structures RN17, Rs17

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-9b

Visual Simulation – KOP 6b: Thackeray Drive at Westover Drive

Source: PG&E

Existing view from Montclair Railroad Trail in Shepherd Canyon Park looking north (KOP7) Structures EN19, Es21

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-10a

Existing View – KOP 7: Montclair Railroad Trail

Source: PG&E

Visual simulation of proposed project from Montclair Railroad Trail in Shepherd Canyon Park looking north (KOP7) Structures RN18, Rs18

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-10b

Visual Simulation – KOP 7: Montclair Railroad Trail

Source: PG&E

Existing view from Drake Drive at Rincon Drive looking south (KOP 8) Structures EN21, Es23

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-11a

Existing View – KOP 8a: Drake Drive at Rincon Drive

Source: PG&E

Visual simulation of proposed project from Drake Drive at Rincon Drive looking south (KOP 8) Structures RN19, Rs19

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-11b

Visual Simulation – KOP 8a: Drake Drive at Rincon Drive

Source: PG&E

Existing view from Drake Drive at Magellan Drive looking northeast (KOP 8b) Structures EN20, Es22

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-12a

Existing View – KOP 8b: Drake Drive at Magellan Drive

Source: PG&E

Visual simulation of proposed project from Drake Drive at Magellan Drive looking northeast (KOP 8b)

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-12b

Visual Simulation – KOP 8b: Drake Drive at Magellan Drive

Source: PG&E

Existing view from State Route 13 (Warren Freeway) looking southwest (KOP 10) Structures EN24, Es26

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-13a

Existing View – KOP 10: State Route 13

Source: PG&E

Visual simulation of proposed project from State Route 13 (Warren Freeway) looking southwest (KOP 10) Structures RN22, Rs22

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-13b

Visual Simulation – KOP 10: State Route 13

Source: PG&E

Existing view from Park Boulevard looking northeast (KOP 13b) Structures EN27,26,25, ES29,28,27

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-14a

Existing View – KOP 13b: Park Boulevard

Source: PG&E

Visual simulation of proposed project from Park Boulevard looking northeast (KOP 13b) Structures RN24,24,23, RS25,24,23

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-14b

Visual SImulation – KOP 13b: Park Boulevard

Source: PG&E

Existing view from Estates Drive near Sandringham Road looking south (KOP 16) Structures EN29, Es31

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-15a

Existing View – KOP 16: Estates Drive Near Sandringham Road

Source: PG&E

Visual simulation of proposed project from Estates Drive near Sandringham Road looking south (KOP 16) Structures RN27A,B, RS27A,B

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-15b

Visual Simulation – KOP 16: Estates Drive Near Sandringham Road

Source: PG&E

Existing view from Hollywood Avenue near San Sebastian Avenue looking northwest (KOP 17) Structures EN31, Es33

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-16a

Existing View – KOP 17: Hollywood Avenue Near San Sebastian Avenue

Source: PG&E

Visual simulation of proposed project from Hollywood Avenue near San Sebastian Avenue looking northwest (KOP 17)

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-16b

Visual Simulation – KOP 17: Hollywood Avenue Near San Sebastian Avenue

Source: PG&E

Existing view from Holman Road near Bates Road looking northeast (KOP 19) Structures EN35, Es36

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-17a

Existing View – KOP 19: Holman Road Near Bates Road

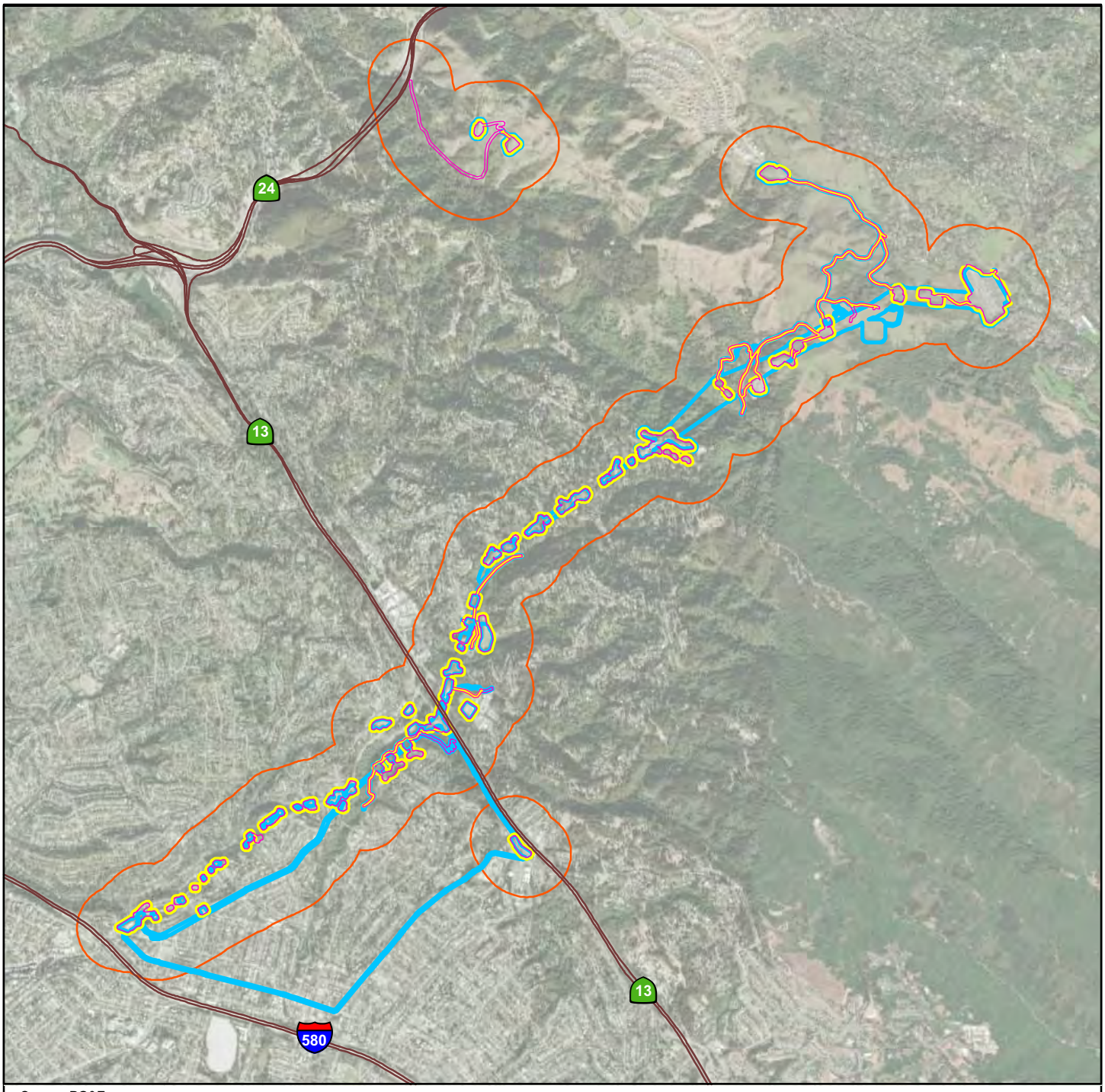
Source: PG&E

Visual simulation of proposed project from Holman Road near Bates Road looking northeast (KOP 19)

Refer to Figure 3.2-1 for viewpoint location

Figure 3.2-17b

Visual Simulation – KOP 19: Holman Road Near Bates Road



Source: PG&E

Botanical Study and Survey Area

Aquatic Study and Survey Area

Wildlife Study Area*

Wildlife Survey Area

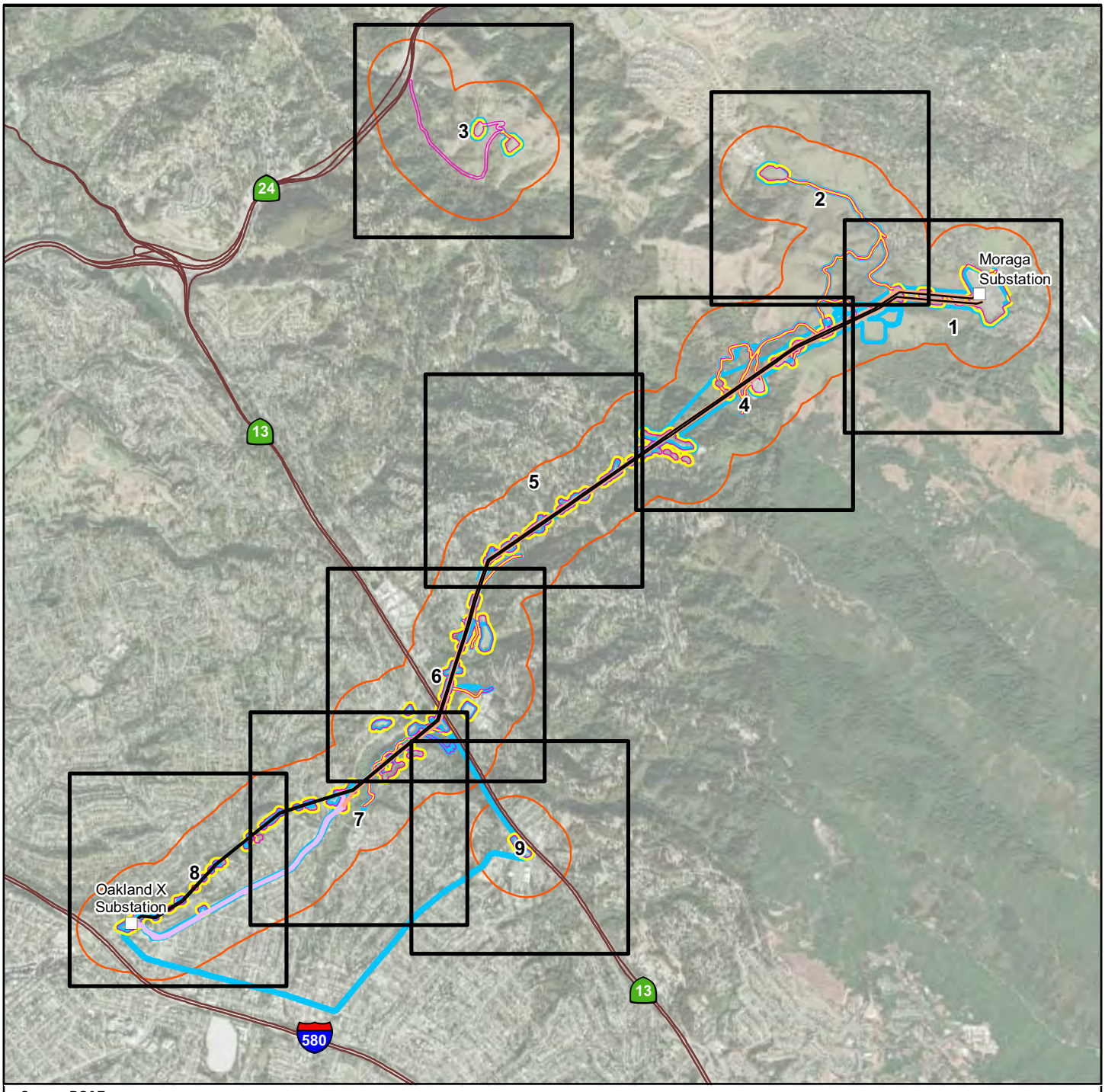
*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 0.5 1
Miles

N

Figure 3.4-1

Overview of Biological Study and Survey Areas



Source: PG&E

Botanical Study and Survey Area

Aquatic Study and Survey Area

Wildlife Study Area*

Wildlife Survey Area

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

Detail Map Sheet

Substation

Note: The detail map sheets cover the proposed project routes and construction work areas and access.

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

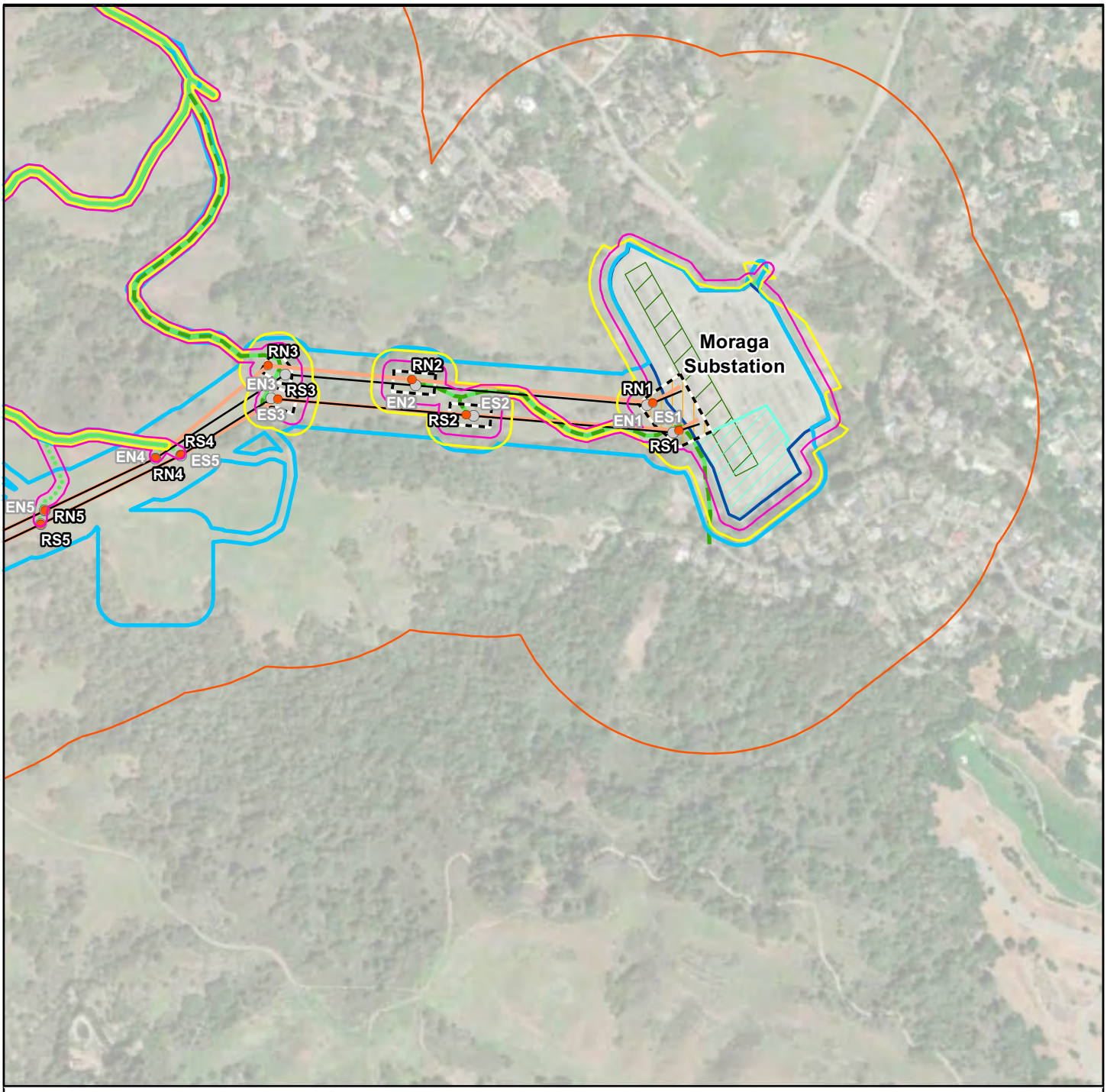
0 0.5 1

Miles

N

Figure 3.4-2

Project Components and Biological Study/Survey Areas



Source: PG&E

Botanical Study and Survey Area
Aquatic Study and Survey Area
Wildlife Study Area*
Wildlife Survey Area

Overhead Structures
Existing
Proposed

Overhead Routes
Existing
Proposed

Access
Existing
Improvement
Walk-In

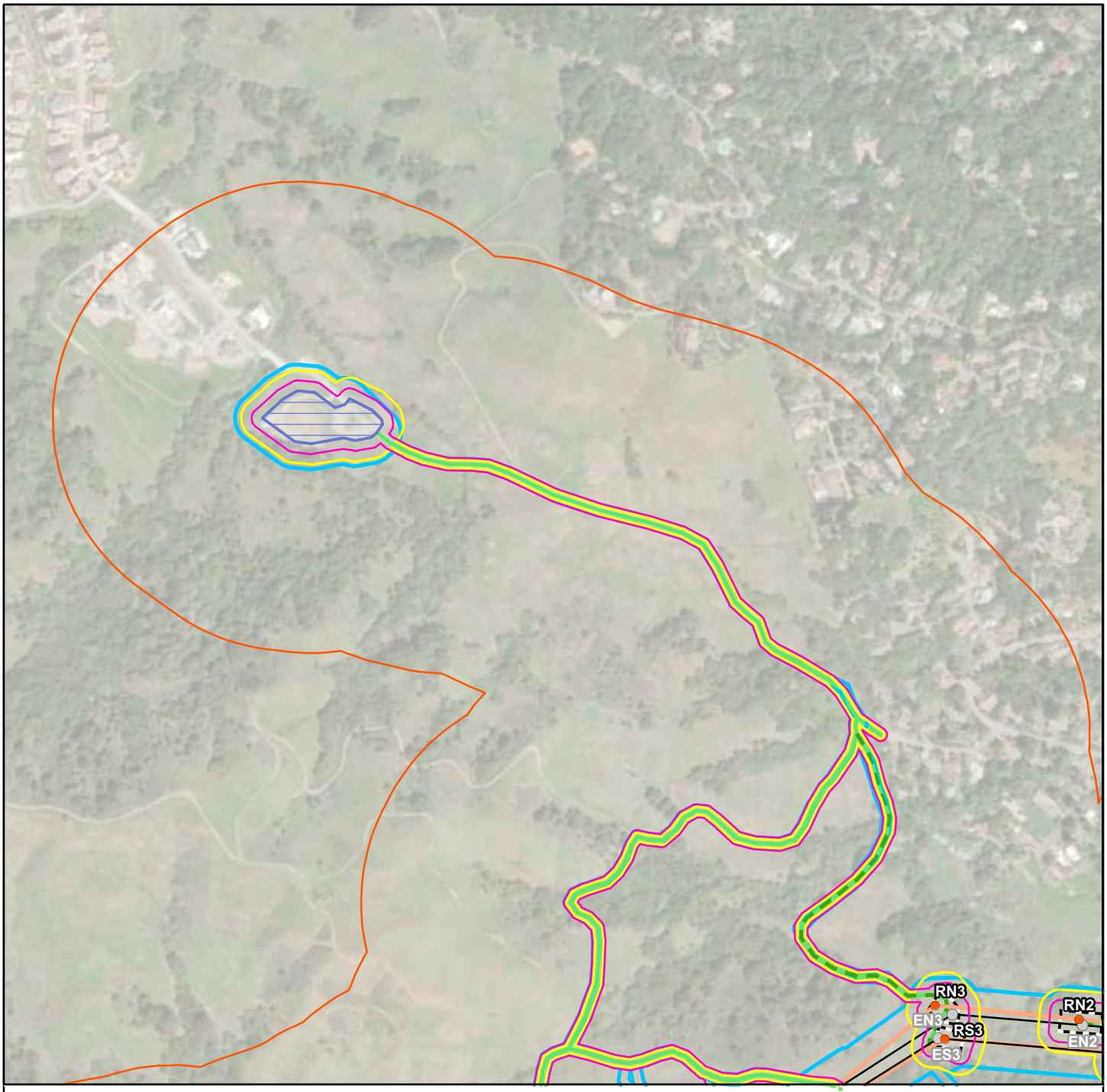
Temporary Work Areas
Moraga Substation 115 kV Breaker Work Area
Staging Area
Substation Work Area
Tension Pull Site
Work Area

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet
N

Figure 3.4-2

Project Components and Biological Study/Survey Areas
Map 1 of 9



Source: PG&E

Botanical Study and Survey Area
Aquatic Study and Survey Area
Wildlife Study Area*
Wildlife Survey Area

Overhead Structures
Existing
Proposed

Overhead Routes
Existing
Proposed

Access
Existing
Improvement
Walk-In

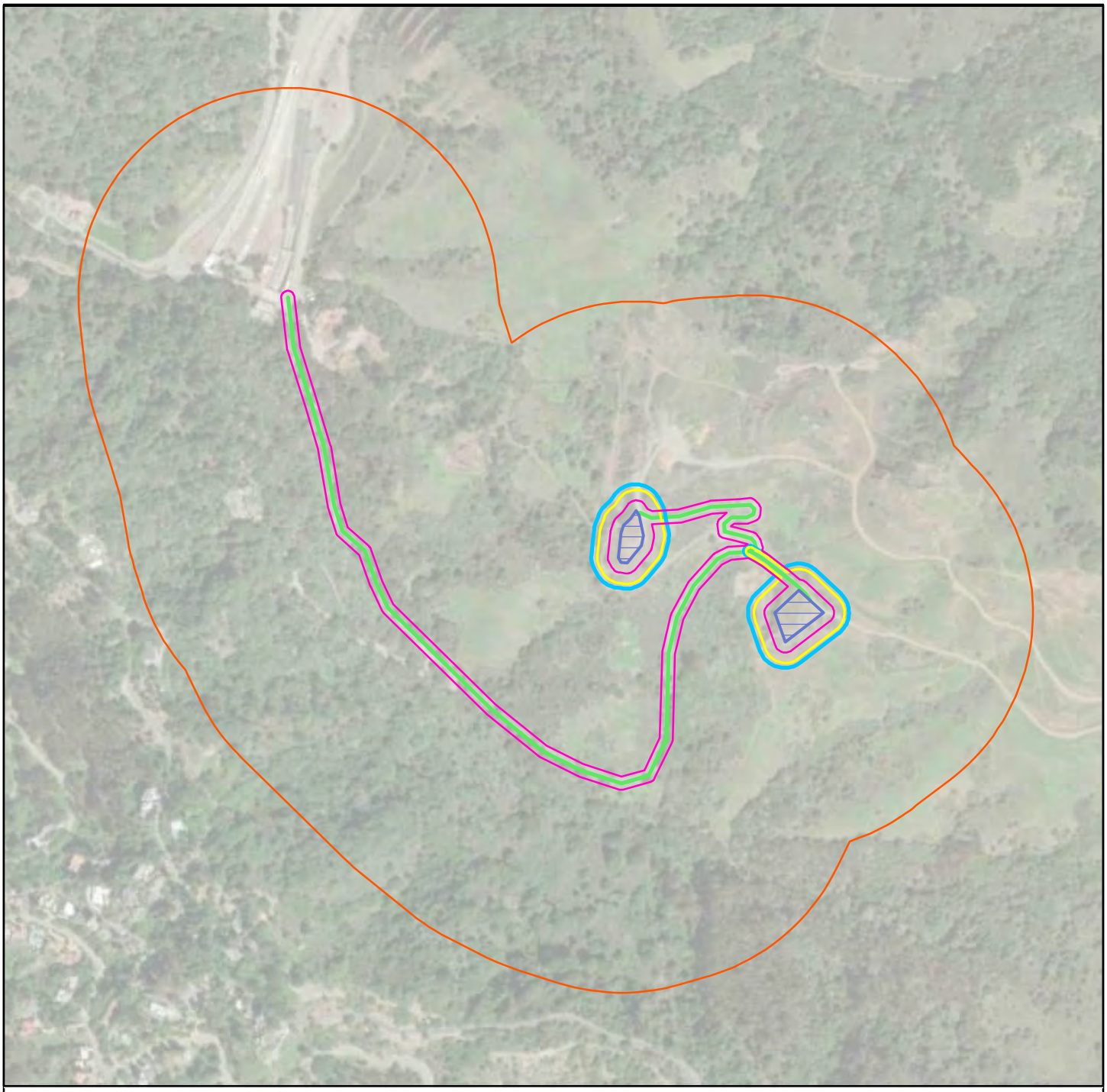
Temporary Work Areas
Landing Zone/ Staging Area
Work Area

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet
N

Figure 3.4-2

Project Components and Biological Study/Survey Areas Map 2 of 9



Source: PG&E

Botanical Study and Survey Area

Aquatic Study and Survey Area

Wildlife Study Area*

Wildlife Survey Area

Access

Existing

Temporary Work Areas

Landing Zone/ Staging Area

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

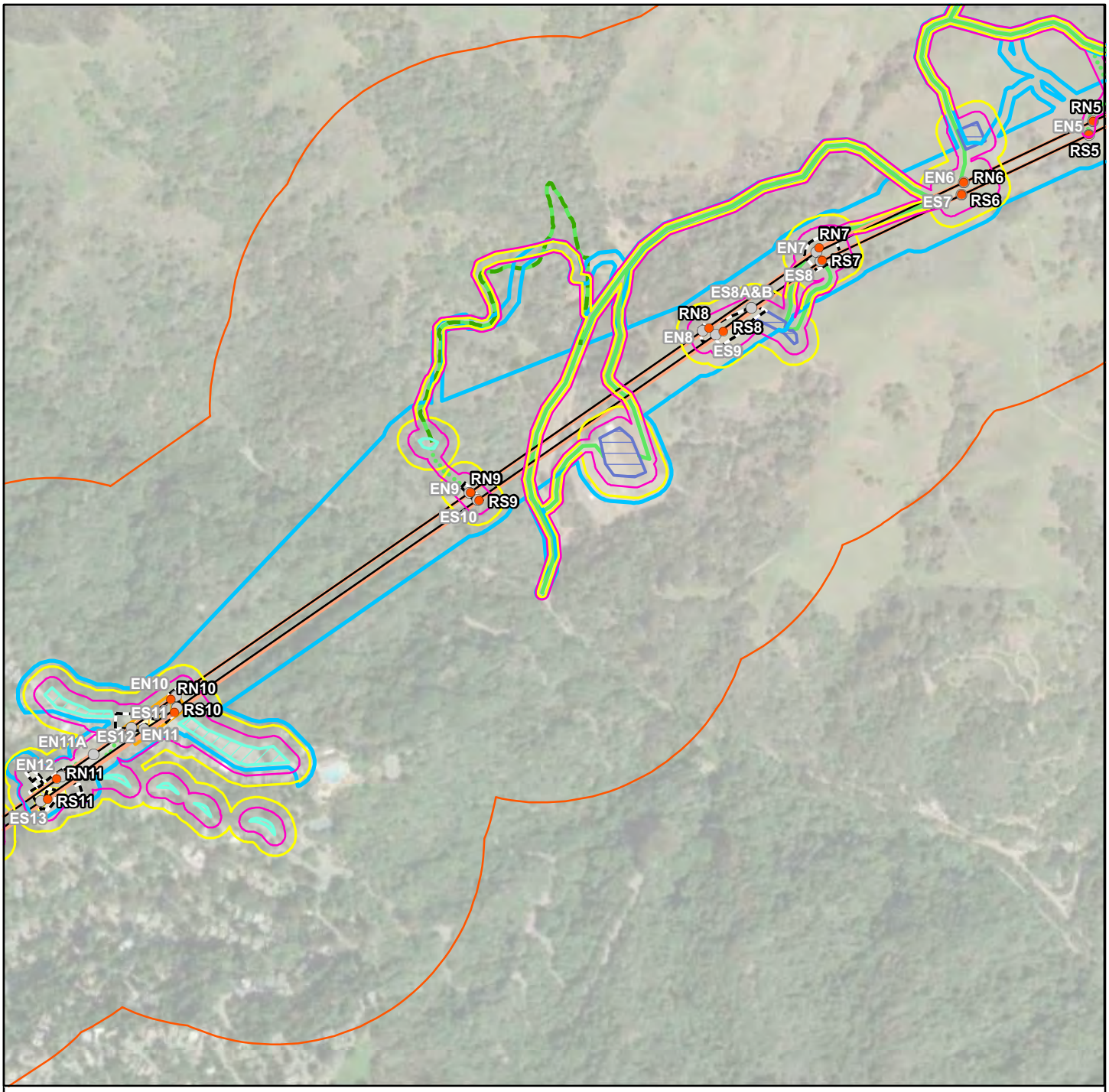
0 750

Feet

N

Figure 3.4-2

Project Components and Biological Study/Survey Areas Map 3 of 9



Source: PG&E

Botanical Study and Survey Area
Aquatic Study and Survey Area
Wildlife Study Area*
Wildlife Survey Area

Overhead Structures
Existing
Proposed

Overhead Routes
Existing
Proposed

Access
Existing
Improvement
Walk-In

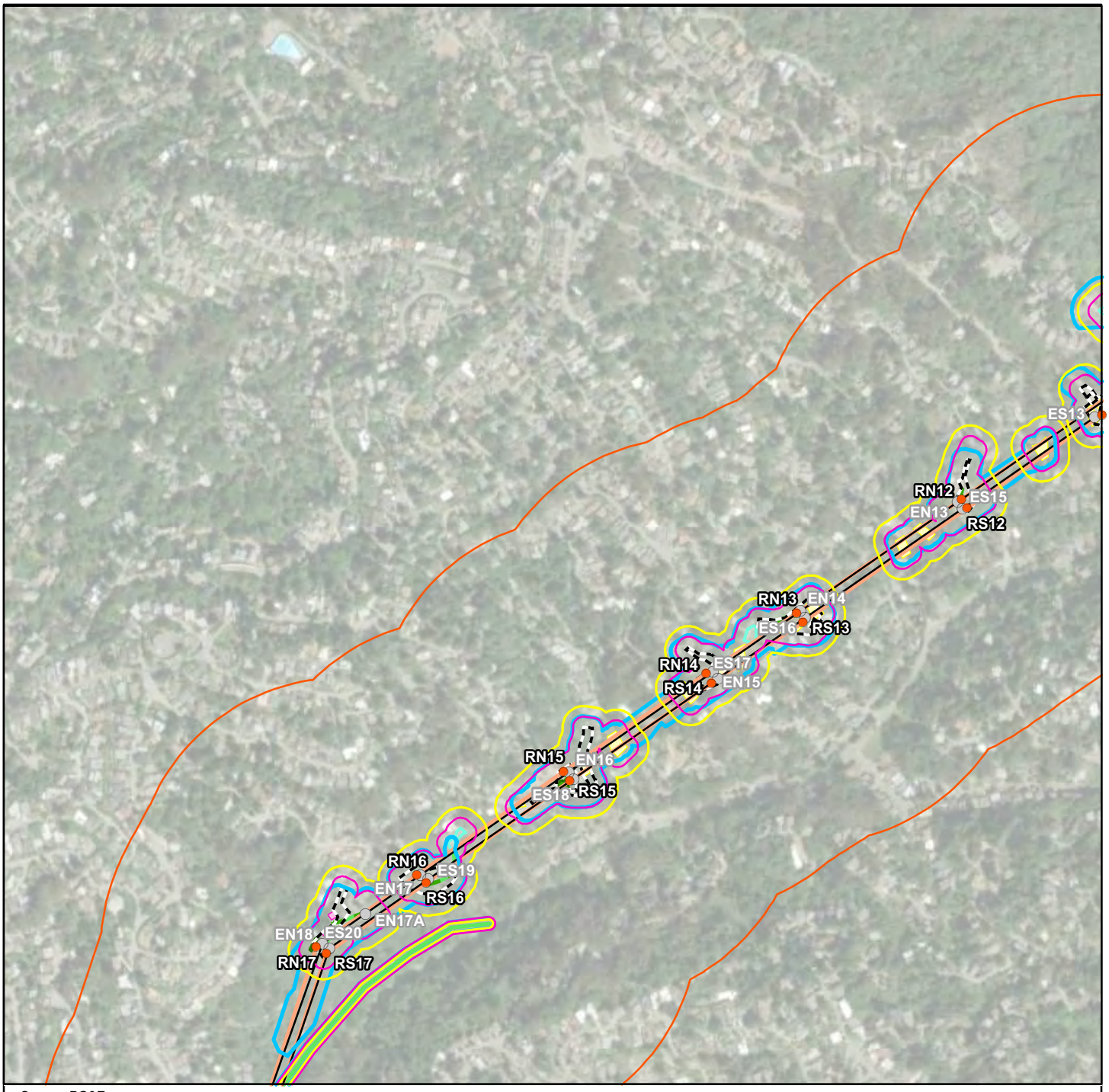
Temporary Work Areas
Guard Poles
Landing Zone/ Staging Area
Staging Area
Tension Pull Site
Work Area

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet
N

Figure 3.4-2

Project Components and Biological Study/Survey Areas Map 4 of 9



Source: PG&E

Botanical Study and Survey Area

Aquatic Study and Survey Area

Wildlife Study Area*

Wildlife Survey Area

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Access

Existing

Improvement

Temporary Work Areas

Fence Removal/Replacement

Guard Poles

Staging Area

Work Area

Veg Work/Tree Removal

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

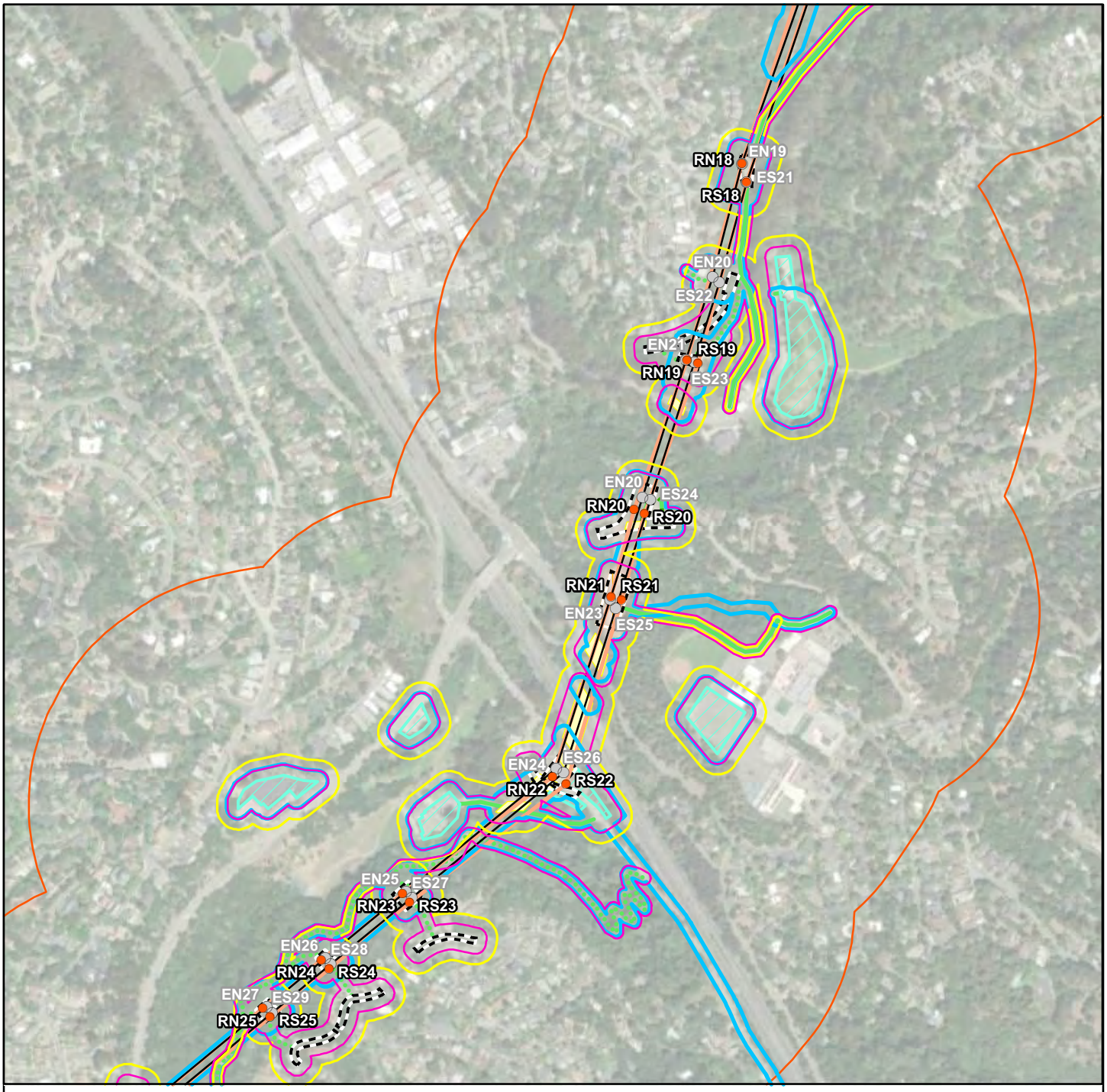
0 750

Feet

N

Figure 3.4-2

Project Components and Biological Study/Survey Areas Map 5 of 9



Source: PG&E

Botanical Study and Survey Area
Aquatic Study and Survey Area
Wildlife Study Area*
Wildlife Survey Area

Overhead Structures
Existing
Proposed

Overhead Routes
Existing
Proposed

Access
Existing
Improvement
Walk-In

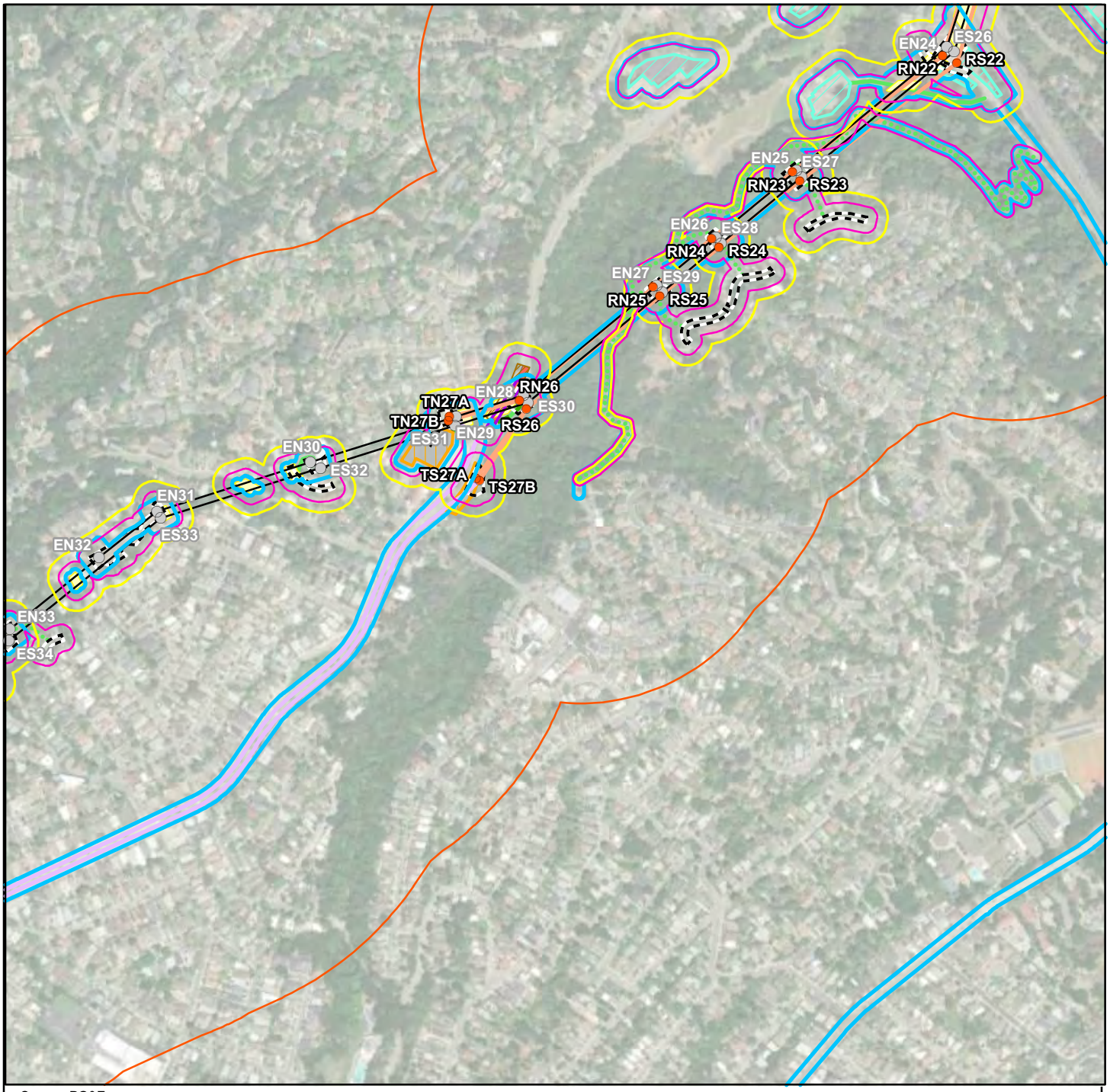
Temporary Work Areas
Guard Poles
Staging Area
Tension Pull Site
Work Area

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet
N

Figure 3.4-2

Project Components and Biological Study/Survey Areas Map 6 of 9



Source: PG&E

Botanical Study and Survey Area
Aquatic Study and Survey Area
Wildlife Study Area*
Wildlife Survey Area

Overhead Structures
Existing
Proposed

Overhead Routes
Existing
Proposed

Access
Existing
Improvement
Walk-In

Temporary Work Areas
Guard Poles
Staging Area
Tension Pull Site
Work Area

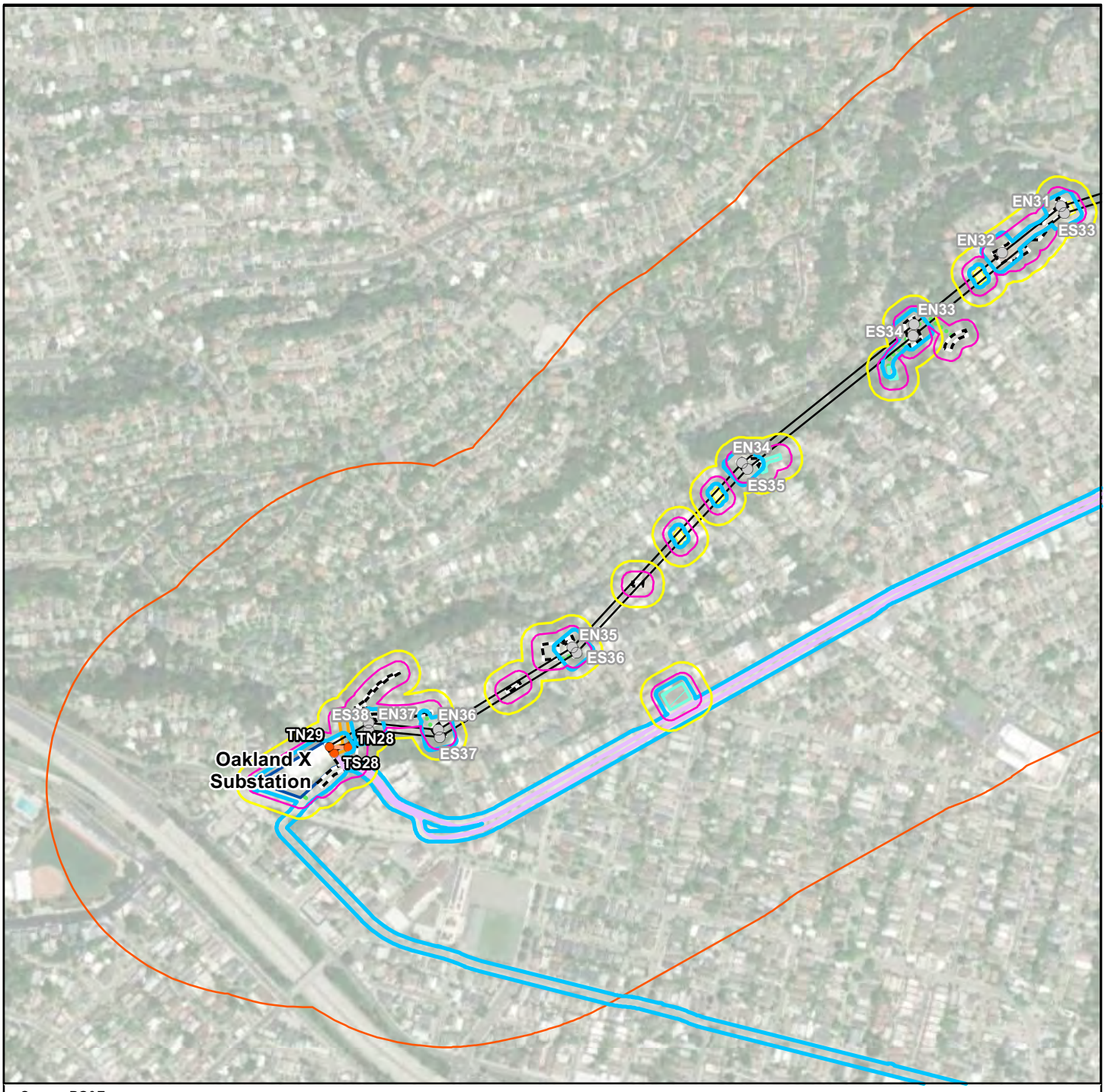
4 Lane Work Area Option
EB Work Area Option
Move Distribution Pole Option

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet
N

Figure 3.4-2

Project Components and Biological Study/Survey Areas Map 7 of 9



Source: PG&E

Botanical Study and Survey Area
Aquatic Study and Survey Area
Wildlife Study Area*
Wildlife Survey Area

Overhead Structures
Existing
Proposed

Overhead Routes
Existing
Proposed

Access
Existing
Walk-In

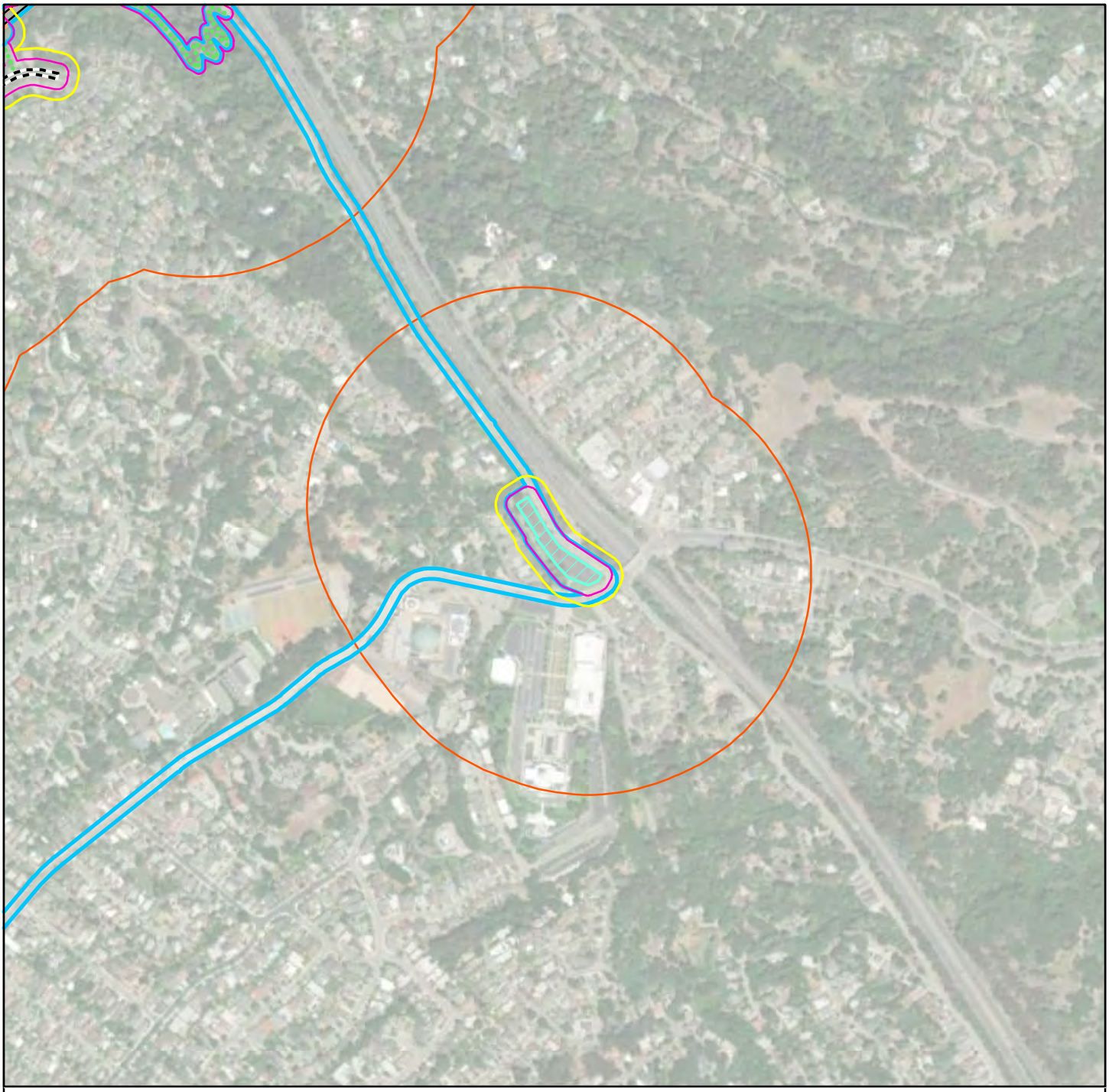
Temporary Work Areas
Guard Poles
Staging Area
Substation Work Area
Tension Pull Site
Work Area

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet
N

Figure 3.4-2

Project Components and Biological Study/Survey Areas Map 8 of 9



Source: PG&E

Botanical Study and Survey Area
Aquatic Study and Survey Area
Wildlife Study Area*
Wildlife Survey Area

Overhead Routes
Existing
Proposed

Access
Walk-In

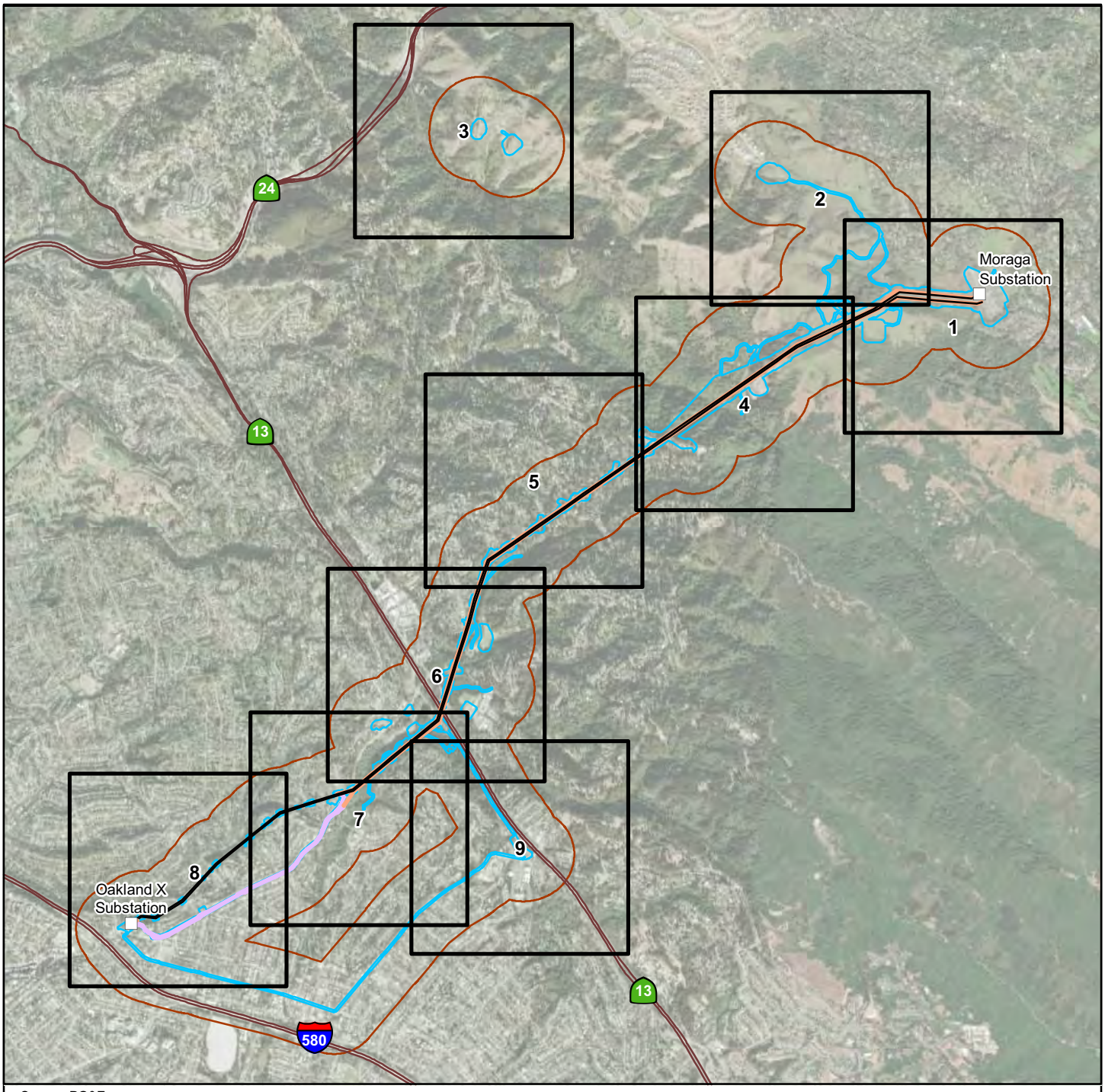
Temporary Work Areas
Staging Area
Work Area

*The Biological Study Area (BSA) is a 1,000-foot-wide buffer around the proposed project footprint. The BSA covers the same area as the Wildlife Study Area.

0 750
Feet
N

Figure 3.4-2

Project Components and Biological Study/Survey Areas Map 9 of 9



Source: PG&E

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed

- Detail Map Sheet
- Substation
- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area

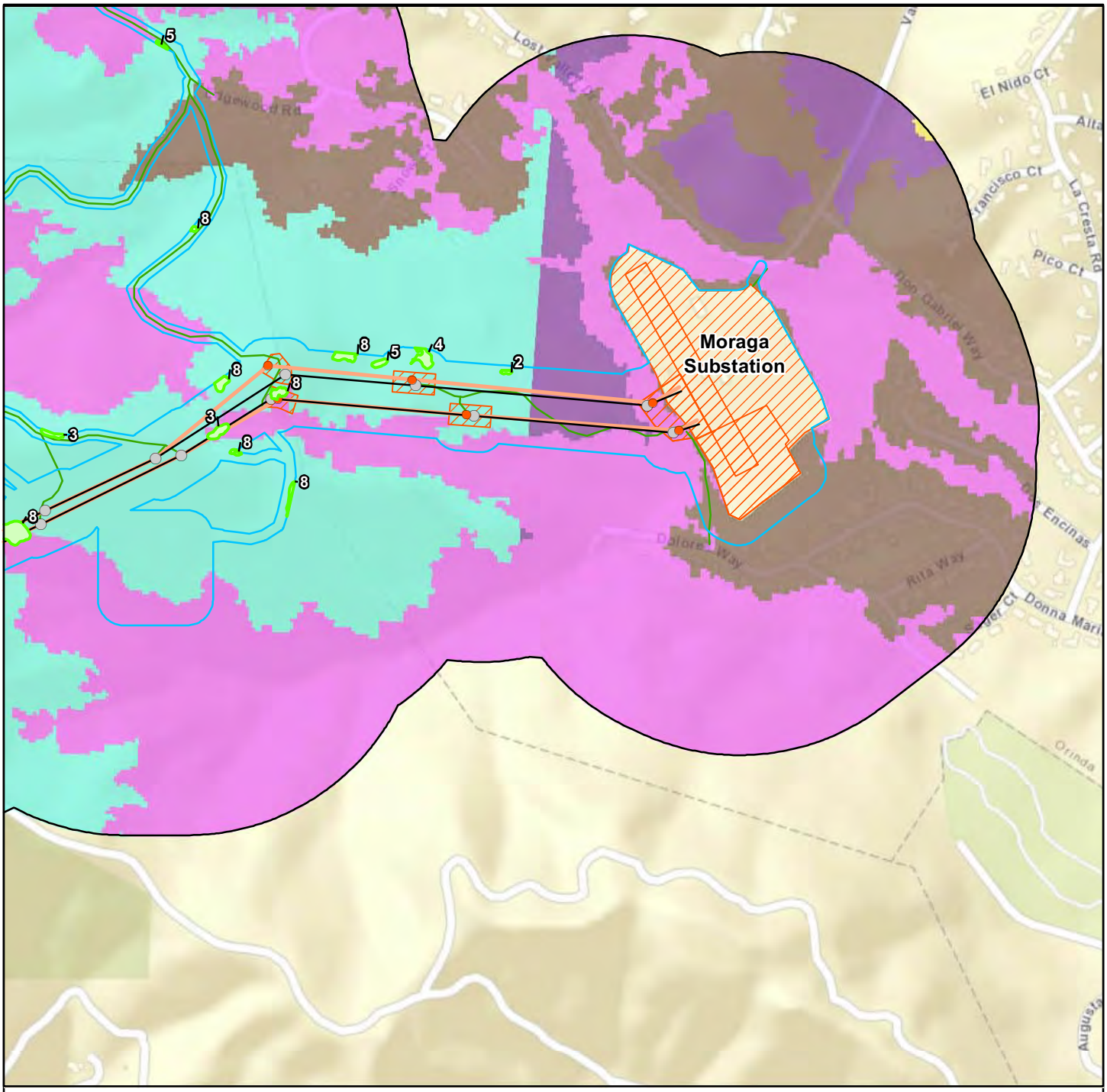
0 0.5 1
Miles

N

Note: The detail map sheets cover the proposed project routes and construction work areas and access.

Figure 3.4-3

Overview
Vegetation Communities



Source: PG&E

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Permanent Impact Areas
- Proposed Overhead Structure

Temporary Impact Areas
- Work Area

Overhead Structures
- Existing Overhead Structure

Overhead Routes
- Existing
- Proposed

- Sensitive Natural Community*

Conservation Lands Network 2.0 Vegetation Types
- Coast Live Oak
- Coyote Brush
- Moderate Grasslands
- Urban/Developed (General)
- Warm Grasslands

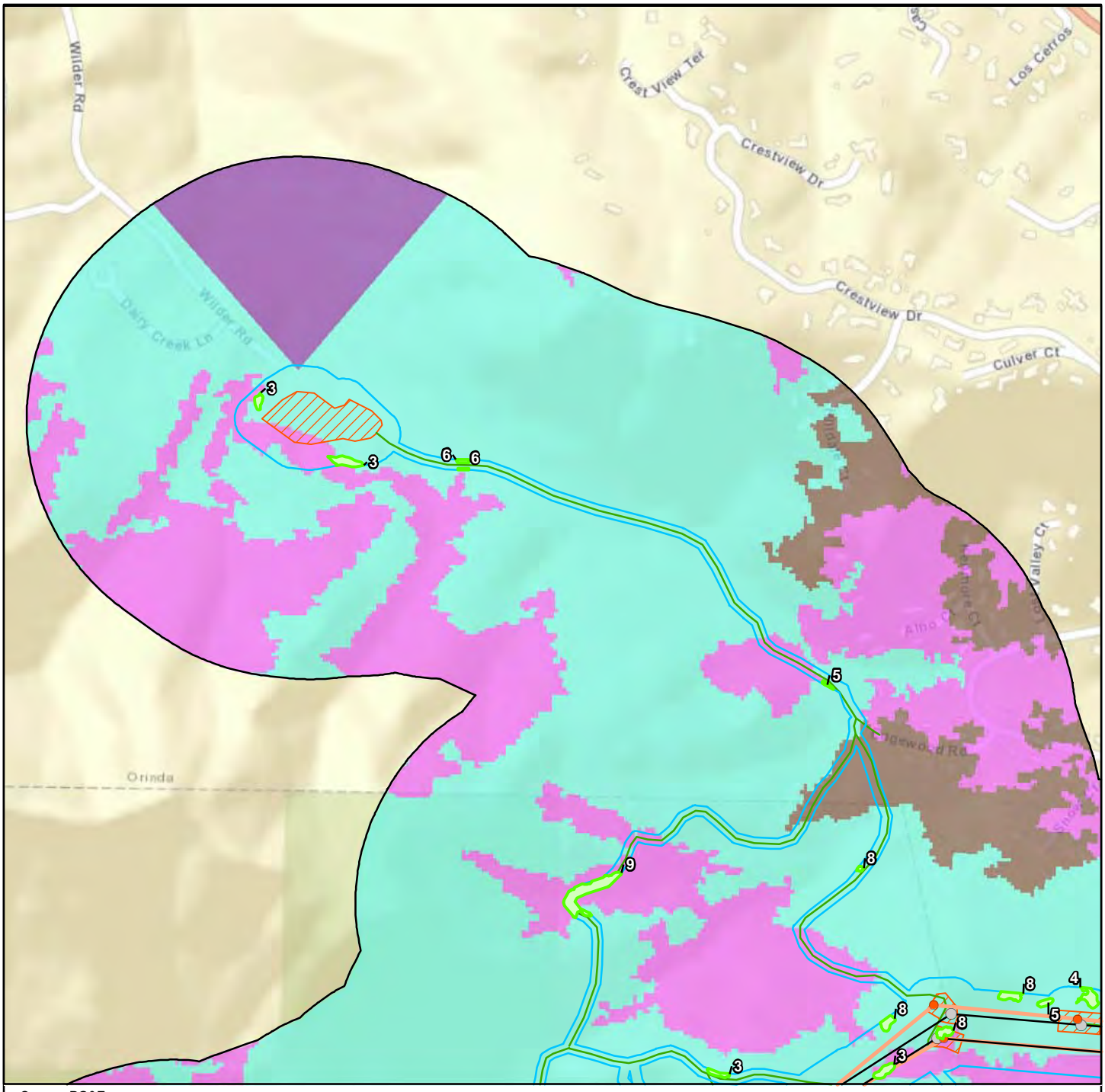
***Sensitive Natural Communities (Nomad 2022)**
1. Arctostaphylos crustacea Shrubland Alliance
2. Carex densa Provisional Herbaceous Alliance
3. Elymus glaucus Herbaceous Alliance
4. Elymus triticoides Herbaceous Alliance
5. Erythranthe guttata Herbaceous Alliance
6. Salix lasiolepis Shrubland Association
7. Sequoia sempervirens Forest Alliance
8. Stipa spp. Herbaceous Alliance
9. Umbellularia californica Forest Alliance

0 400
Feet

N

Figure 3.4-3

Vegetation Communities
Map 1 of 9



Source: PG&E

Botanical Study and Survey Area

1,000-foot Buffer of the Botanical Study and Survey Area

Project Access

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Overhead Structures

Existing Overhead Structure

Overhead Routes

Existing

Proposed

Sensitive Natural Community*

Conservation Lands Network 2.0 Vegetation Types

Coast Live Oak

Moderate Grasslands

Urban/Developed (General)

Warm Grasslands

***Sensitive Natural Communities (Nomad 2022)**

1. Arctostaphylos crustacea Shrubland Alliance
2. Carex densa Provisional Herbaceous Alliance
3. Elymus glaucus Herbaceous Alliance
4. Elymus triticoides Herbaceous Alliance
5. Erythranthe guttata Herbaceous Alliance
6. Salix lasiolepis Shrubland Association
7. Sequoia sempervirens Forest Alliance
8. Stipa spp. Herbaceous Alliance
9. Umbellularia californica Forest Alliance

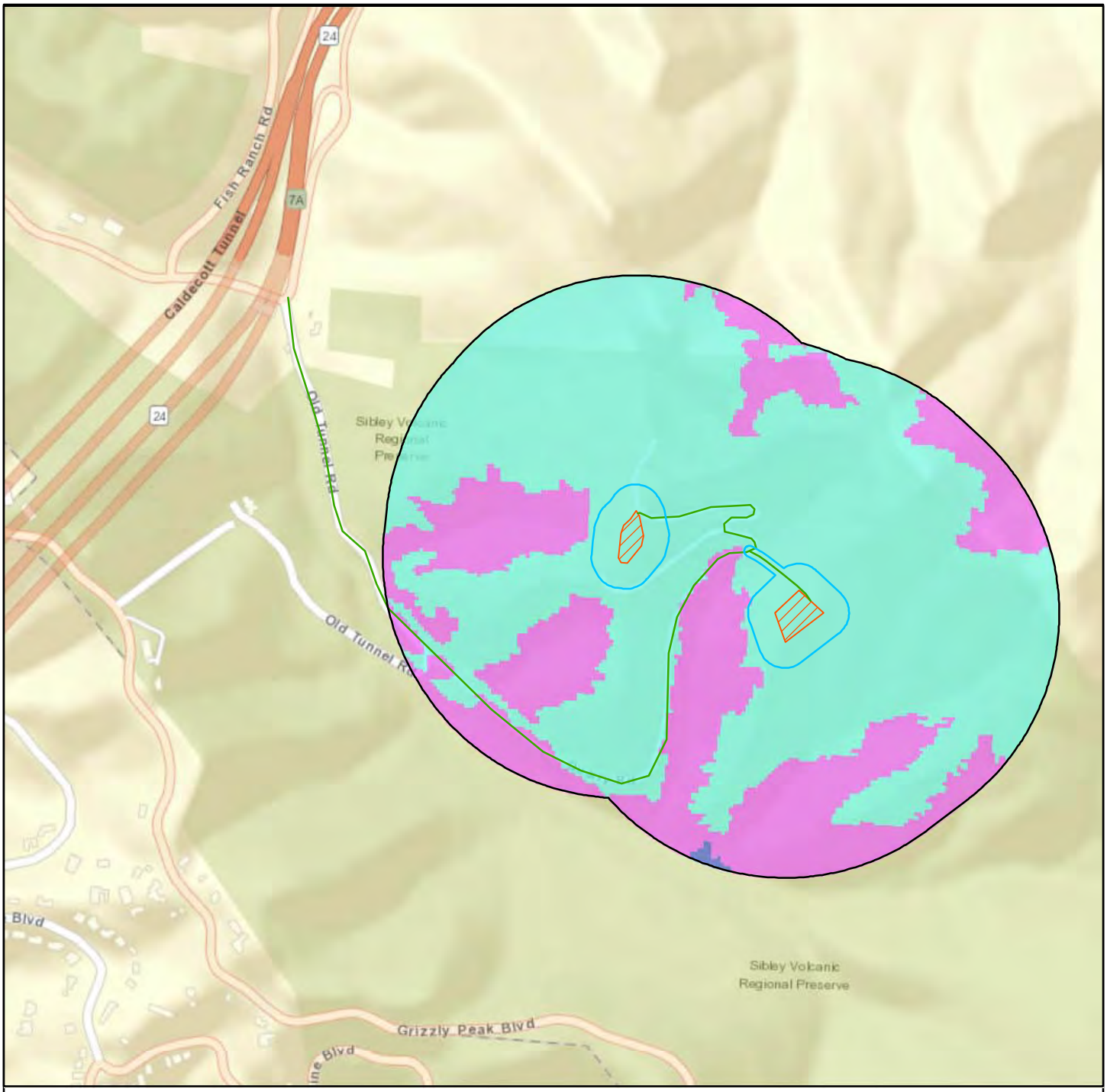
0 400

Feet

N

Figure 3.4-3

Vegetation Communities
Map 2 of 9



Source: PG&E

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Temporary Impact Areas
- Work Area

- Sensitive Natural Community*

Conservation Lands Network 2.0 Vegetation Types
- Coast Live Oak
- Eucalyptus
- Moderate Grasslands

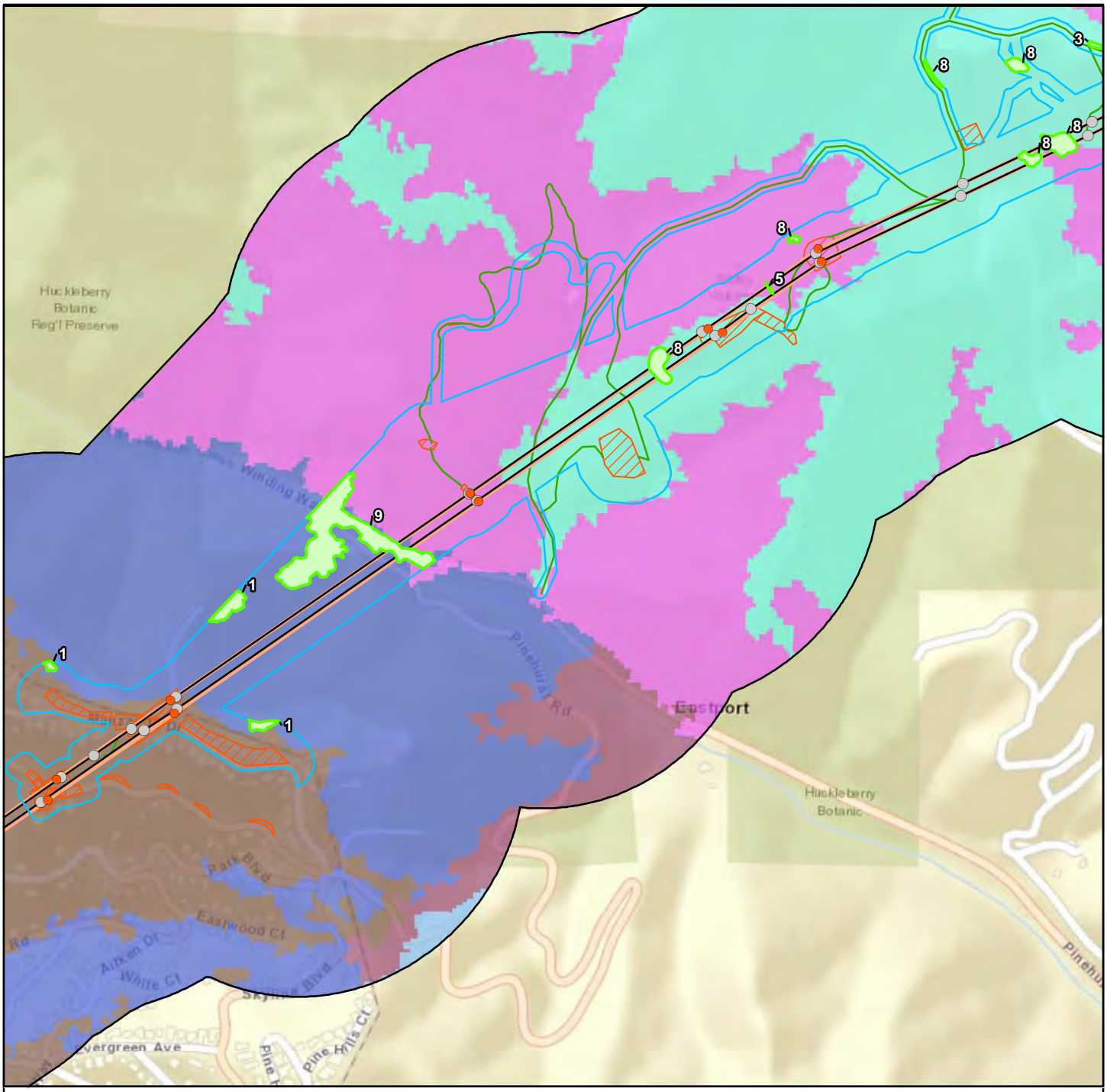
***Sensitive Natural Communities (Nomad 2022)**
1. Arctostaphylos crustacea Shrubland Alliance
2. Carex densa Provisional Herbaceous Alliance
3. Elymus glaucus Herbaceous Alliance
4. Elymus triticoides Herbaceous Alliance
5. Erythranthe guttata Herbaceous Alliance
6. Salix lasiolepis Shrubland Association
7. Sequoia sempervirens Forest Alliance
8. Stipa spp. Herbaceous Alliance
9. Umbellularia californica Forest Alliance

0 400
Feet

N

Figure 3.4-3

Vegetation Communities
Map 3 of 9



Source: PG&E

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Permanent Impact Areas
- Proposed Overhead Structure

Temporary Impact Areas
- Work Area

Overhead Structures
- Existing Overhead Structure

Overhead Routes
- Existing
- Proposed

- Sensitive Natural Community*

Conservation Lands Network 2.0 Vegetation Types
- Coast Live Oak
- Eucalyptus
- Moderate Grasslands
- Non-Native/ Ornamental Conifer/ Hardwood
- Redwood
- Urban/Developed (General)

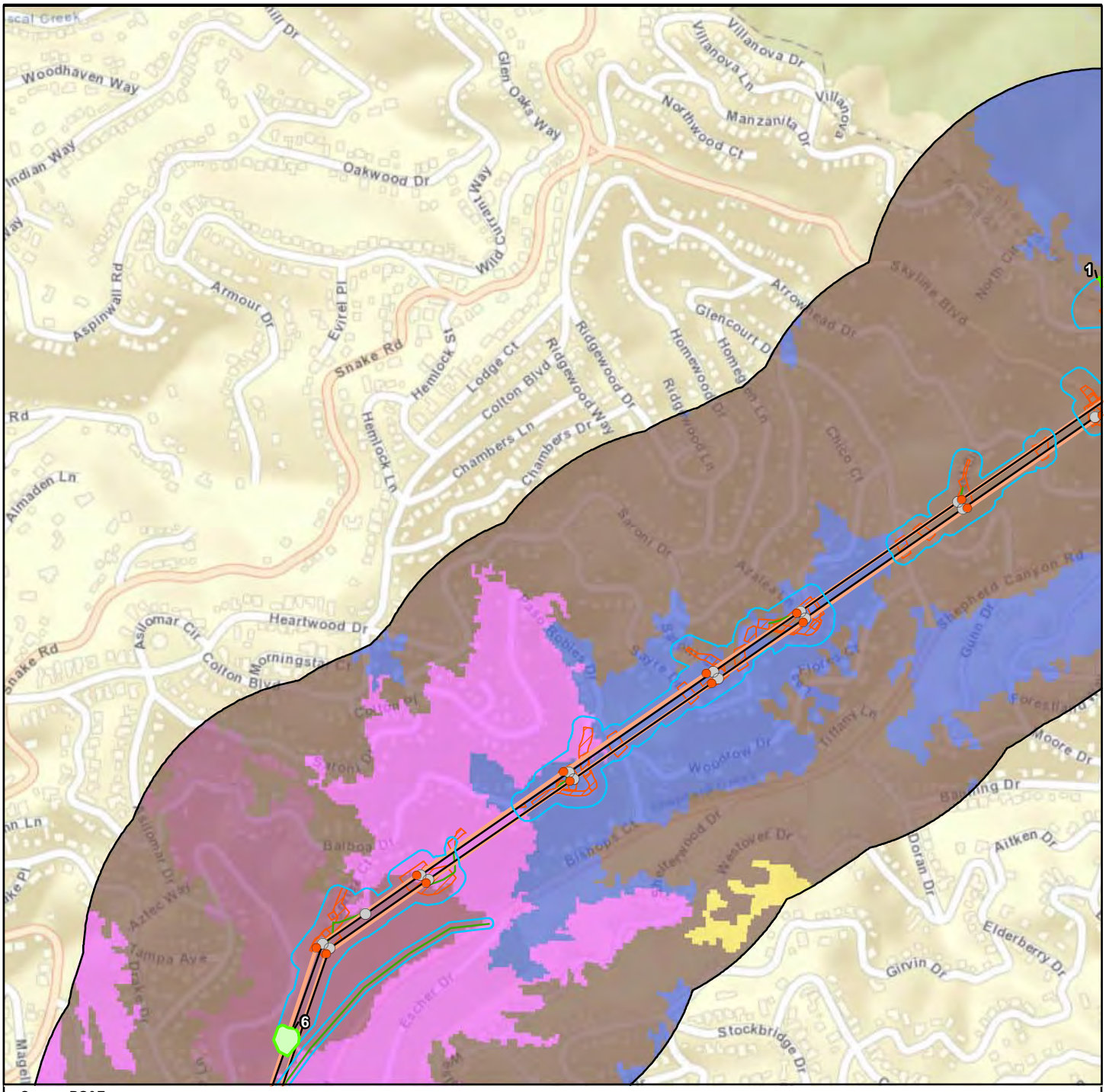
***Sensitive Natural Communities (Nomad 2022)**
1. Arctostaphylos crustacea Shrubland Alliance
2. Carex densa Provisional Herbaceous Alliance
3. Elymus glaucus Herbaceous Alliance
4. Elymus triticoides Herbaceous Alliance
5. Erythranthe guttata Herbaceous Alliance
6. Salix lasiolepis Shrubland Association
7. Sequoia sempervirens Forest Alliance
8. Stipa spp. Herbaceous Alliance
9. Umbellularia californica Forest Alliance

0 400
Feet

N

Figure 3.4-3

Vegetation Communities Map 4 of 9



Source: PG&E

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Permanent Impact Areas
- Proposed Overhead Structure

Temporary Impact Areas
- Work Area

Overhead Structures
- Existing Overhead Structure

Overhead Routes
- Existing
- Proposed

- Sensitive Natural Community*

Conservation Lands Network 2.0 Vegetation Types
- Coast Live Oak
- Coyote Brush
- Eucalyptus
- Non-Native/ Ornamental Conifer/ Hardwood
- Urban/Developed (General)

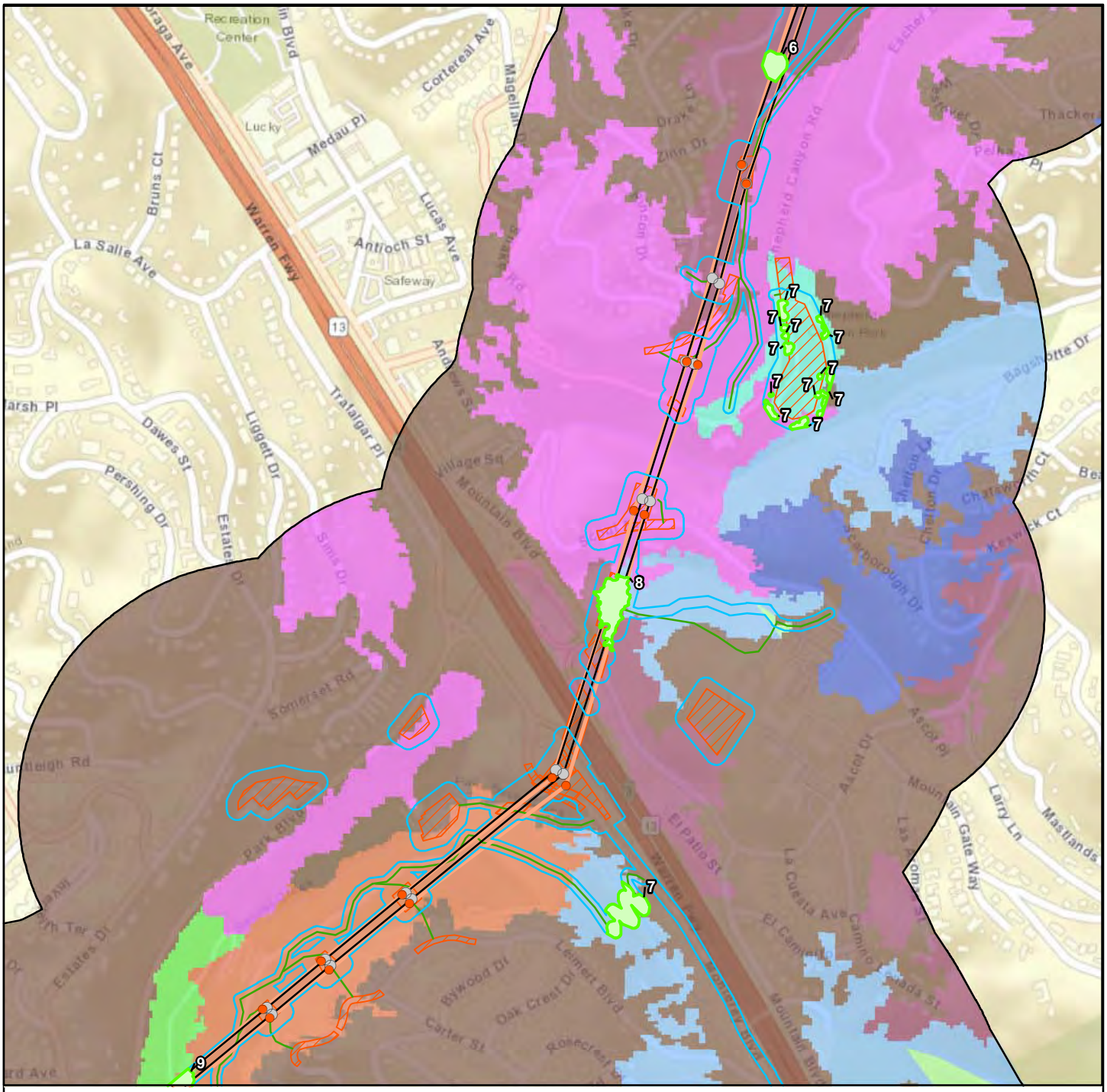
***Sensitive Natural Communities (Nomad 2022)**
1. Arctostaphylos crustacea Shrubland Alliance
2. Carex densa Provisional Herbaceous Alliance
3. Elymus glaucus Herbaceous Alliance
4. Elymus triticoides Herbaceous Alliance
5. Erythranthe guttata Herbaceous Alliance
6. Salix lasiolepis Shrubland Association
7. Sequoia sempervirens Forest Alliance
8. Stipa spp. Herbaceous Alliance
9. Umbellularia californica Forest Alliance

0 400 Feet

N

Figure 3.4-3

Vegetation Communities
Map 5 of 9



Source: PG&E

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Overhead Structures
- Existing Overhead Structure

Overhead Routes
- Existing
- Proposed

Permanent Impact Areas
- Proposed Overhead Structure

Temporary Impact Areas
- Work Area

0 400 Feet

N

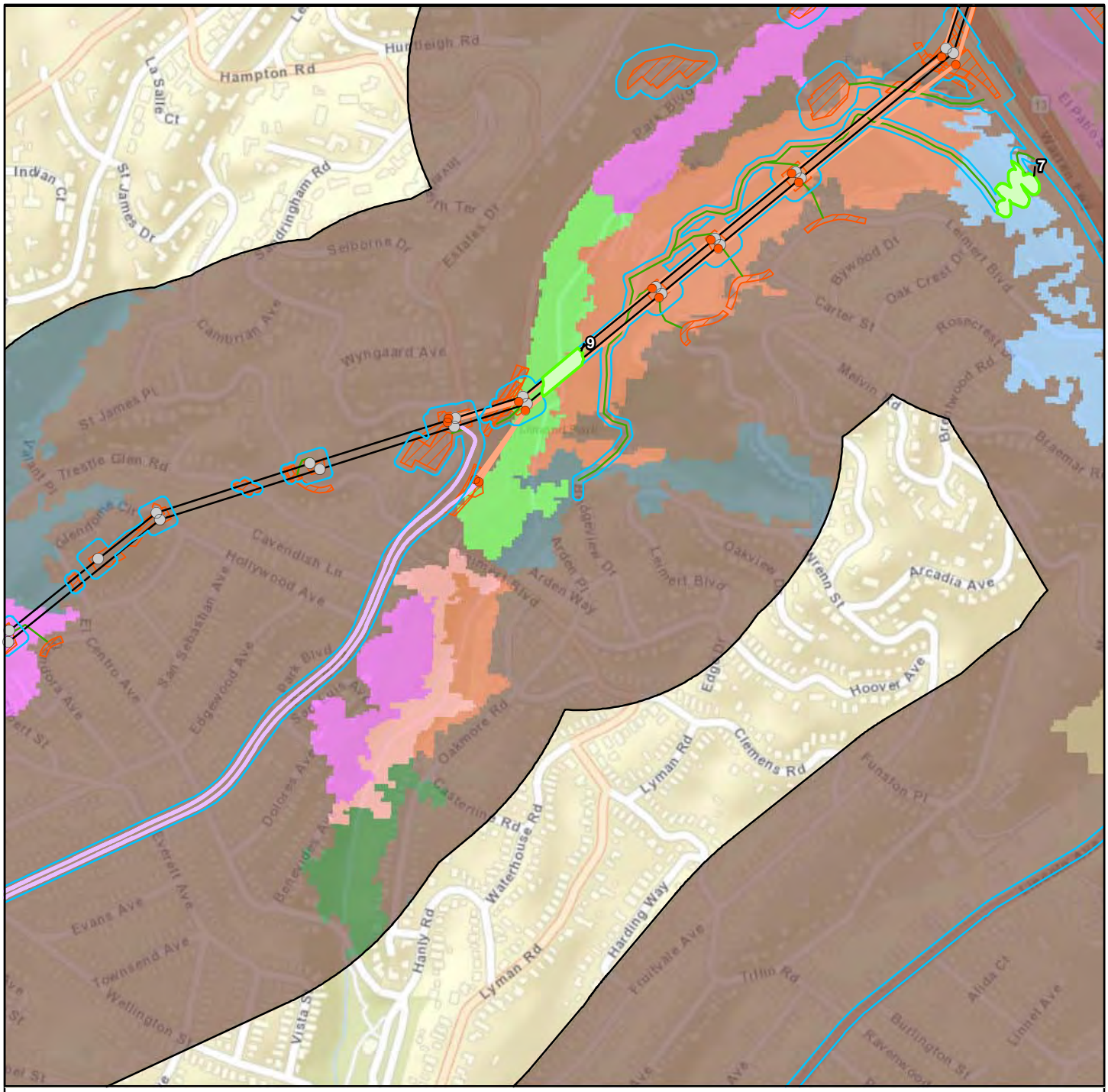
- Sensitive Natural Community*

Conservation Lands Network 2.0 Vegetation Types
- California Bay
- Coast Live Oak
- Coastal Mixed Hardwood
- Eucalyptus
- Moderate Grasslands
- Non-Native/Ornamental Conifer/Hardwood
- Redwood
- Serpentine Conifer
- Urban/Developed (General)

***Sensitive Natural Communities (Nomad 2022)**
1. Arctostaphylos crustacea Shrubland Alliance
2. Carex densa Provisional Herbaceous Alliance
3. Elymus glaucus Herbaceous Alliance
4. Elymus triticoides Herbaceous Alliance
5. Erythranthe guttata Herbaceous Alliance
6. Salix lasiolepis Shrubland Association
7. Sequoia sempervirens Forest Alliance
8. Stipa spp. Herbaceous Alliance
9. Umbellularia californica Forest Alliance

Figure 3.4-3

Vegetation Communities
Map 6 of 9



Source: PG&E

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Permanent Impact Areas
- Proposed Overhead Structure

Temporary Impact Areas
- Work Area

Overhead Structures
- Existing Overhead Structure

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed

- Sensitive Natural Community*

Conservation Lands Network 2.0 Vegetation Types
- Blue Oak
- California Bay
- Coast Live Oak
- Coastal Mixed Hardwood
- Interior Mixed Hardwood
- Non-Native/Ornamental Conifer/Hardwood
- Non-Native/Ornamental Grass
- Redwood
- Riparian Mixed Hardwood
- Urban/Developed (General)

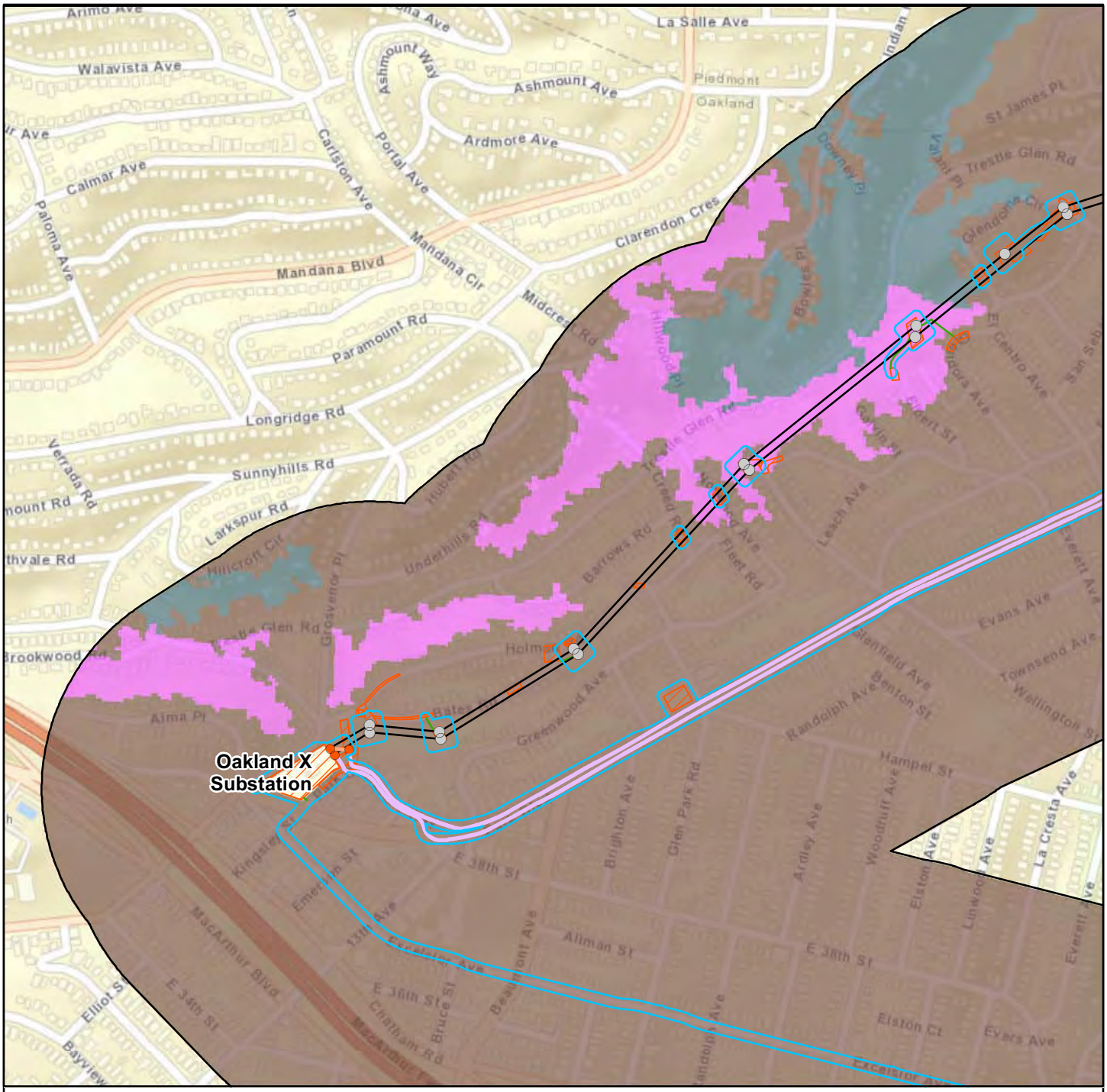
***Sensitive Natural Communities (Nomad 2022)**
1. Arctostaphylos crustacea Shrubland Alliance
2. Carex densa Provisional Herbaceous Alliance
3. Elymus glaucus Herbaceous Alliance
4. Elymus triticoides Herbaceous Alliance
5. Erythranthe guttata Herbaceous Alliance
6. Salix lasiolepis Shrubland Association
7. Sequoia sempervirens Forest Alliance
8. Stipa spp. Herbaceous Alliance
9. Umbellularia californica Forest Alliance

0 400 Feet

N

Figure 3.4-3

Vegetation Communities
Map 7 of 9



Source: PG&E

- Botanical Study and Survey Area
- 1,000-foot Buffer of the Botanical Study and Survey Area
- Project Access

Permanent Impact Areas
- Proposed Overhead Structure

Temporary Impact Areas
- Work Area

Overhead Structures
- Existing Overhead Structure

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed

- Sensitive Natural Community*

Conservation Lands Network 2.0 Vegetation Types
- Blue Oak
- Coast Live Oak
- Urban/Developed (General)

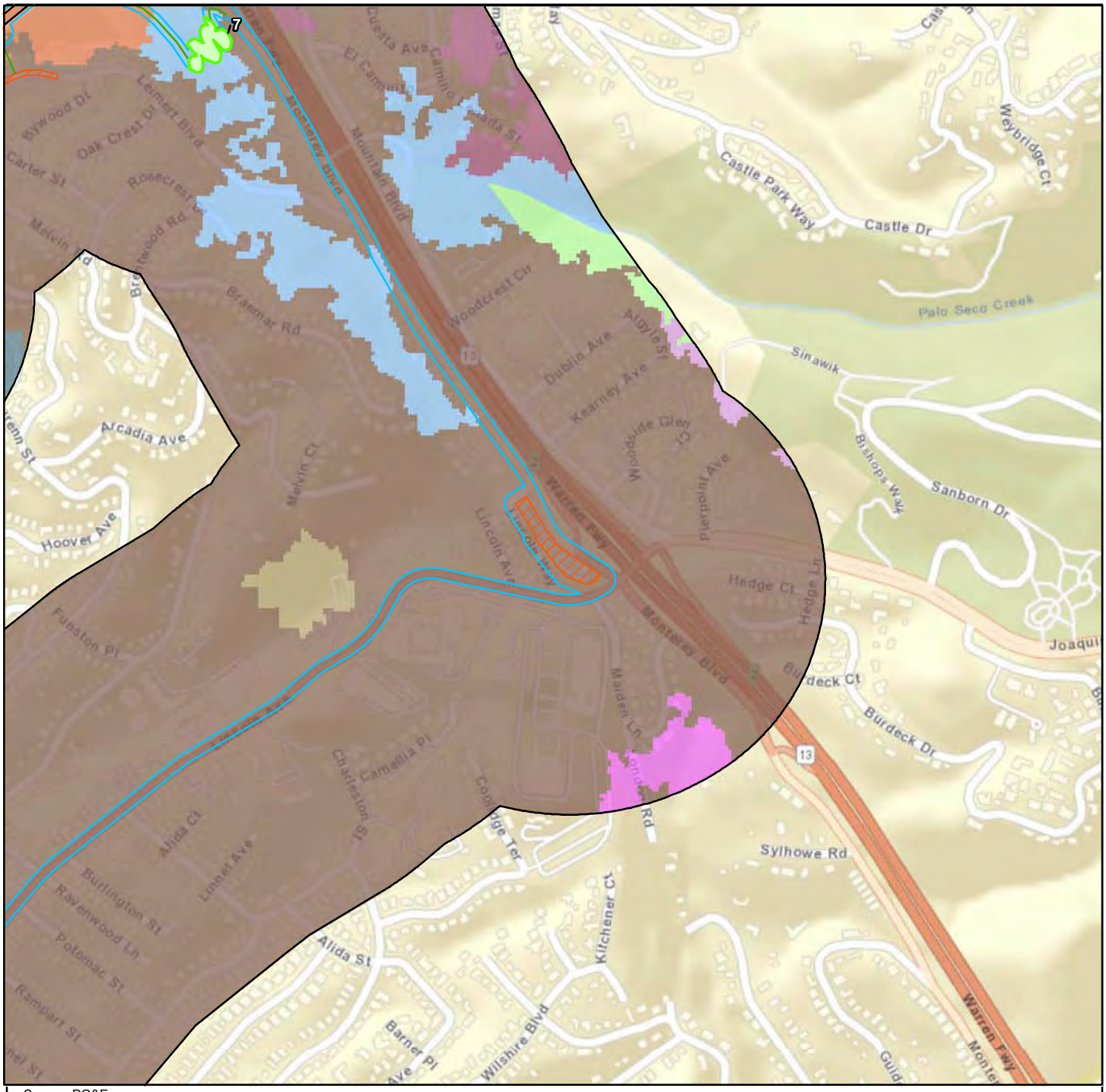
***Sensitive Natural Communities (Nomad 2022)**
1. Arctostaphylos crustacea Shrubland Alliance
2. Carex densa Provisional Herbaceous Alliance
3. Elymus glaucus Herbaceous Alliance
4. Elymus triticoides Herbaceous Alliance
5. Erythranthe guttata Herbaceous Alliance
6. Salix lasiolepis Shrubland Association
7. Sequoia sempervirens Forest Alliance
8. Stipa spp. Herbaceous Alliance
9. Umbellularia californica Forest Alliance

0 400 Feet

N

Figure 3.4-3

Vegetation Communities
Map 8 of 9



Source: PG&E

Botanical Study and Survey Area

1,000-foot Buffer of the Botanical Study and Survey Area

Project Access

Temporary Impact Areas

Work Area

Overhead Routes

Existing

Proposed

Sensitive Natural Community*

Conservation Lands Network 2.0 Vegetation Types

Blue Oak

Coast Live Oak

Coastal Mixed Hardwood

Non-Native/ Ornamental Conifer/Hardwood

Non-Native/Ornamental Grass

Redwood

Serpentine Conifer

Serpentine Hardwood

Urban/Developed (General)

***Sensitive Natural Communities (Nomad 2022)**

1. Arctostaphylos crustacea Shrubland Alliance
2. Carex densa Provisional Herbaceous Alliance
3. Elymus glaucus Herbaceous Alliance
4. Elymus triticoides Herbaceous Alliance
5. Erythranthe guttata Herbaceous Alliance
6. Salix lasiolepis Shrubland Association
7. Sequoia sempervirens Forest Alliance
8. Stipa spp. Herbaceous Alliance
9. Umbellularia californica Forest Alliance

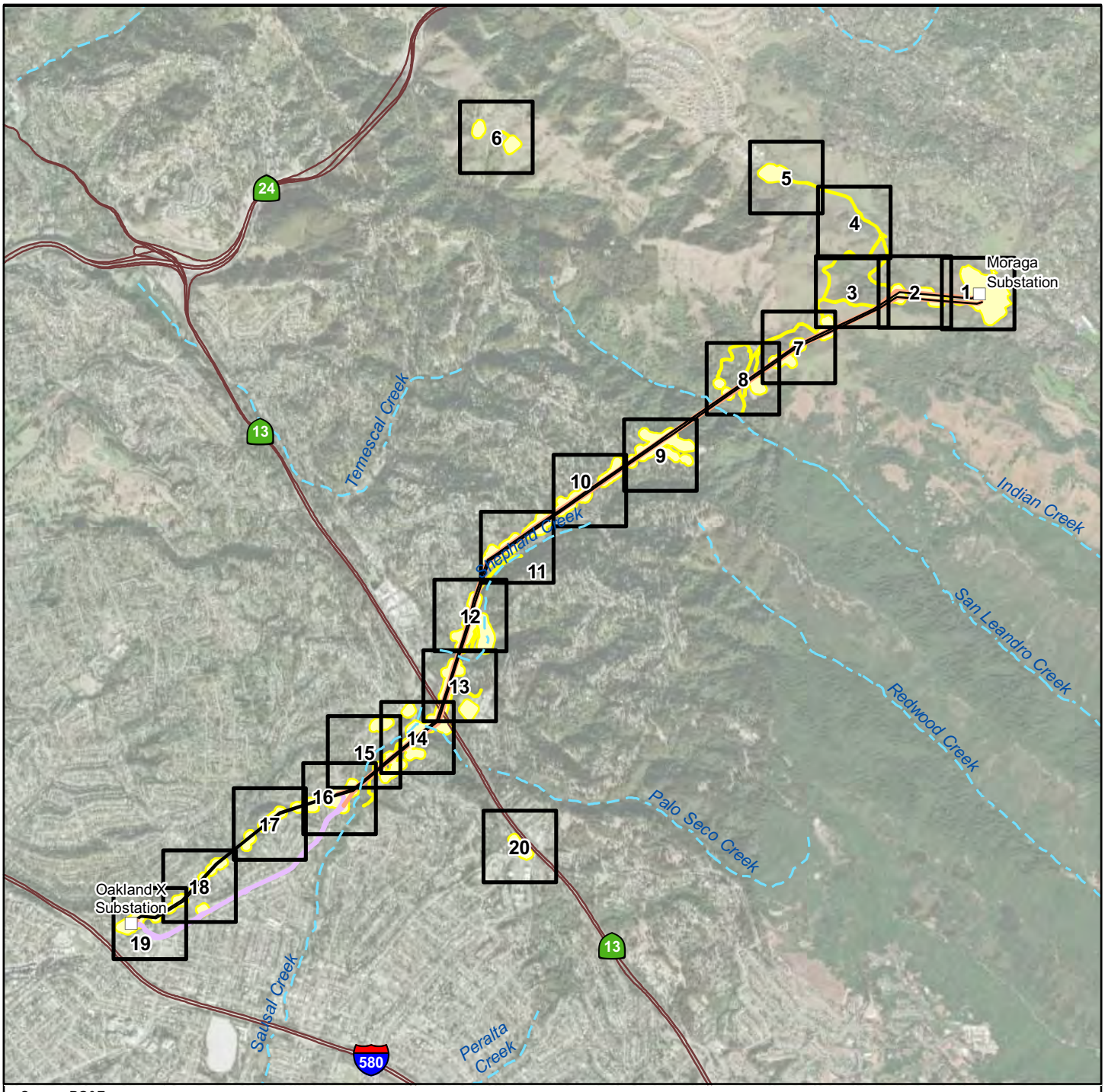
0 400

Feet

N

Figure 3.4-3

Vegetation Communities
Map 9 of 9



Source: PG&E

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed

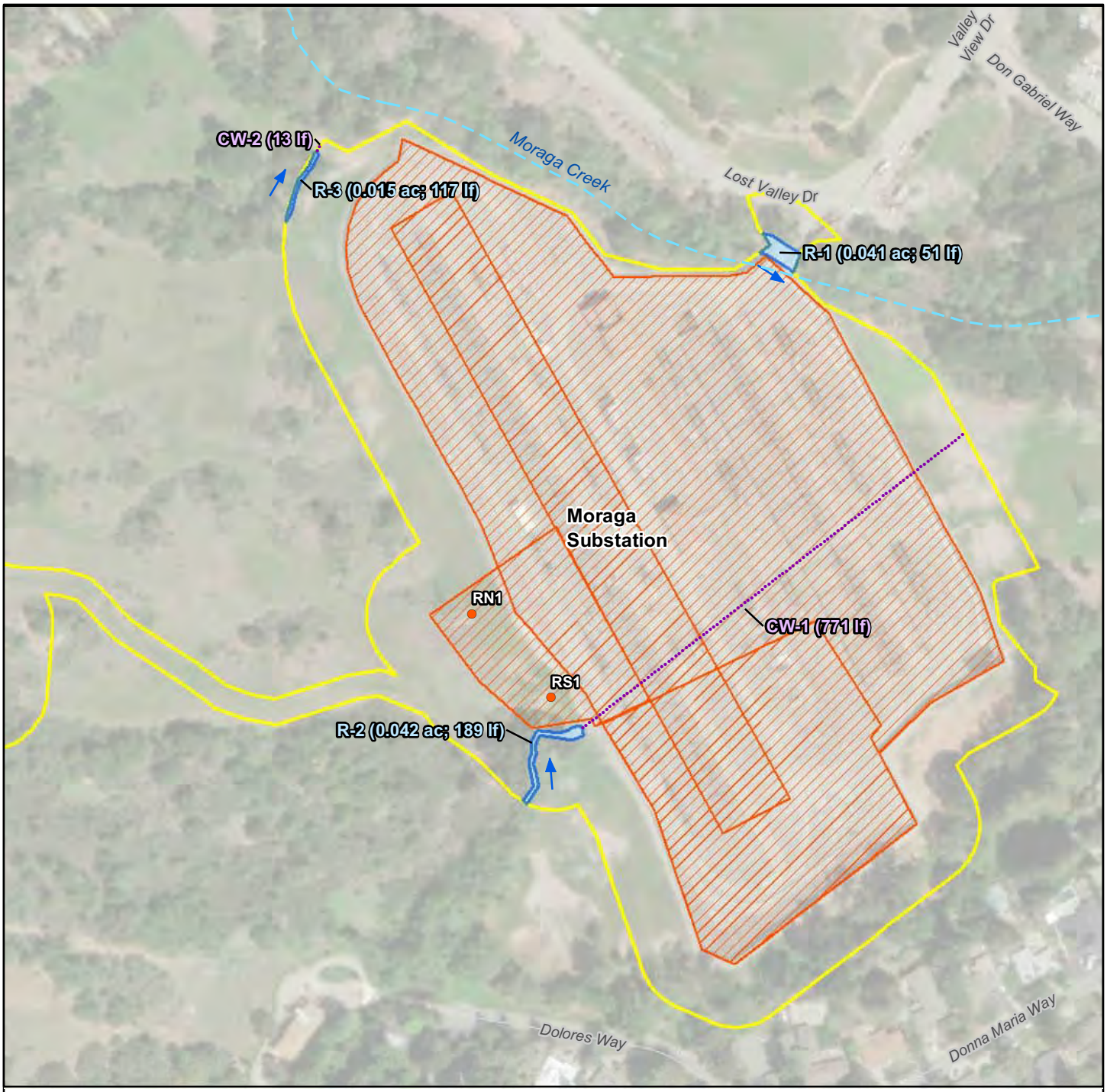
- Detail Map Sheet
- Substation
- Aquatic Resources Study Area (226.3 acres)
- Creek (National Hydrography Dataset)

0 0.5 1
Miles

N

Figure 3.4-4

Overview
Aquatic Resources
Delineation Map



Source: PG&E

- Aquatic Resources Study Area (226.3 ac)
- Creek (National Hydrography Dataset)

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area
- Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

- Other Waters (0.387 ac; 2,159 lf)
- Wetlands (0.133 ac)
- Culverted Waters (1,514 lf)
- Flow Direction

0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 1 of 20

Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 2 of 20

Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 3 of 20

Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

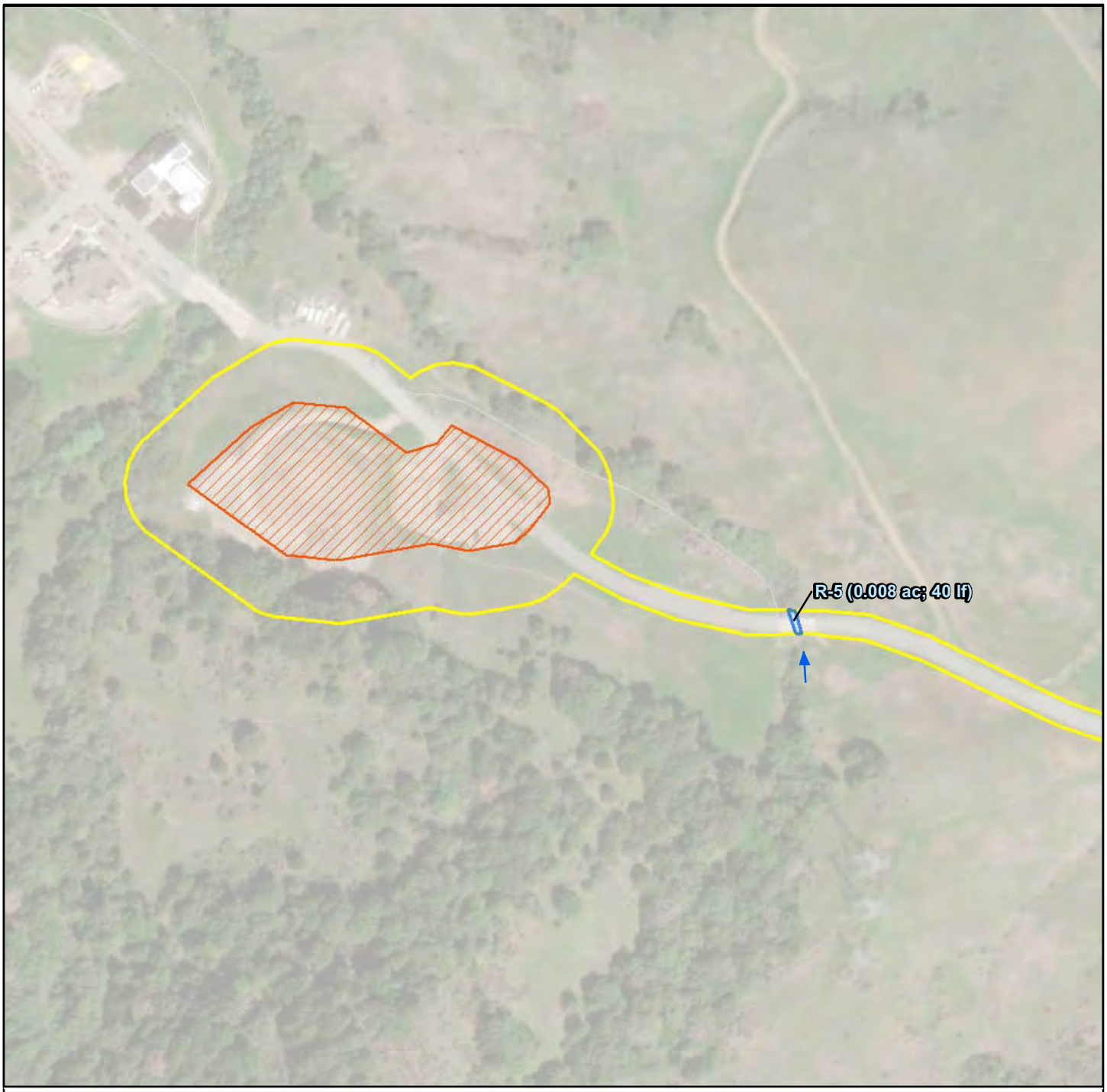
0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 4 of 20



Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

0 250 500

Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 5 of 20

Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

0 250 500

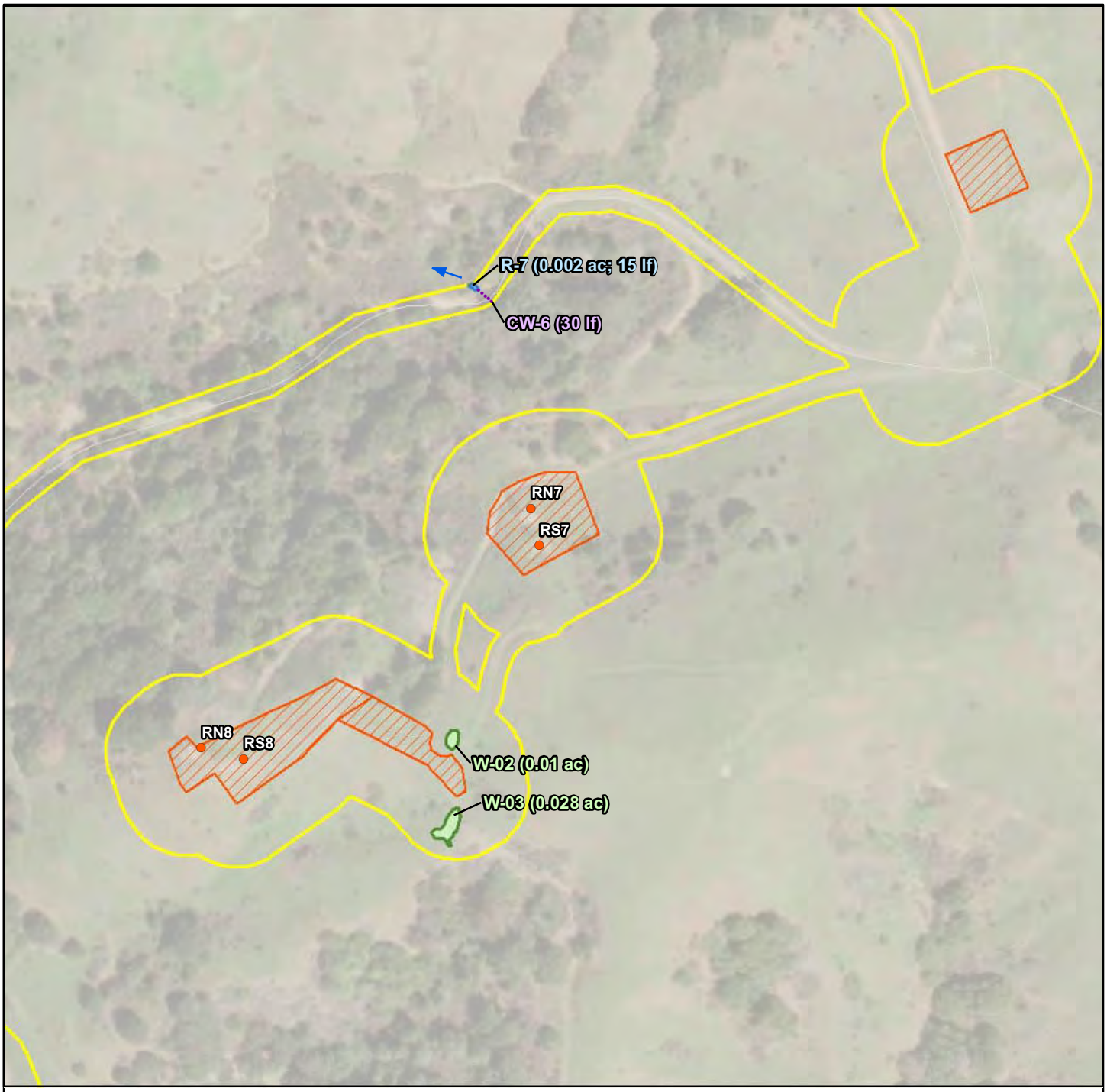
Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 6 of 20



Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

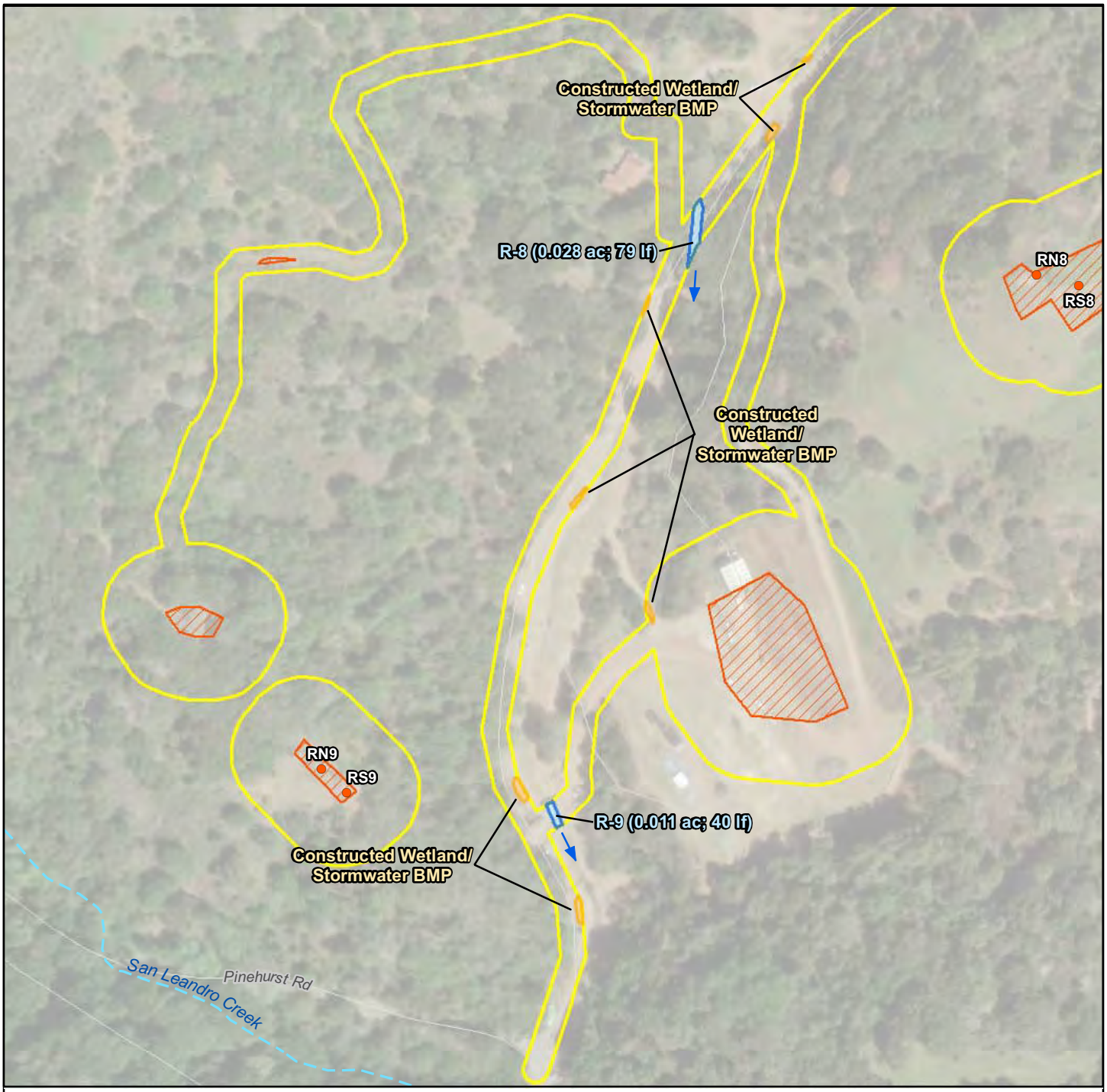
0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 7 of 20



Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Creek (National Hydrography Dataset)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

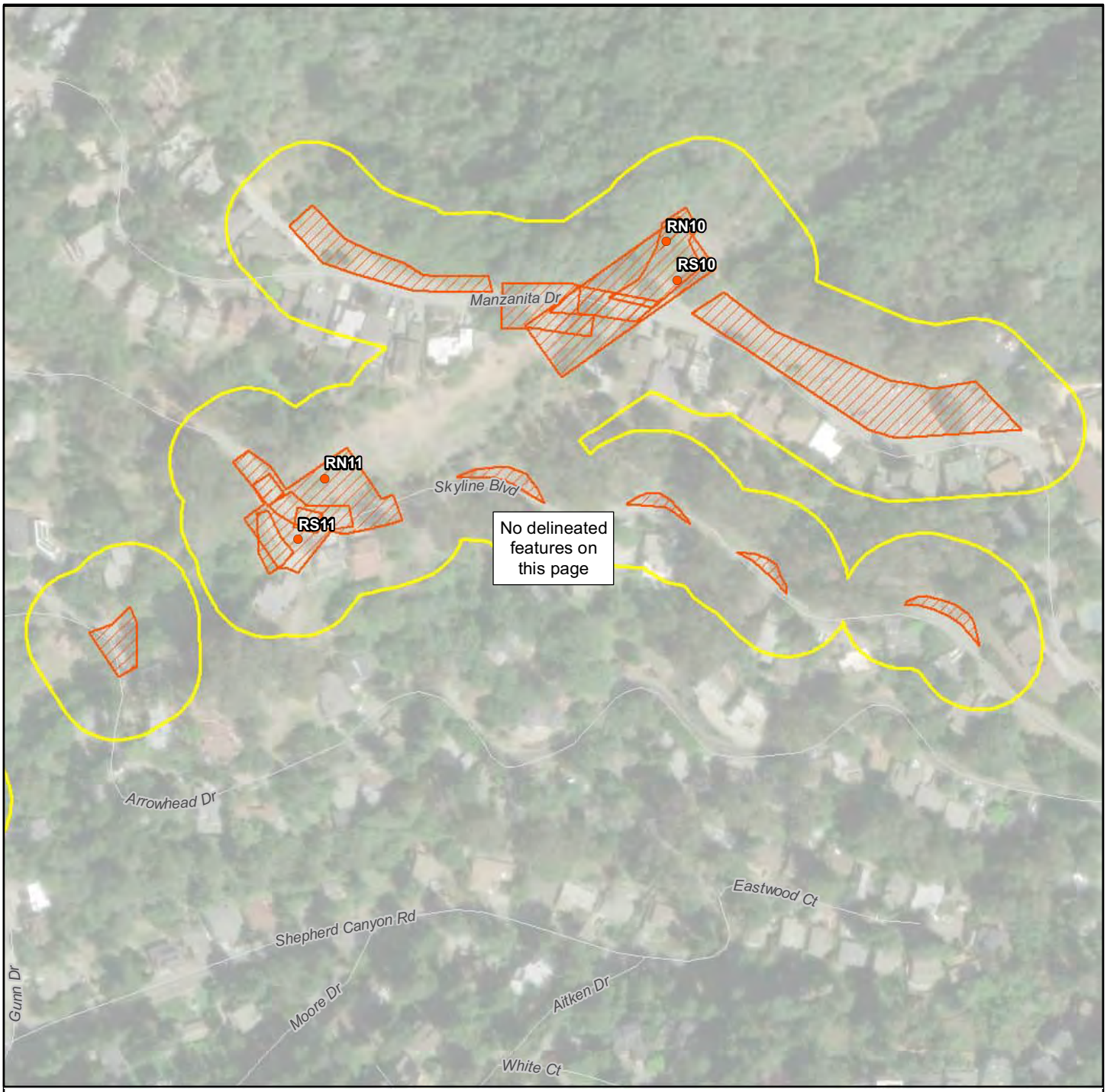
0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map
Map 8 of 20



Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

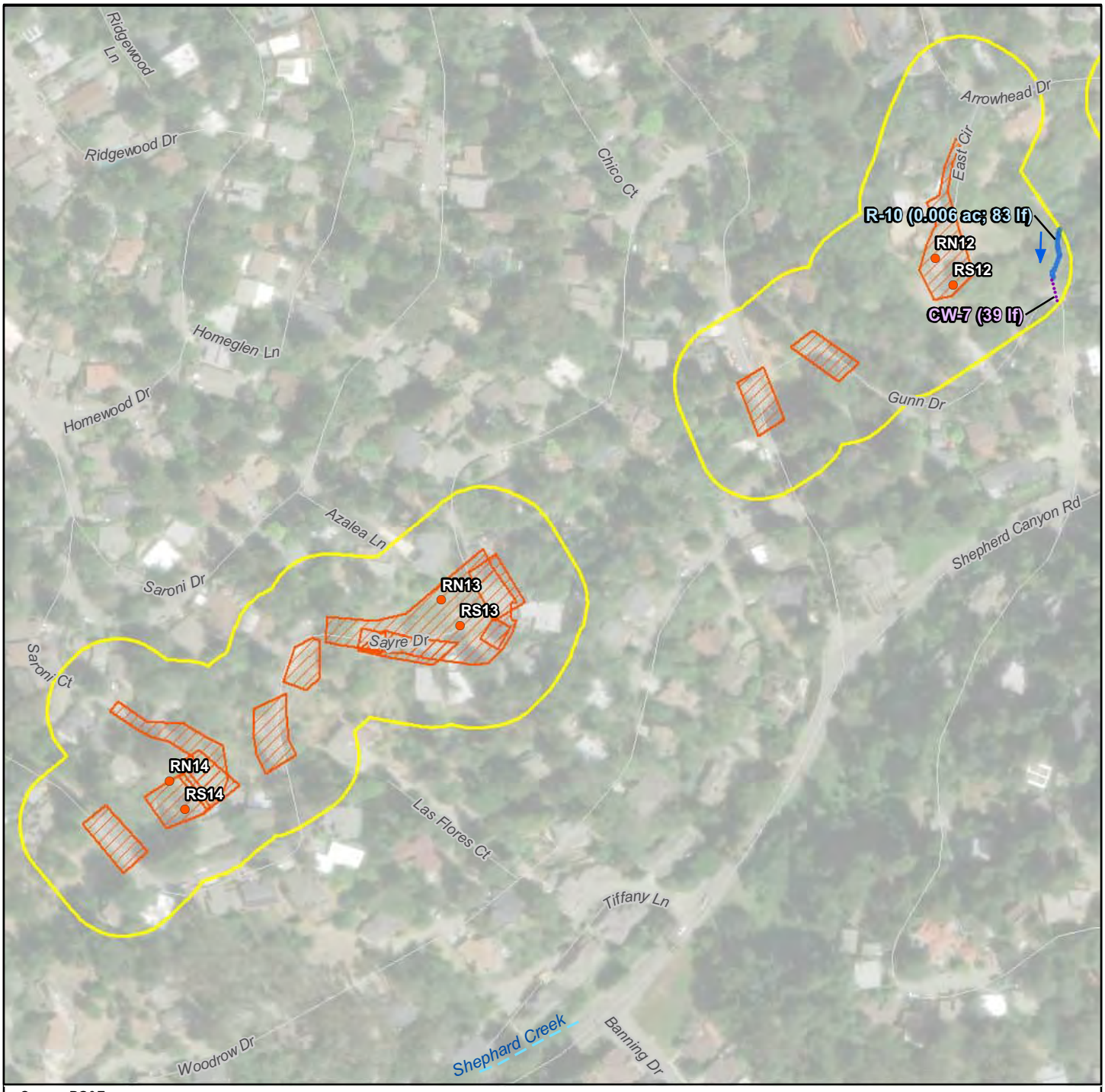
0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 9 of 20



Source: PG&E

- Aquatic Resources Study Area (226.3 ac)
- Creek (National Hydrography Dataset)

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area
- Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

- Other Waters (0.387 ac; 2,159 lf)
- Wetlands (0.133 ac)
- Culverted Waters (1,514 lf)
- Flow Direction

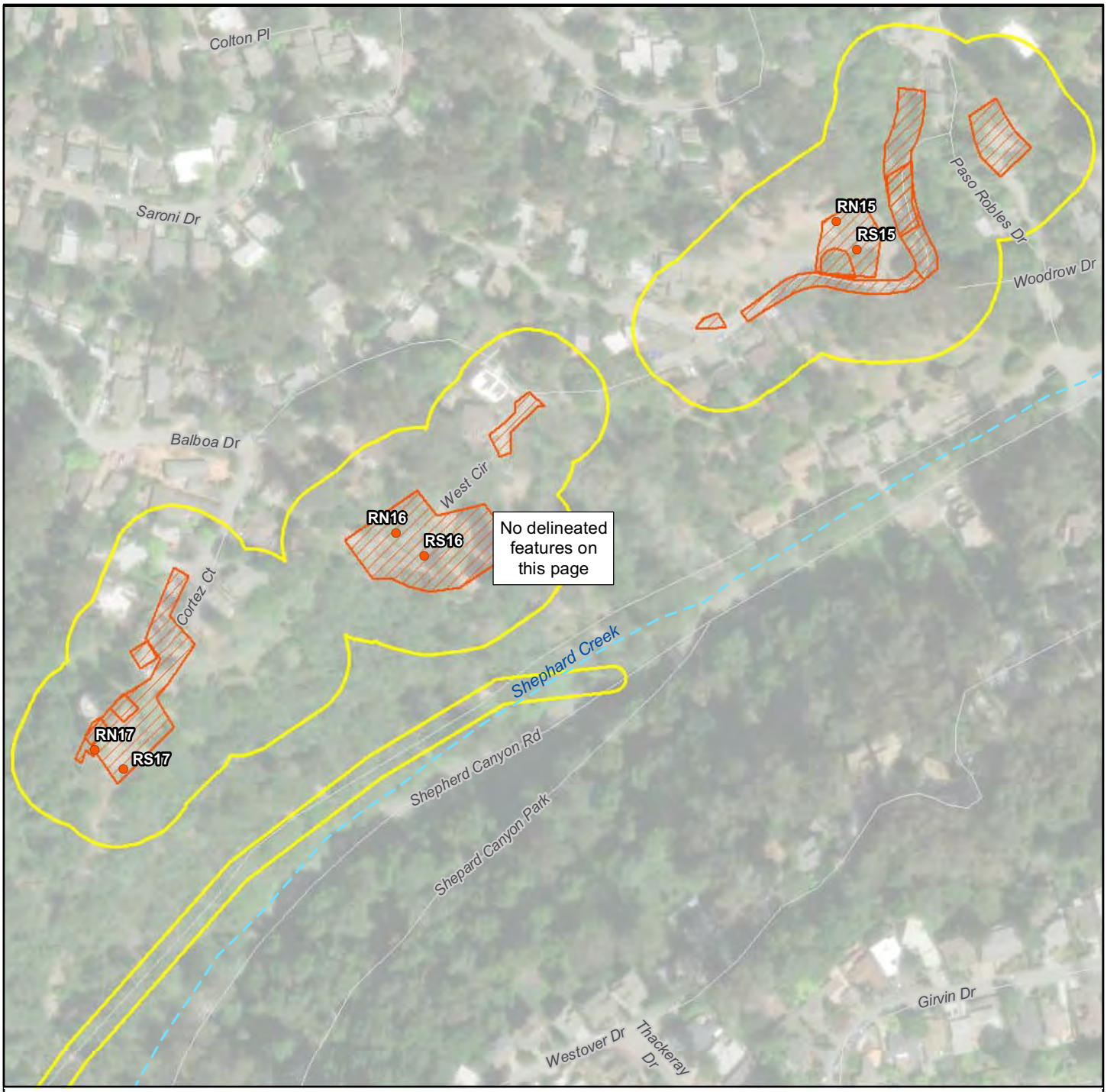
0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 10 of 20



Source: PG&E

- Aquatic Resources Study Area (226.3 ac)
- Creek (National Hydrography Dataset)

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area
- Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

- Other Waters (0.387 ac; 2,159 lf)
- Wetlands (0.133 ac)
- Culverted Waters (1,514 lf)
- Flow Direction

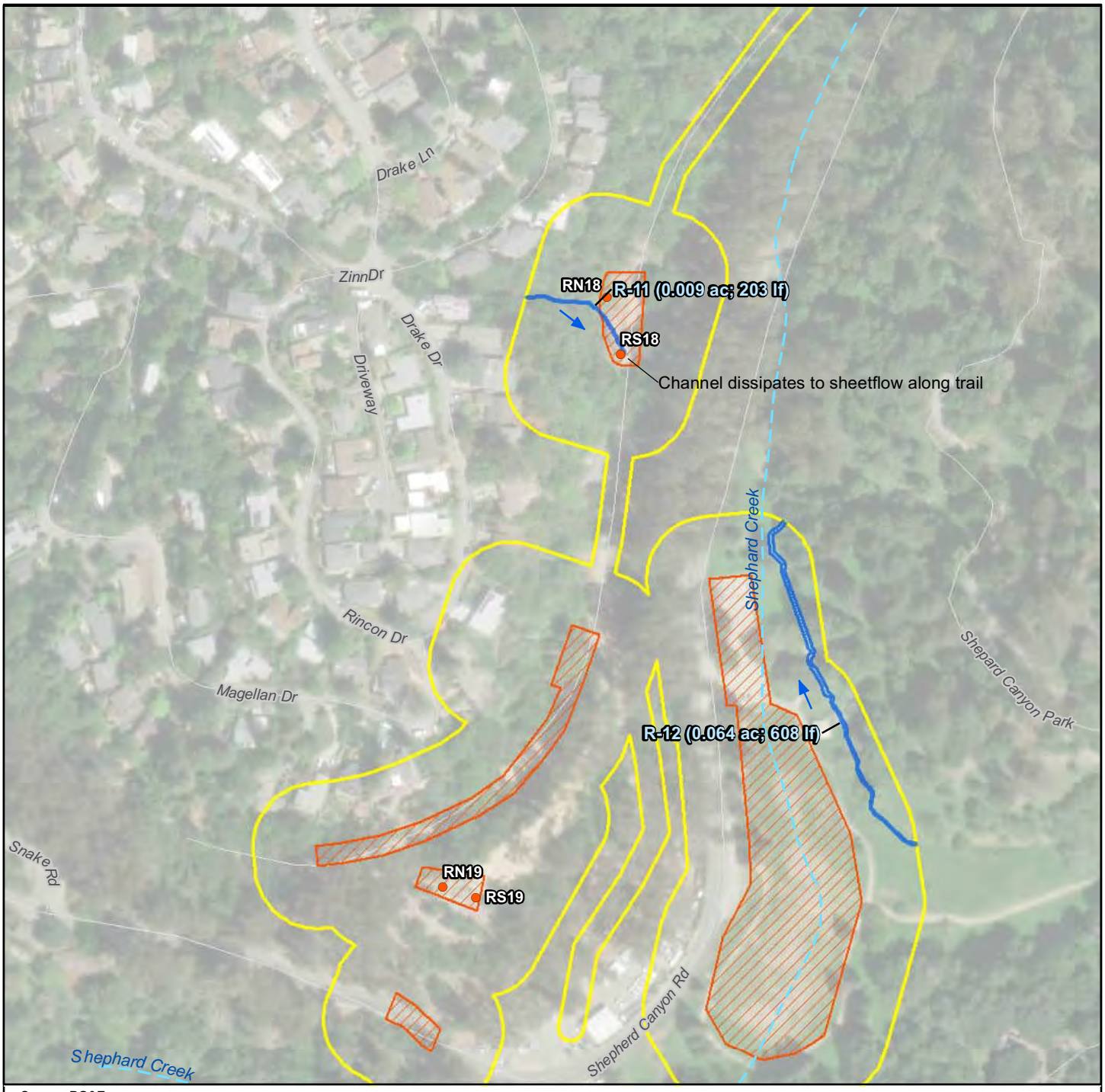
0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map
Map 11 of 20



Source: PG&E

- Aquatic Resources Study Area (226.3 ac)
- Creek (National Hydrography Dataset)

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area
- Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

- Other Waters (0.387 ac; 2,159 lf)
- Wetlands (0.133 ac)
- Culverted Waters (1,514 lf)
- Flow Direction

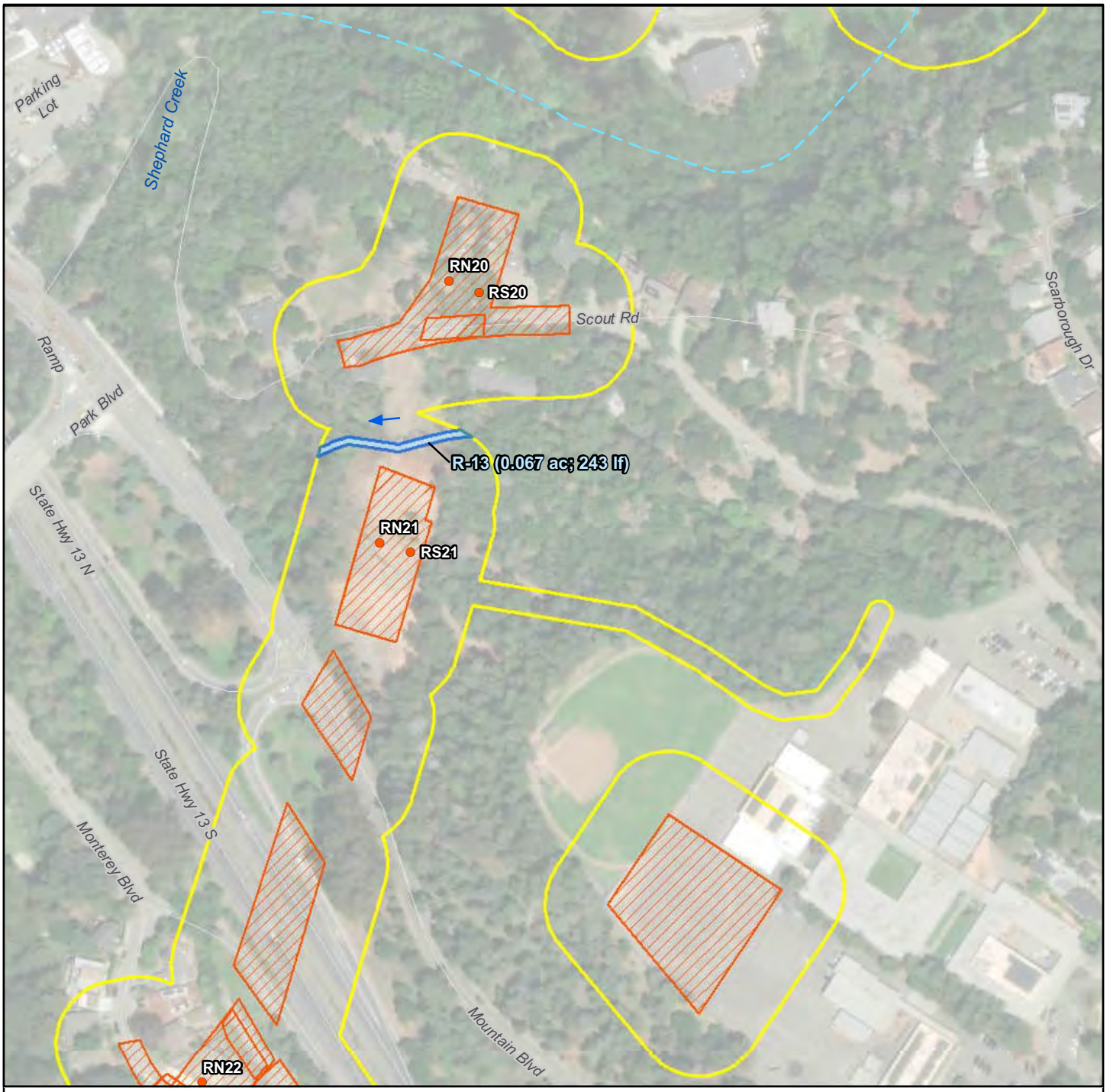
0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map
Map 12 of 20



Source: PG&E

- Aquatic Resources Study Area (226.3 ac)
- Creek (National Hydrography Dataset)

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area
- Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

- Other Waters (0.387 ac; 2,159 lf)
- Wetlands (0.133 ac)
- Culverted Waters (1,514 lf)
- Flow Direction

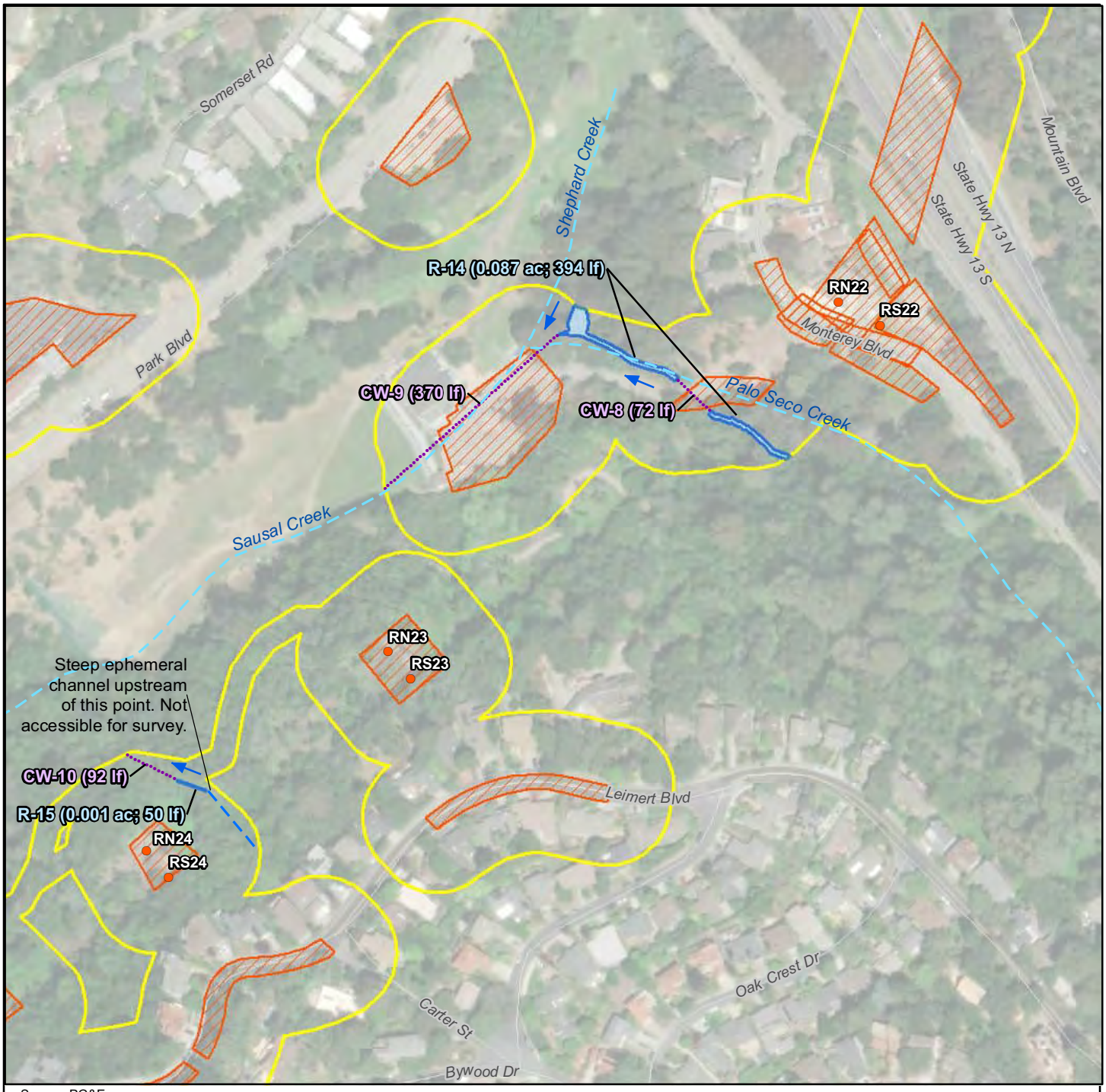
0 250 500
Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map
Map 13 of 20



Source: PG&E

- Aquatic Resources Study Area (226.3 ac)
- Creek (National Hydrography Dataset)

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area
- Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

- Other Waters (0.387 ac; 2,159 lf)
- Wetlands (0.133 ac)
- Culverted Waters (1,514 lf)
- Flow Direction

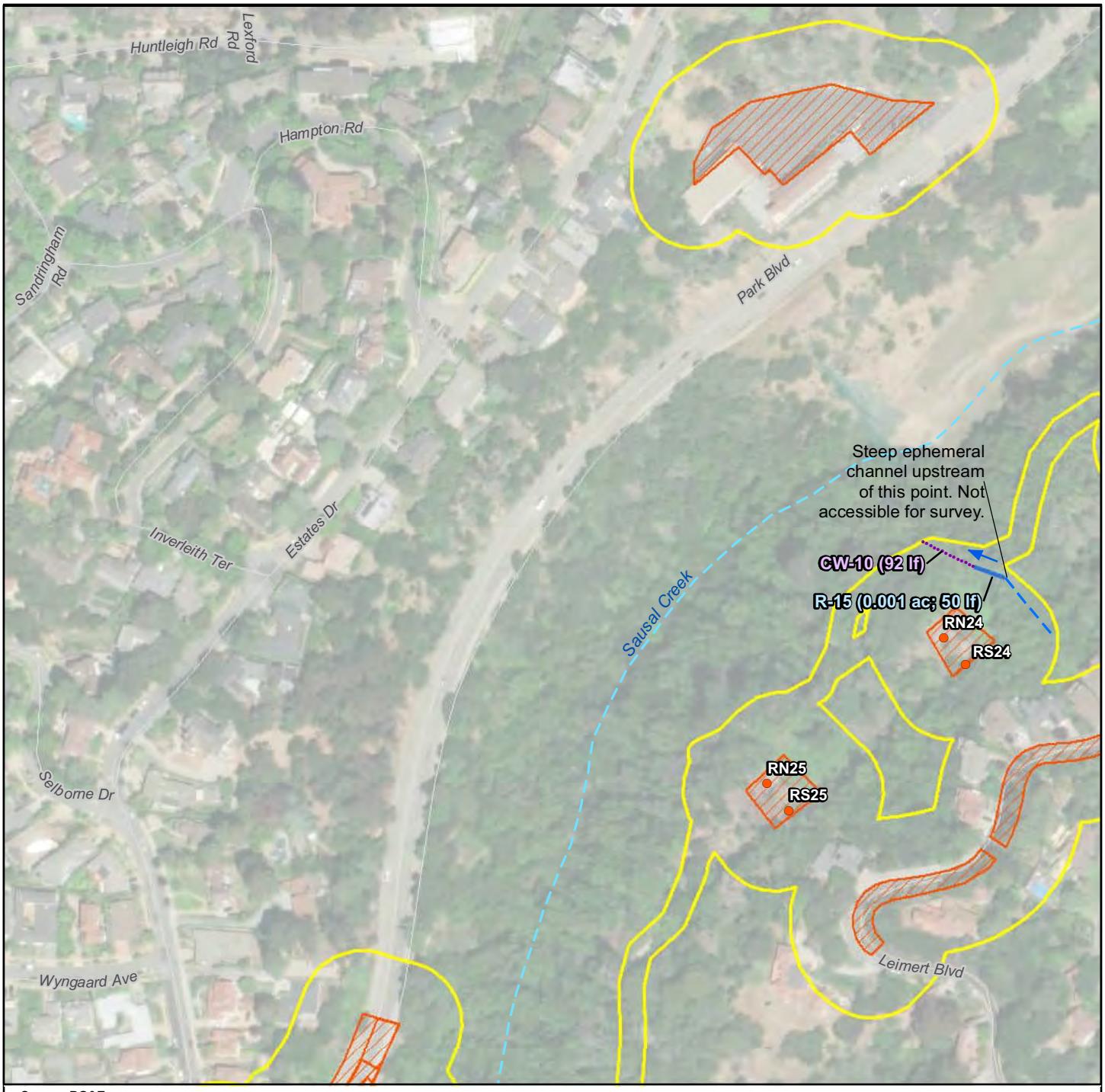
0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map
Map 14 of 20



Source: PG&E

- Aquatic Resources Study Area (226.3 ac)
- Creek (National Hydrography Dataset)

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area
- Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

- Other Waters (0.387 ac; 2,159 lf)
- Wetlands (0.133 ac)
- Culverted Waters (1,514 lf)
- Flow Direction

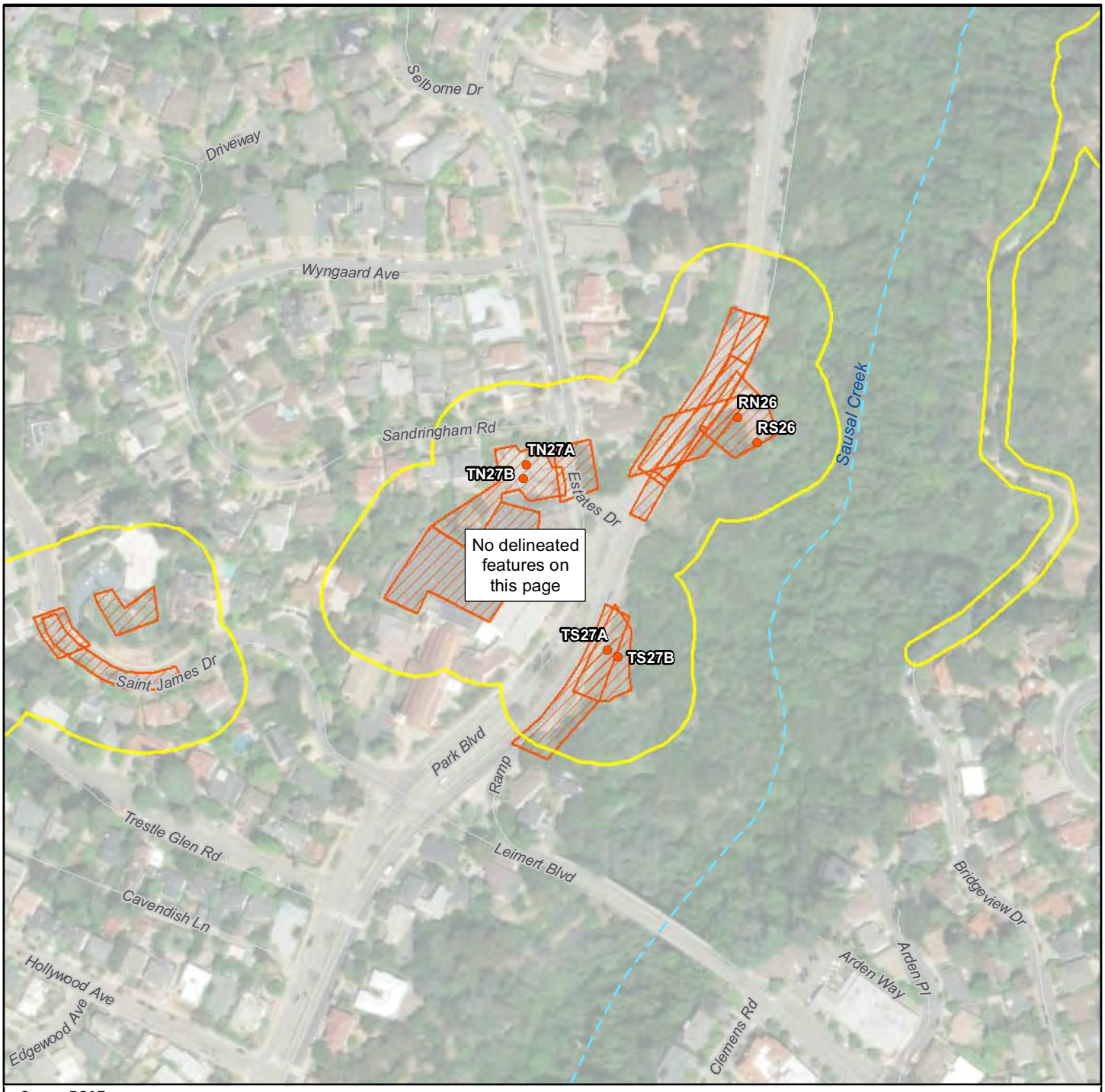
0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map
Map 15 of 20



Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Creek (National Hydrography Dataset)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 16 of 20

Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 17 of 20

Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

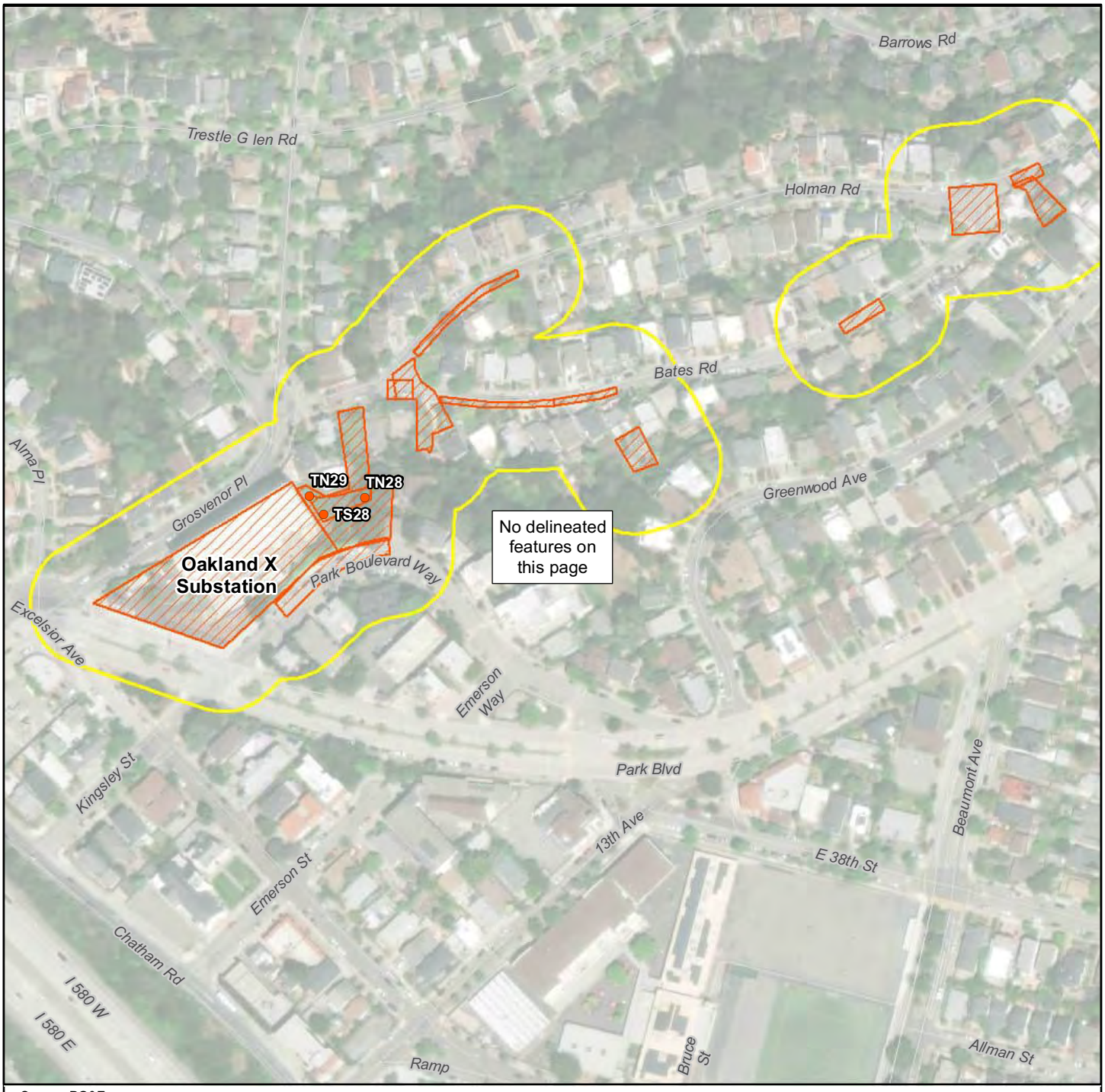
0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 18 of 20



Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 19 of 20

Source: PG&E

Aquatic Resources Study Area (226.3 ac)

Permanent Impact Areas

Proposed Overhead Structure

Temporary Impact Areas

Work Area

Constructed Wetland/ Stormwater Bioswale

Aquatic Resources

Other Waters (0.387 ac; 2,159 lf)

Wetlands (0.133 ac)

Culverted Waters (1,514 lf)

Flow Direction

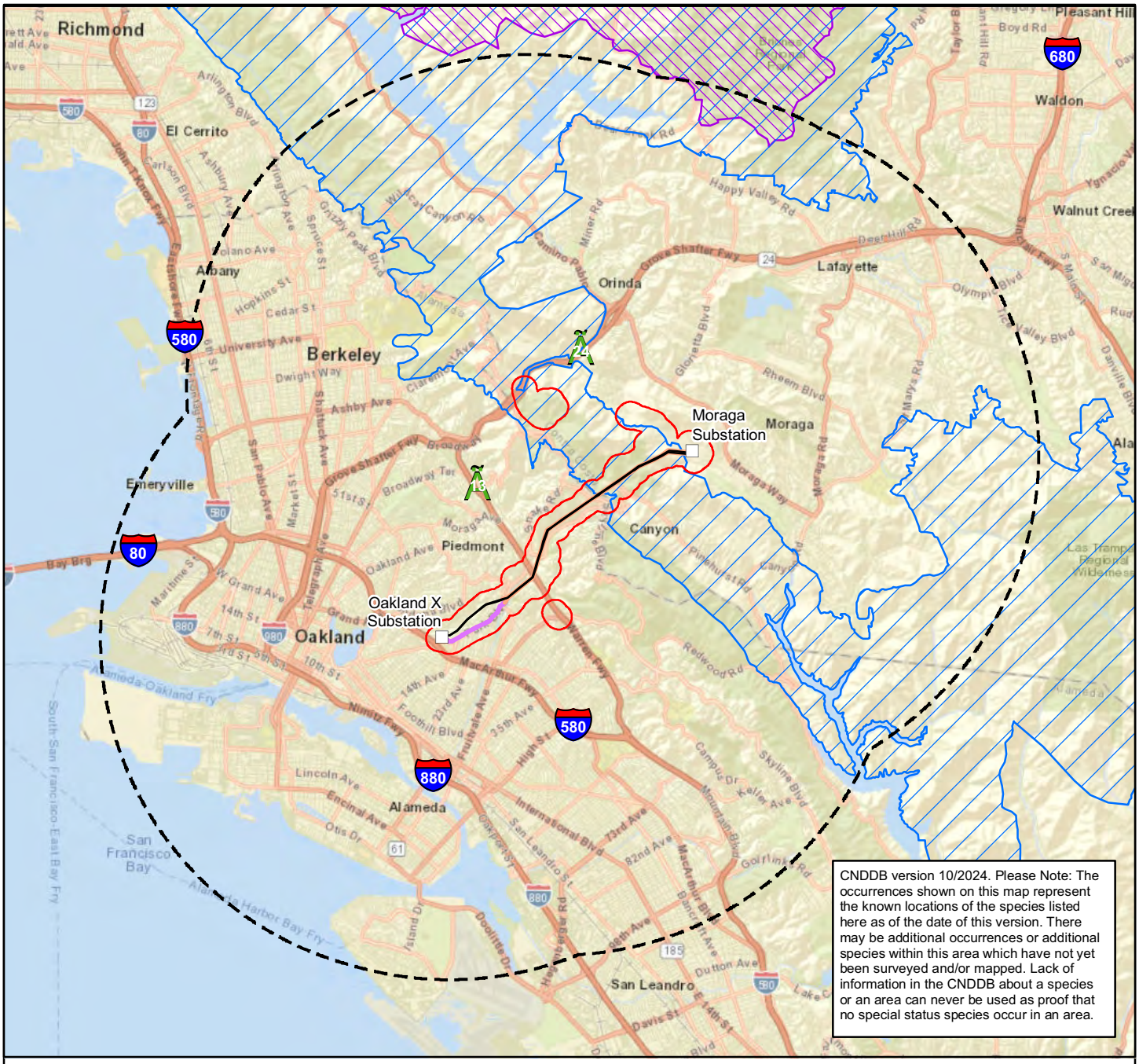
0 250 500 Feet

N

Notes:
ac = acres
lf = linear feet

Figure 3.4-4

Aquatic Resources Delineation Map Map 20 of 20



Source: PG&E

Biological Study Area
5-mile Project Buffer
Substation

Overhead Routes
Existing
Proposed

Underground Routes
Proposed

Critical Habitat within 5 Miles
Alameda whipsnake (=striped racer)
California red-legged frog

0 1 2 3
Miles

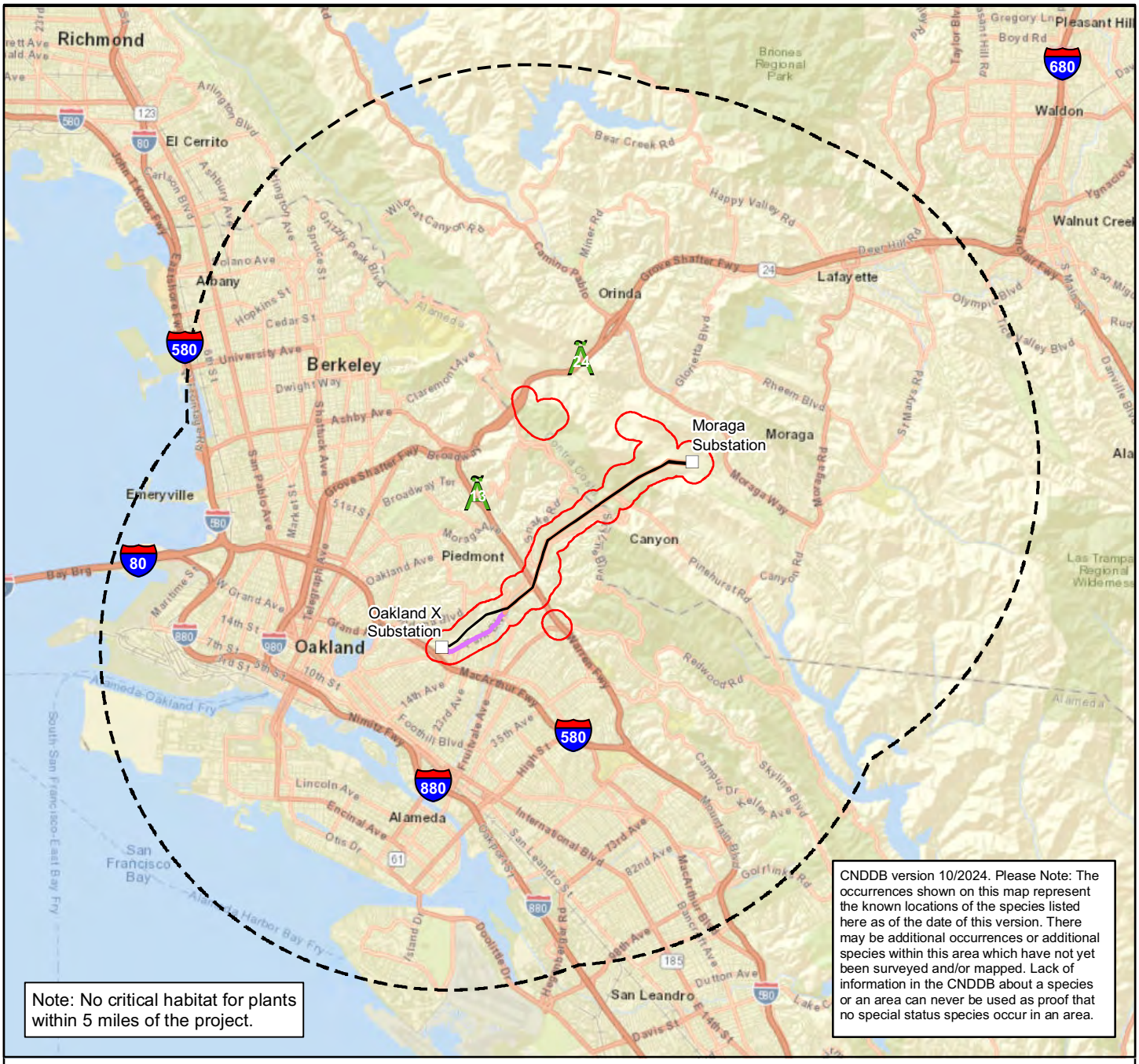
N

CNDDB Occurrences
The following species are known to occur within the 5 mile project buffer:

1. Alameda Island mole
2. Alameda song sparrow
3. Alameda whipsnake
4. American badger
5. American peregrine falcon
6. Bay checkerspot butterfly
7. Berkeley kangaroo rat
8. big free-tailed bat
9. Bridges' coast range shoulderband
10. burrowing owl
11. California black rail
12. California least tern
13. California red-legged frog
14. California Ridgway's rail
15. California tiger salamander - central California DPS
16. Cooper's hawk
17. Crotch bumble bee
18. foothill yellow-legged frog - central coast DPS
19. golden eagle
20. green sturgeon - southern DPS
21. hoary bat
22. Lee's micro-blind harvestman
23. longfin smelt
24. mimic tryonia (=California brackishwater snail)
25. monarch - California overwintering population
26. Northern California legless lizard
27. obscure bumble bee
28. Pacific walker
29. pallid bat
30. Sacramento perch
31. salt-marsh harvest mouse
32. salt-marsh wandering shrew
33. saltmarsh common yellowthroat
34. San Francisco dusky-footed woodrat
35. silver-haired bat
36. tidewater goby
37. Townsend's big-eared bat
38. western bumble bee
39. western pond turtle
40. western snowy plover
41. yellow rail

Figure 3.4-5a

Animals: CNDDB Occurrences and USFWS Critical Habitat within 5 Miles of the Biological Study Area



Source: PG&E

Biological Study Area
5-mile Project Buffer
Substation

Overhead Routes
Existing
Proposed

Underground Routes
Proposed

Rare Plant Observations (Nomad 2022)
1. Jepson's button thistle
2. pallid manzanita
3. Oakland star-tulip

Sensitive Natural Communities (CNDDB October 2024)
The following sensitive natural communities are known to occur within the 5 mile project buffer:
1. Northern Coastal Salt Marsh
2. Northern Maritime Chaparral
3. Serpentine Bunchgrass

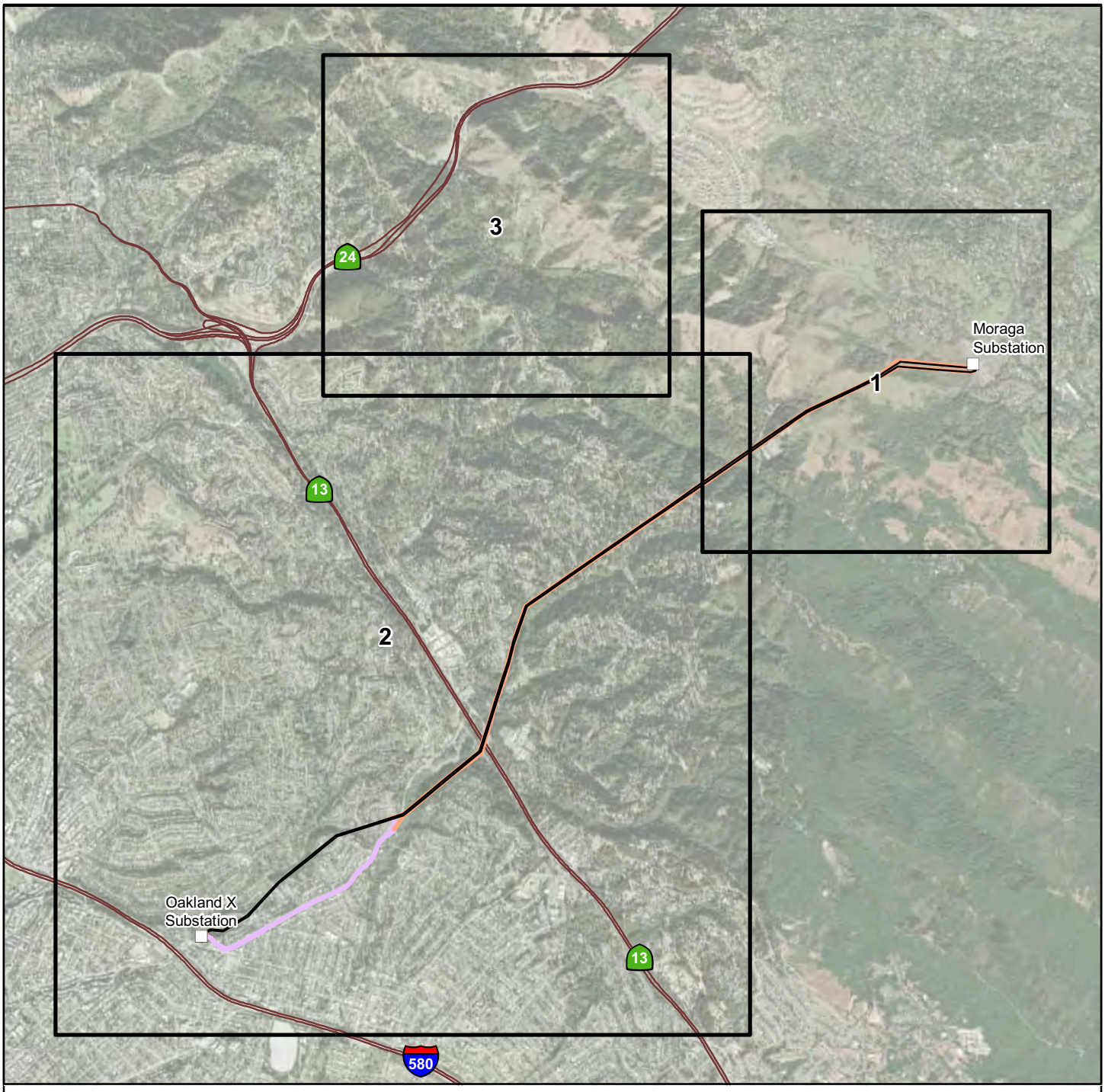
0 1 2
Miles
N

CNDDB Occurrences
The following species are known to occur within the 5 mile project buffer:

1. adobe sanicle
2. alkali milk-vetch
3. bent-flowered fiddleneck
4. California seablite
5. Choris' popcornflower
6. dark-eyed gilia
7. Diablo helianthella
8. fragrant fritillary
9. Franciscan thistle
10. Jepson's coyote-thistle
11. Kellogg's horkelia
12. Loma Prieta hoita
13. long-styled sand-spurrey
14. Marin knotweed
15. minute pocket moss
16. most beautiful jewelflower
17. Mt. Diablo fairy-lantern
18. northern slender pondweed
19. Oregon meconella
20. oval-leaved viburnum
21. pallid manzanita
22. Point Reyes salty bird's-beak
23. Presidio clarkia
24. robust spineflower
25. saline clover
26. San Francisco Bay spineflower
27. San Francisco popcornflower
28. San Joaquin spearscale
29. Santa Clara red ribbons
30. Santa Cruz tarplant
31. Tiburon buckwheat
32. western leatherwood
33. woodland woollythreads

Figure 3.4-5b

Plants: CNDDB Occurrences and USFWS Critical Habitat within 5 Miles of the Biological Study Area



Source: PG&E

Detail Map Sheet

Substation

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

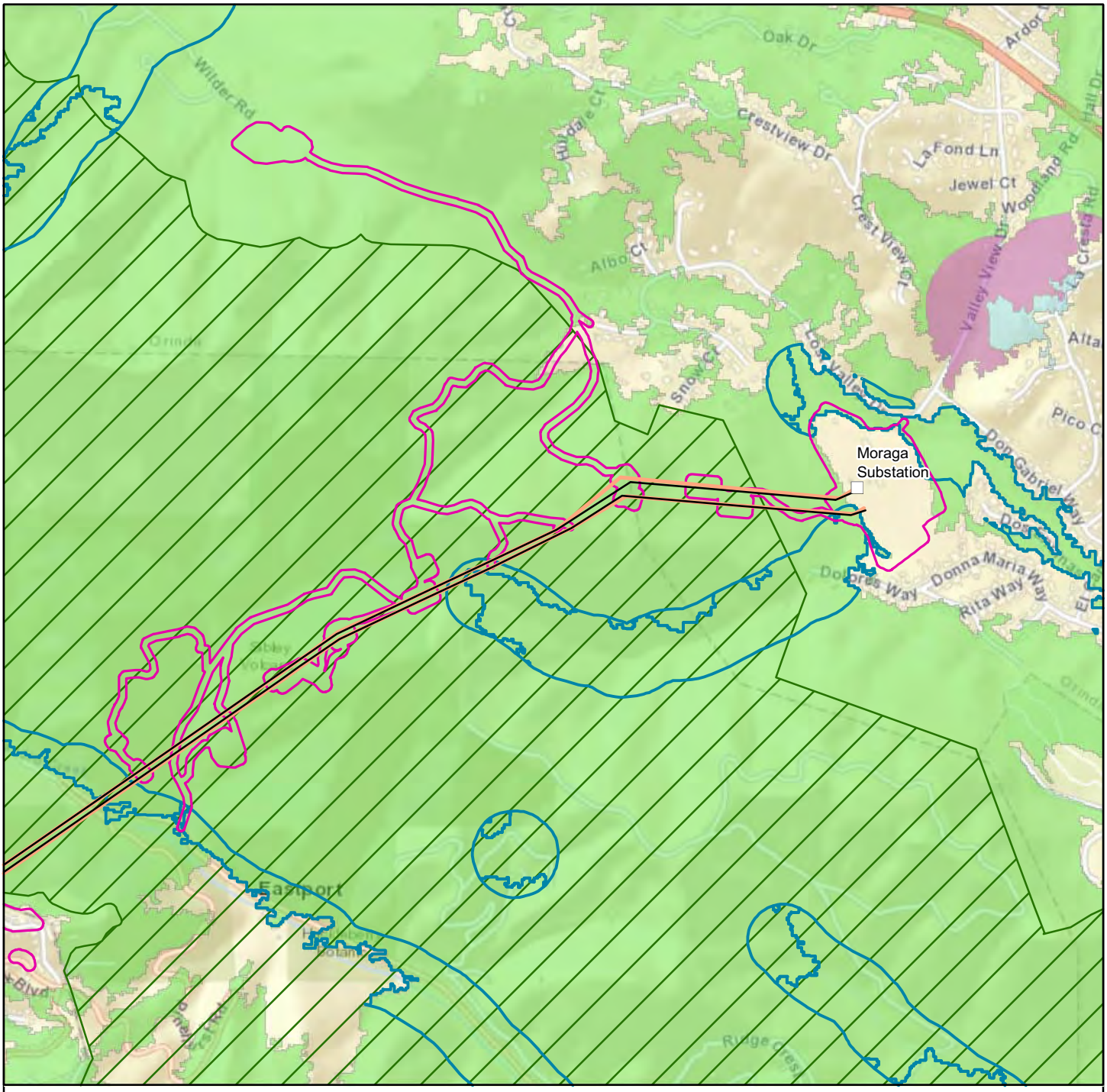
0 0.5 1

Miles

N

Figure 3.4-6

Overview
BAHCP Modeled Habitats and
USFWS Critical Habitat in the
Wildlife Assessment Field Survey Area



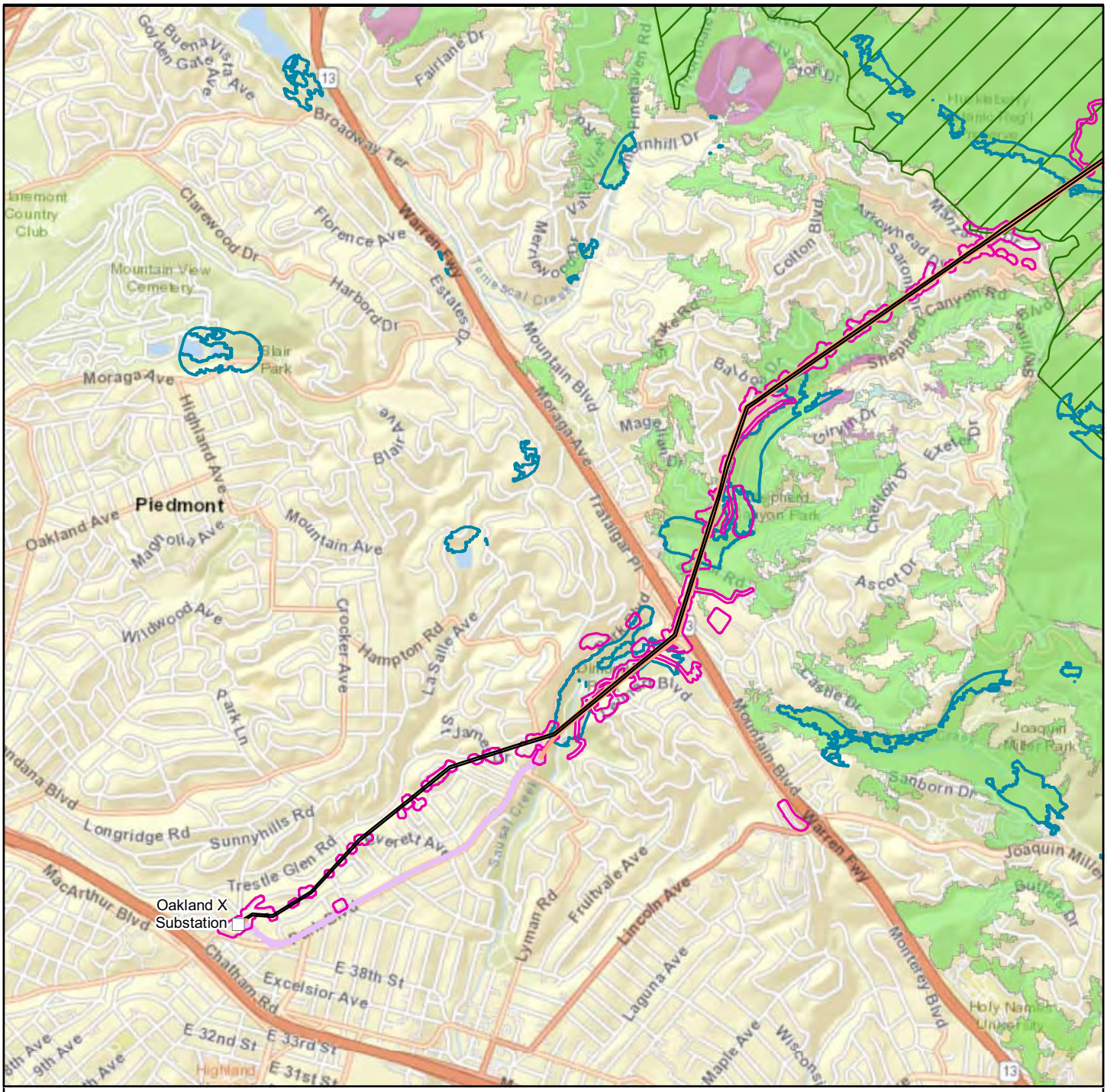
Source: PG&E

- Substation
- **Overhead Routes**
  - Existing
  - Proposed
- Wildlife Survey Area
- Critical Habitat - Alameda Whipsnake
- **BAHCP Modeled Habitats**
- **California Red-legged Frog**
  - Potential Breeding
- **Alameda Whipsnake**
  - Core
  - Perimeter Core
  - Movement

0 0.25 Miles N

Figure 3.4-6

BAHCP Modeled Habitats and USFWS Critical Habitat in the Wildlife Assessment Field Survey Area
Map 1 of 3



Source: PG&E

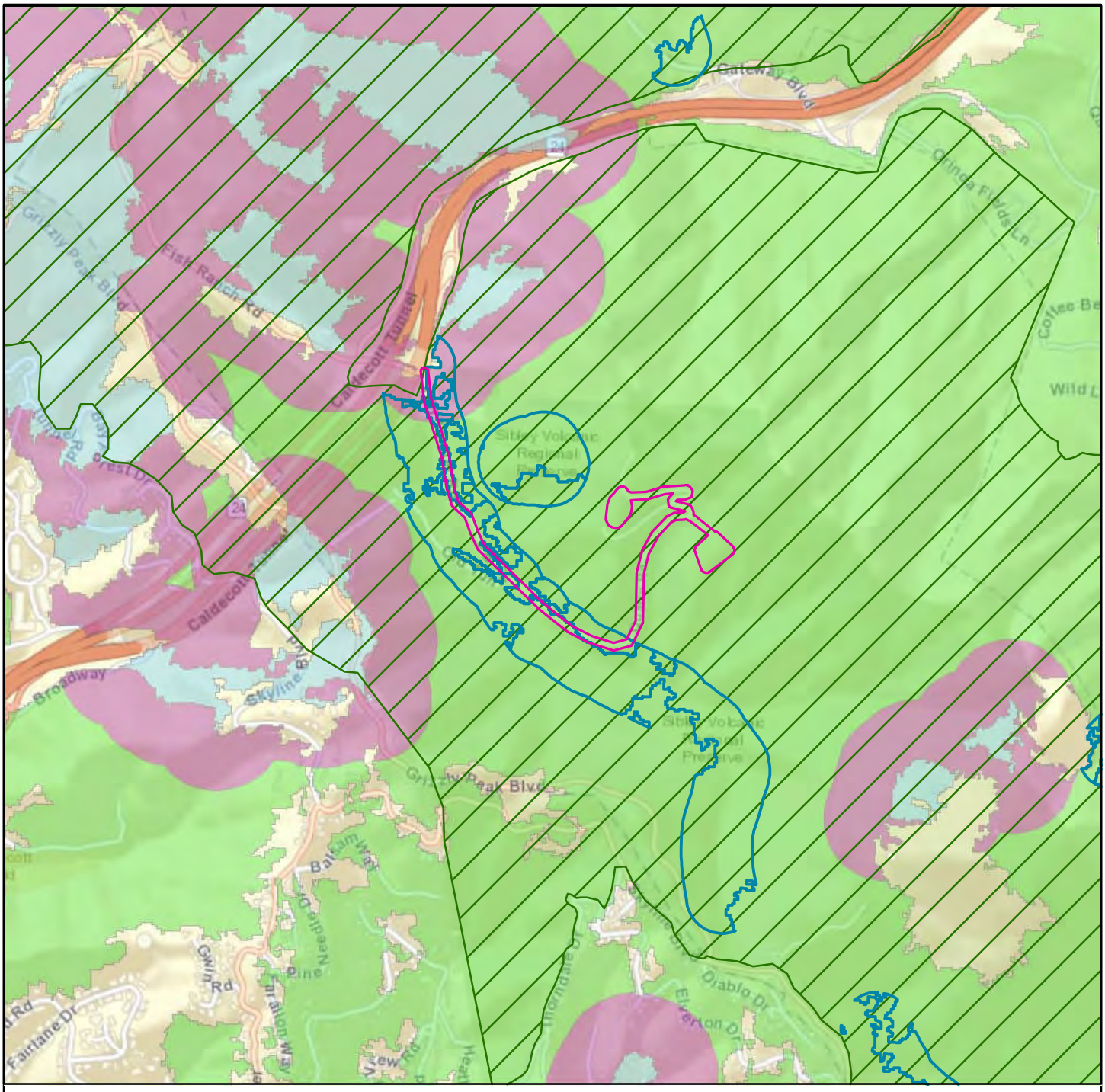
- Substation
- **Overhead Routes**
  - Existing
  - Proposed
- **Underground Routes**
  - Proposed
- Wildlife Survey Area
- Critical Habitat - Alameda Whipsnake
- **BAHCP Modeled Habitats**
- **California Red-legged Frog**
  - Potential Breeding
- **Alameda Whipsnake**
  - Core
  - Perimeter Core
  - Movement

0 0.5 Miles

N

Figure 3.4-6

BAHCP Modeled Habitats and USFWS Critical Habitat in the Wildlife Assessment Field Survey Area
Map 2 of 3



Source: PG&E

- Wildlife Survey Area
- Critical Habitat - Alameda Whipsnake

BAHCP Modeled Habitats

California Red-legged Frog

- Potential Breeding

Alameda Whipsnake

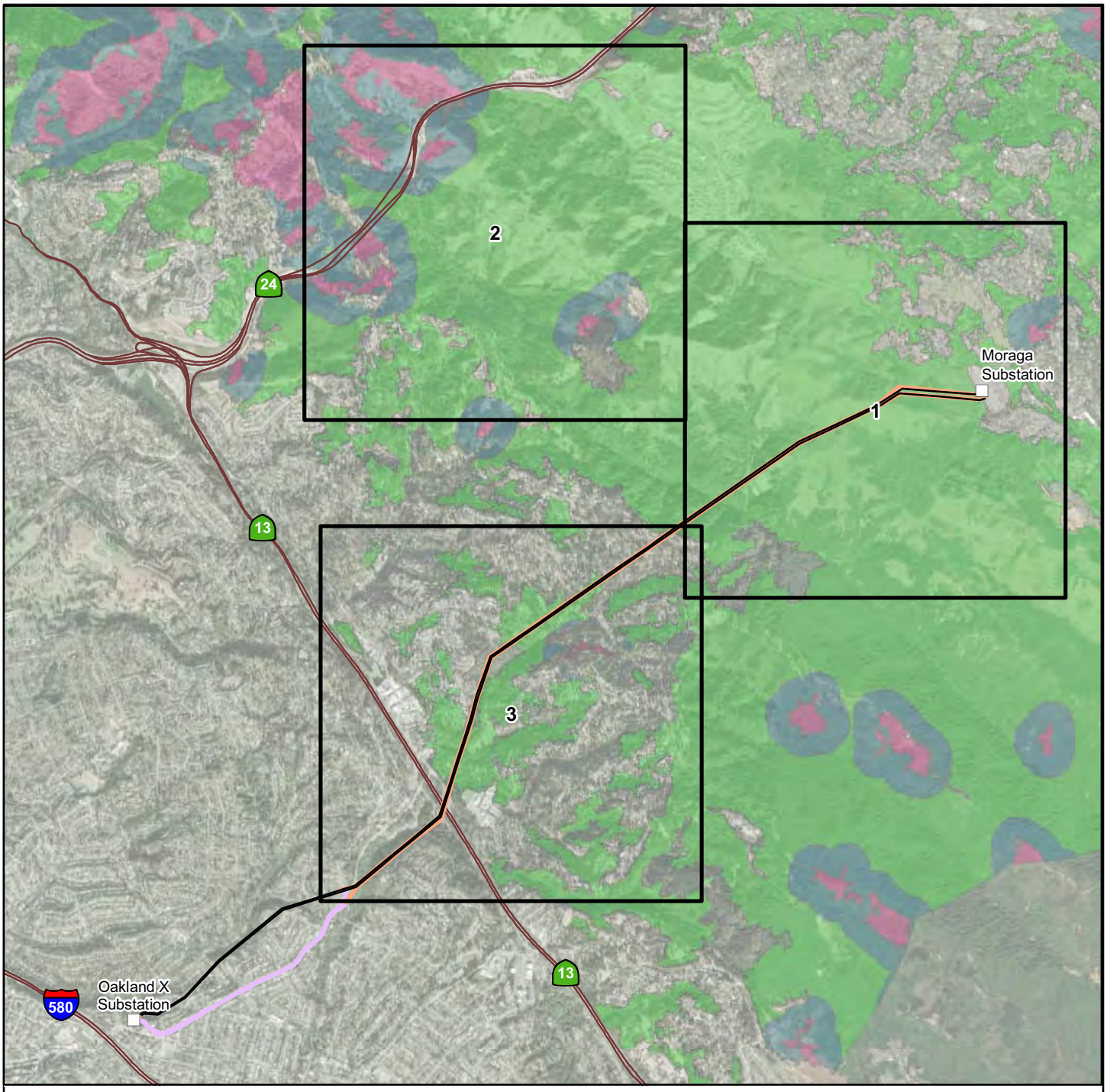
- Core
- Perimeter Core
- Movement

0 0.25
Miles

N

Figure 3.4-6

BAHCP Modeled Habitats and USFWS Critical Habitat in the Wildlife Assessment Field Survey Area
Map 3 of 3



Source: PG&E

Detail Map Sheet

Substation

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

Alameda Whipsnake Habitat

Core

Movement

Perimeter Core

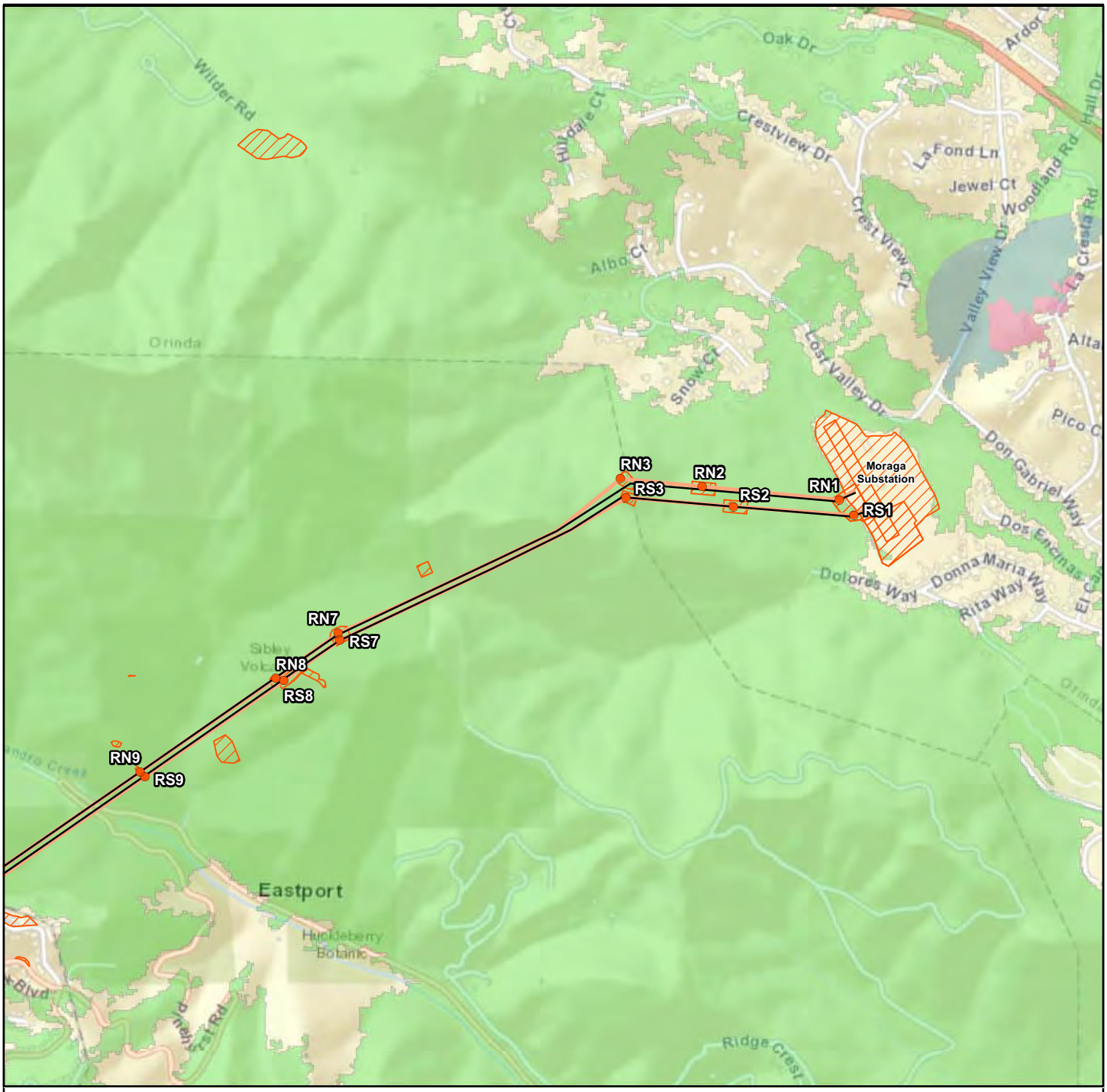
0 0.5 1

Miles

N

Figure 3.4-7

Overview
Alameda Whipsnake HCP
Modeled Habitat and Impacts



Source: PG&E

Permanent Impact Areas
- Proposed Overhead Structure

Temporary Impact Areas
- Work Area

Overhead Routes
- Existing
- Proposed

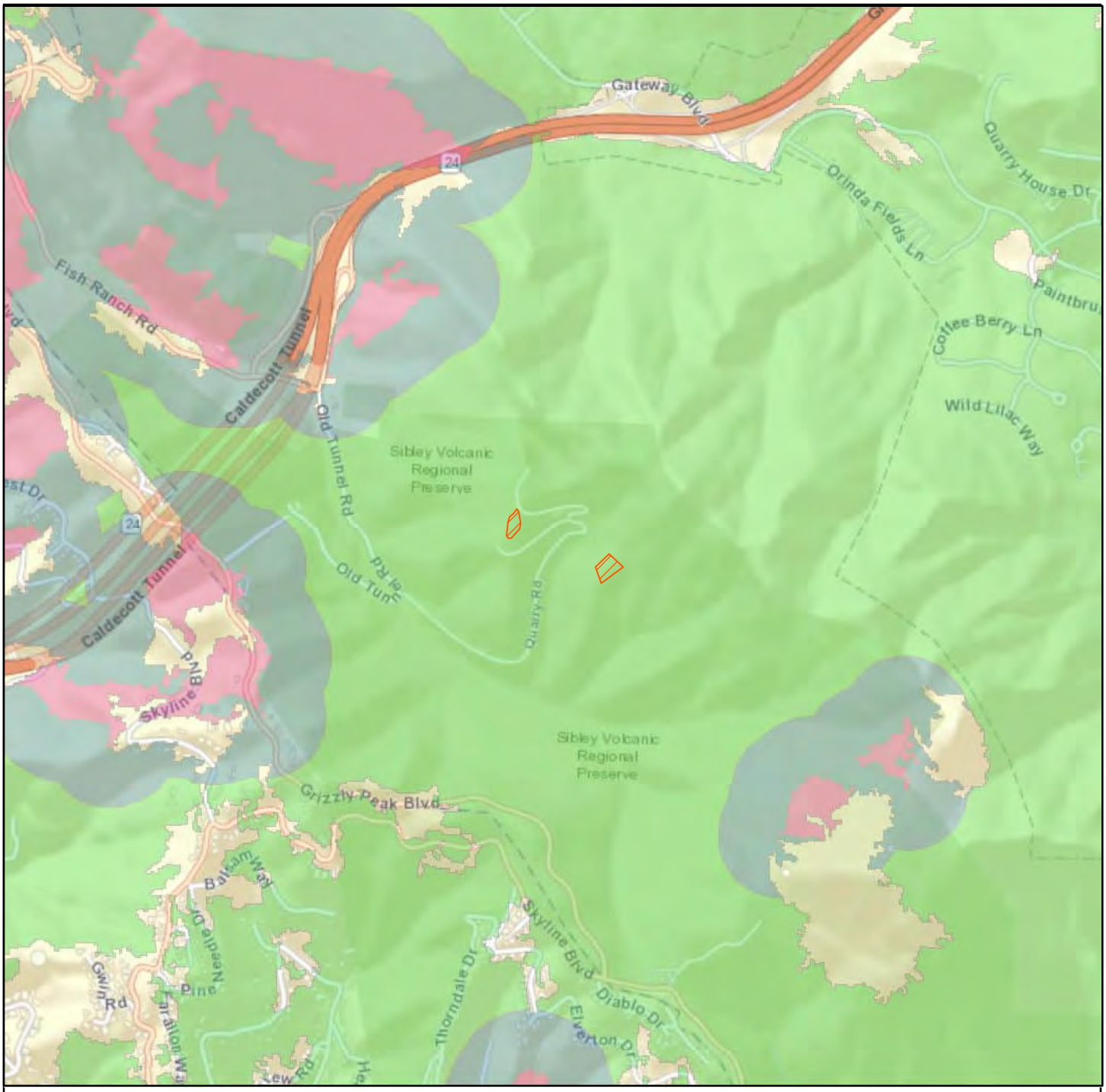
Alameda Whipsnake Habitat
- Core
- Movement
- Perimeter Core

0 0.25 Miles

N

Figure 3.4-7

Alameda Whipsnake HCP
Modeled Habitat and Impacts
Map 1 of 3



Source: PG&E

Temporary Impact Areas

Work Area

Alameda Whipsnake Habitat

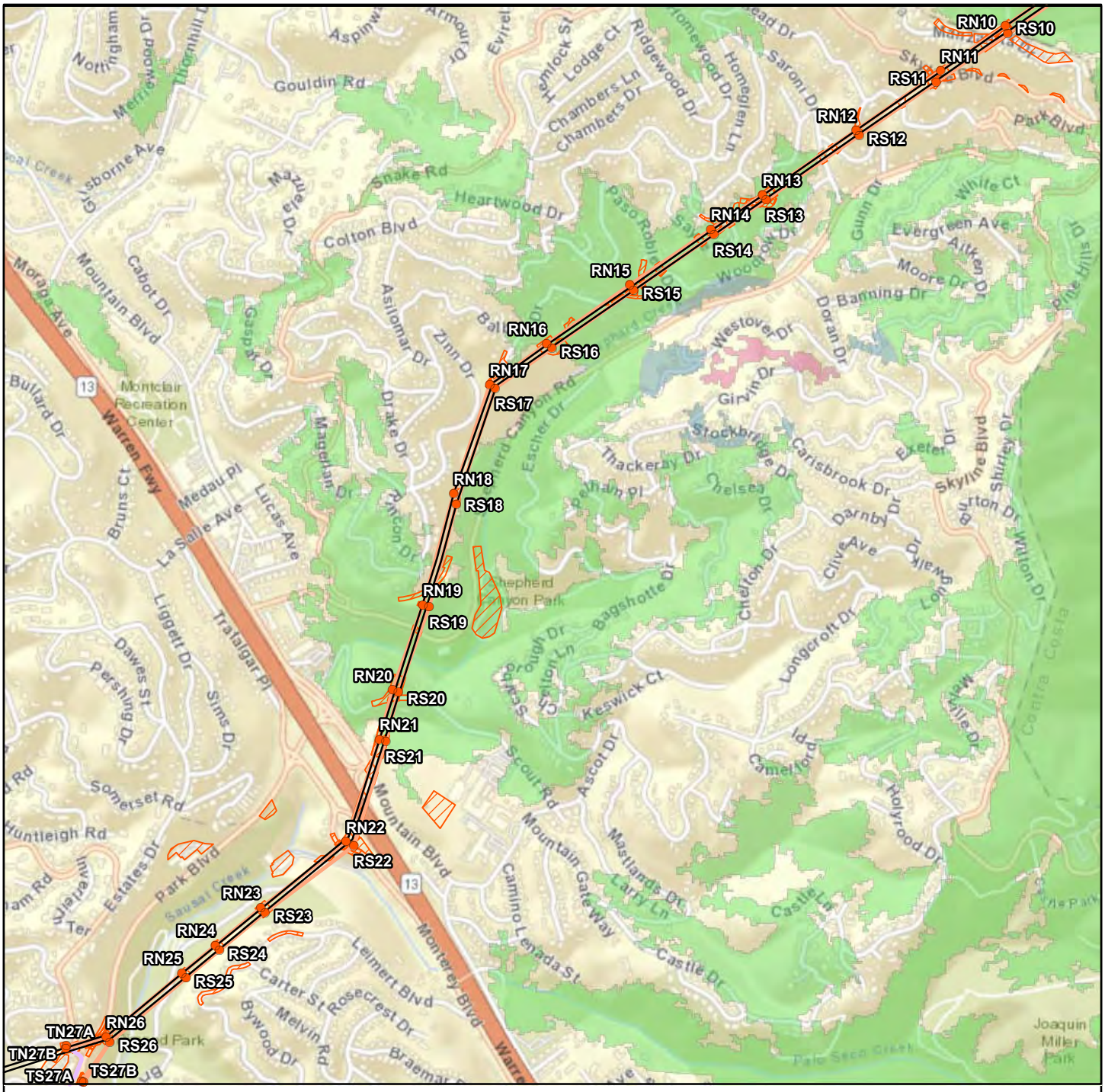
- Core
- Movement
- Perimeter Core

0 0.25 Miles

N

Figure 3.4-7

Alameda Whipsnake HCP
Modeled Habitat and Impacts
Map 2 of 3



Source: PG&E

Permanent Impact Areas
- Proposed Overhead Structure

Temporary Impact Areas
- Work Area

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed

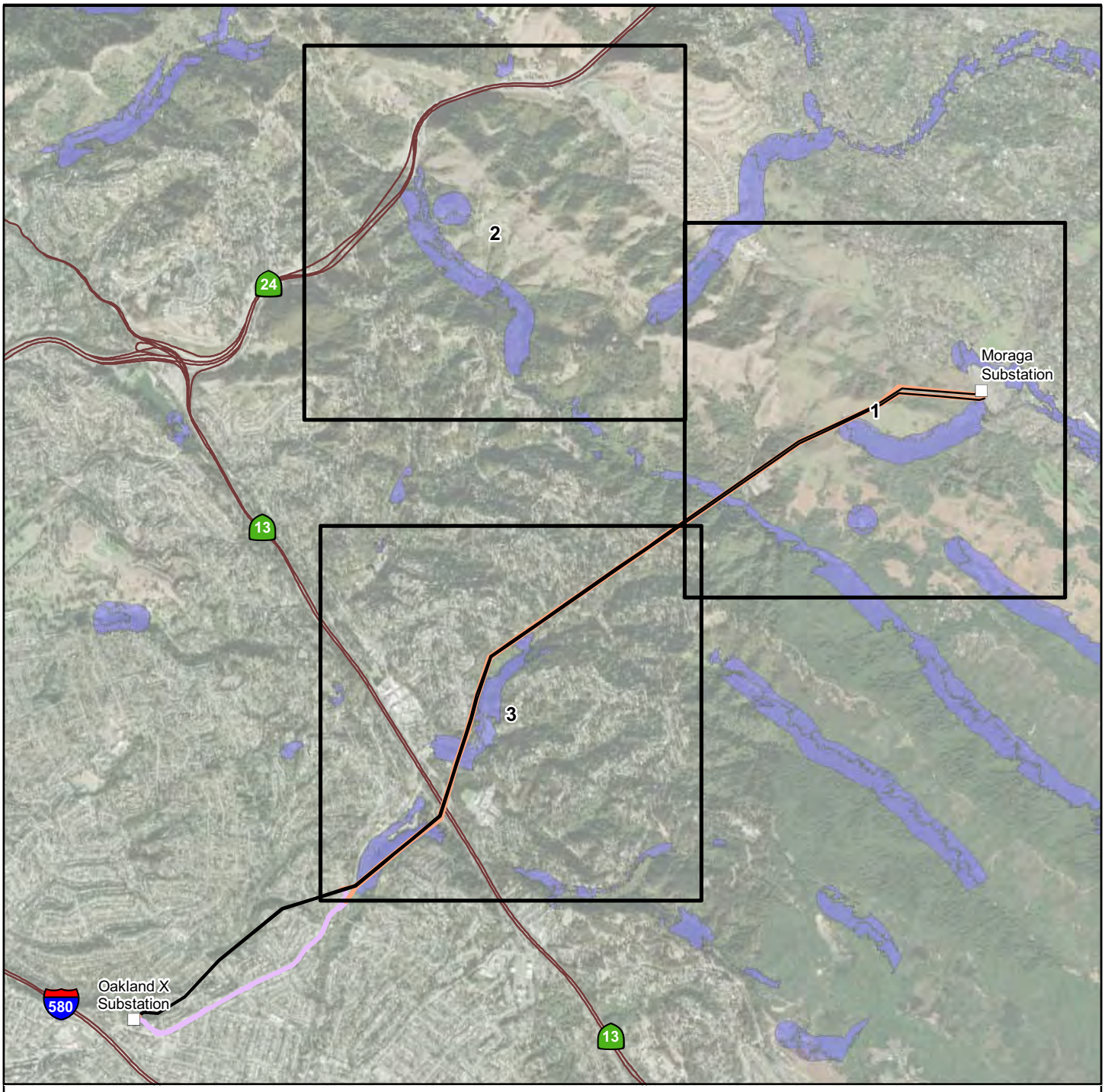
Alameda Whipsnake Habitat
- Core
- Movement
- Perimeter Core

0 0.25 Miles

N

Figure 3.4-7

Alameda Whipsnake HCP
Modeled Habitat and Impacts
Map 3 of 3



Source: PG&E

Detail Map Sheet

Substation

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

California Red-legged Frog Habitat

Potential Breeding

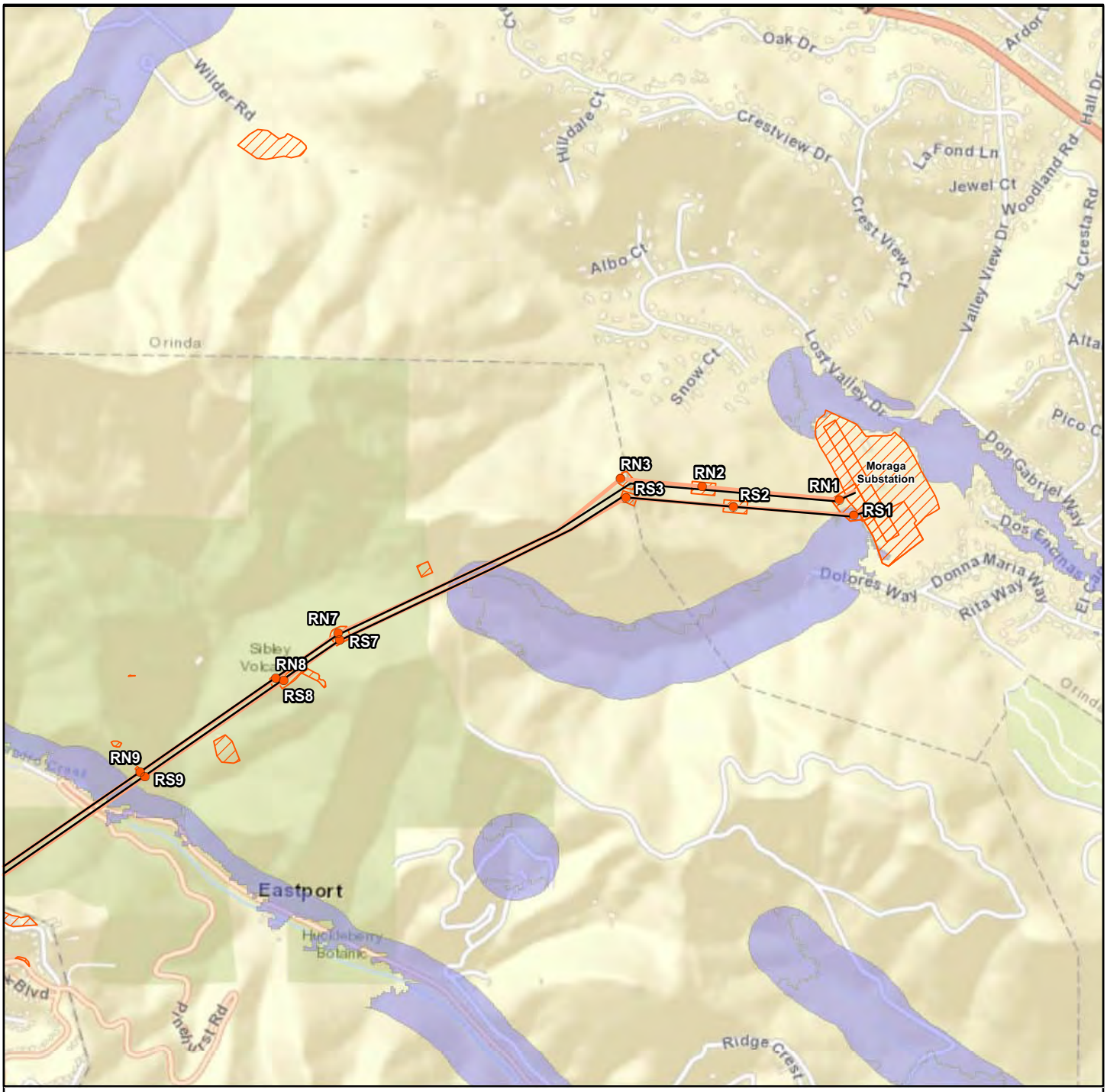
0 0.5 1

Miles

N

Figure 3.4-8

Overview
California Red-Legged Frog HCP
Modeled Habitat and Impacts



Source: PG&E

Permanent Impact Areas
- Proposed Overhead Structure

Temporary Impact Areas
- Work Area

Overhead Routes
- Existing
- Proposed

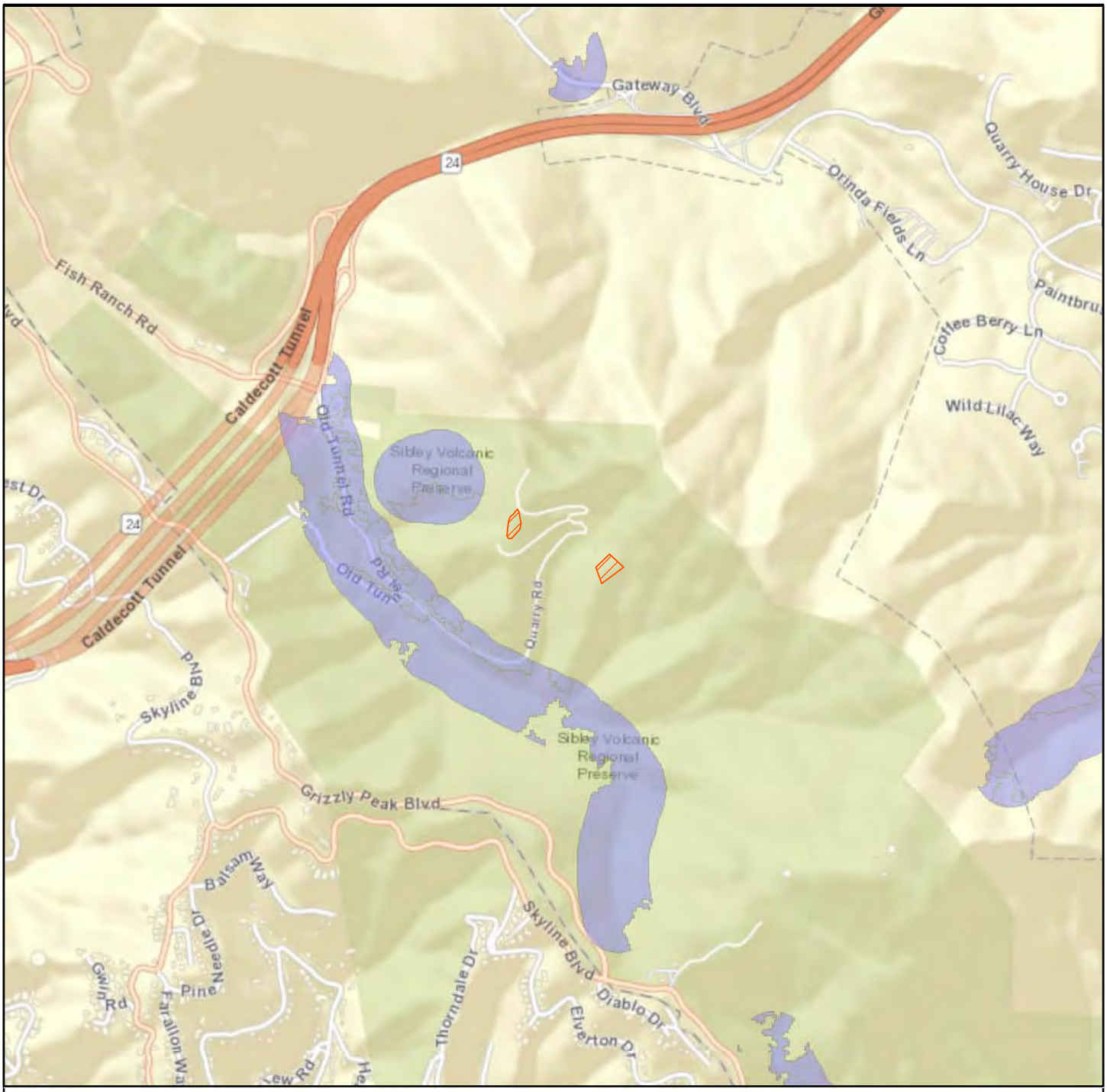
California Red-legged Frog Habitat
- Potential Breeding

0 0.25 Miles

N

Figure 3.4-8

California Red-Legged Frog HCP
Modeled Habitat and Impacts
Map 1 of 3



Source: PG&E

Temporary Impact Areas
Work Area

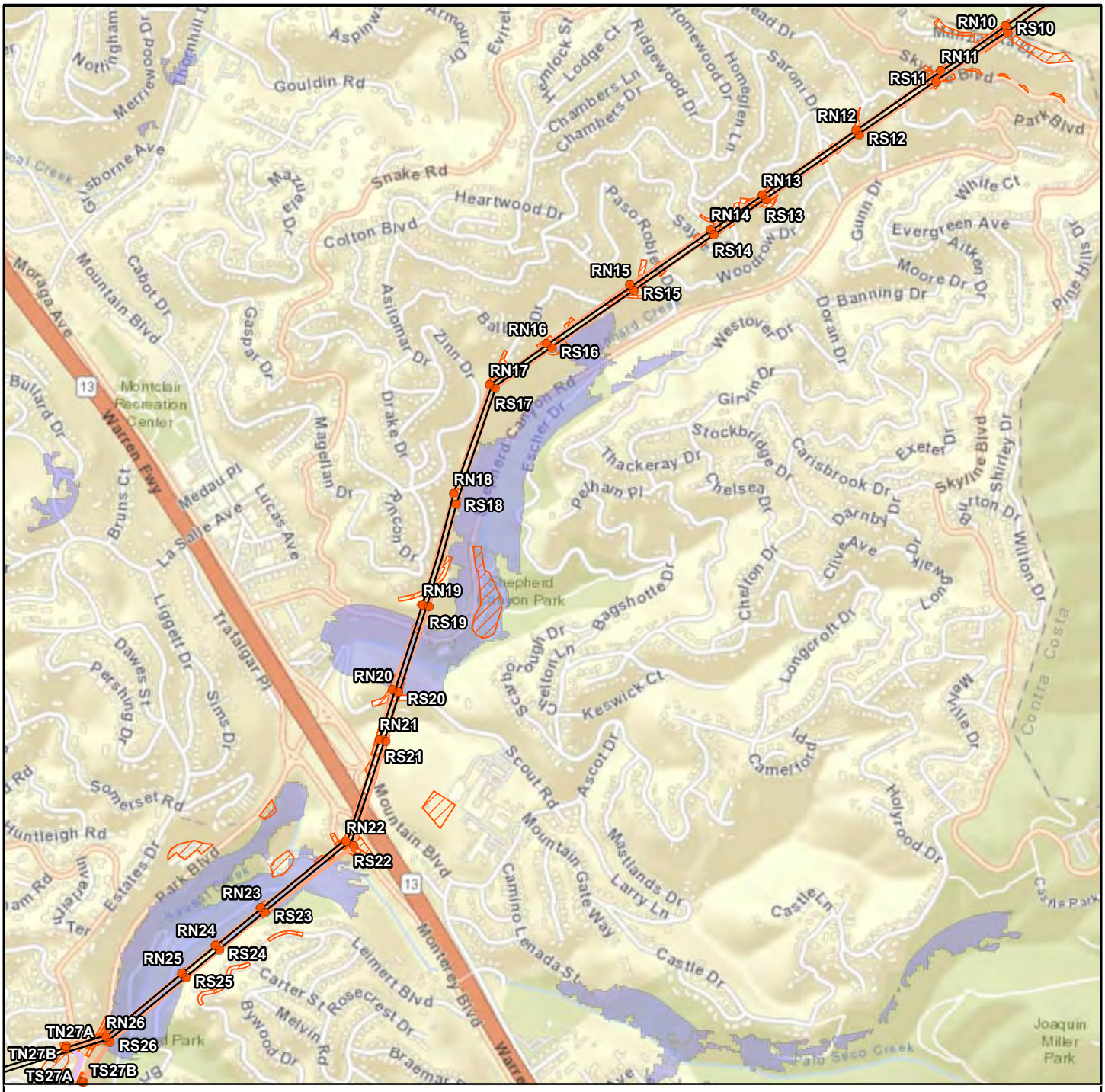
California Red-legged Frog Habitat
Potential Breeding

0 0.25
Miles

N

Figure 3.4-8

California Red-Legged Frog HCP
Modeled Habitat and Impacts
Map 2 of 3



Source: PG&E

Permanent Impact Areas

- Proposed Overhead Structure

Temporary Impact Areas

- Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

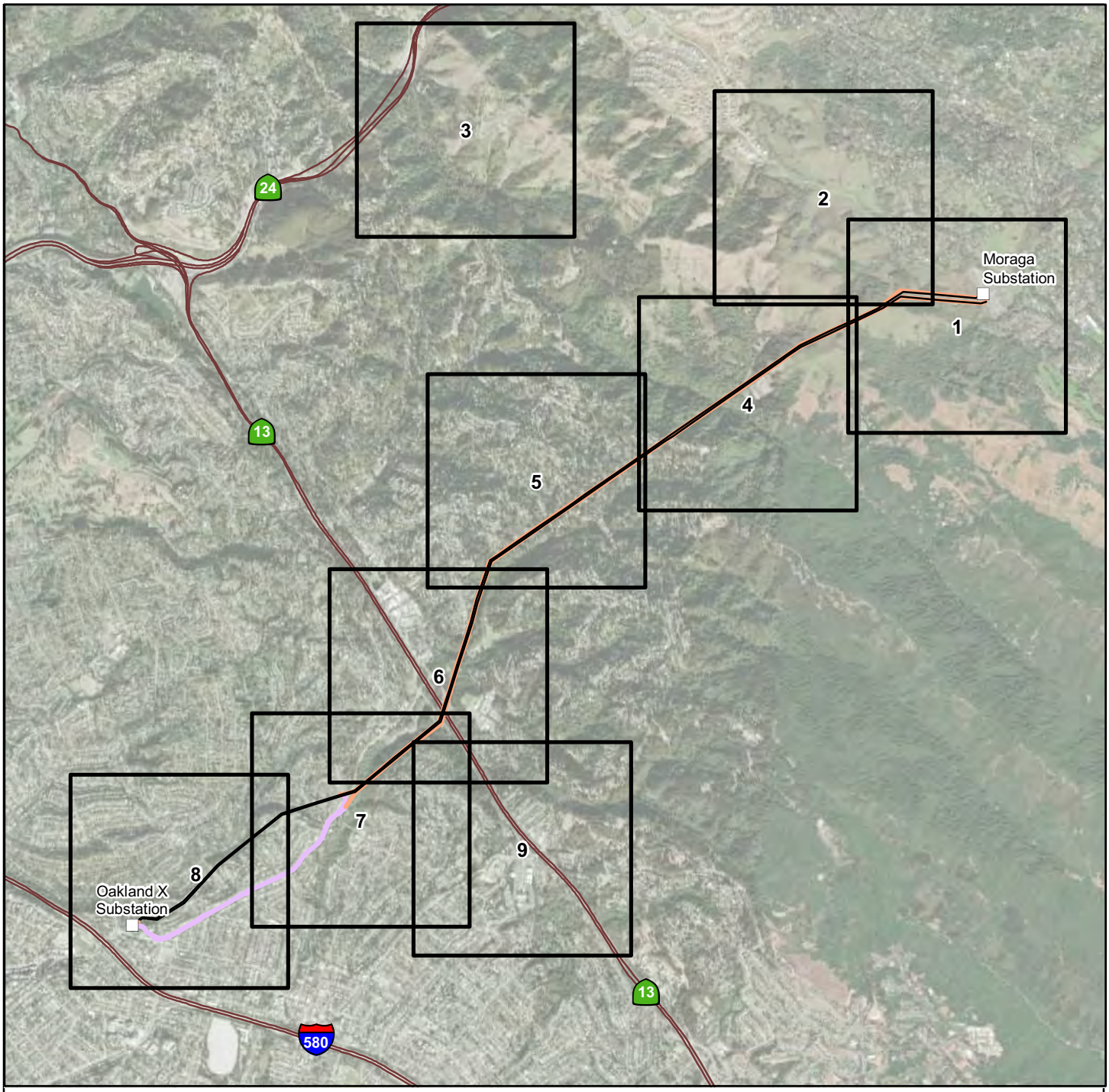
- Proposed

California Red-legged Frog Habitat

- Potential Breeding

Figure 3.4-8

California Red-Legged Frog HCP
Modeled Habitat and Impacts
Map 3 of 3



Source: PG&E

Note: The detail map sheets cover the proposed project routes and construction work areas and access.

Detail Map Sheet

Substation

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

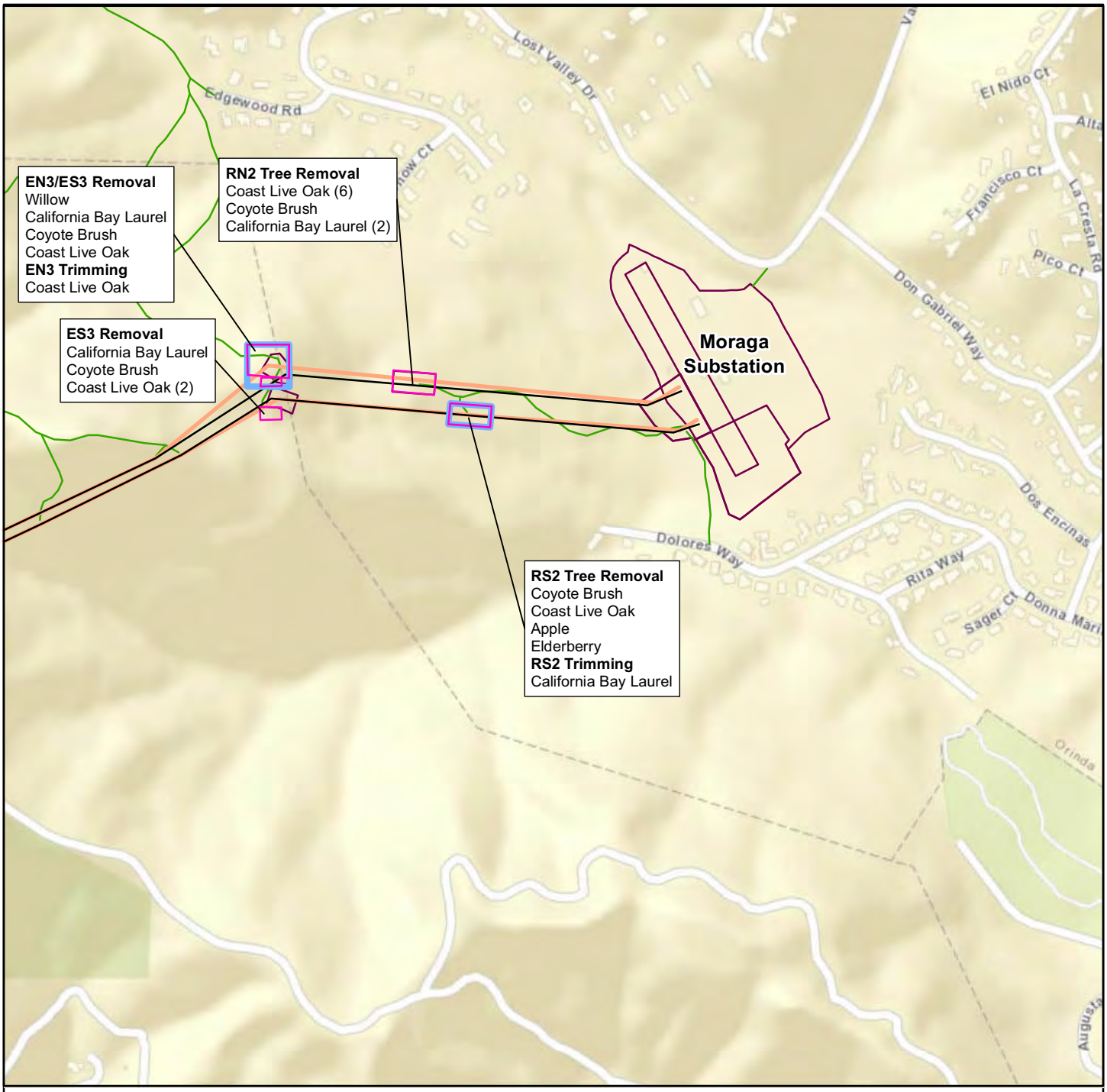
0 0.5 1

Miles

N

Figure 3.4-9

Overview
Potential Tree Trimming and Removal



Source: PG&E

- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Potential Vegetation Management Areas

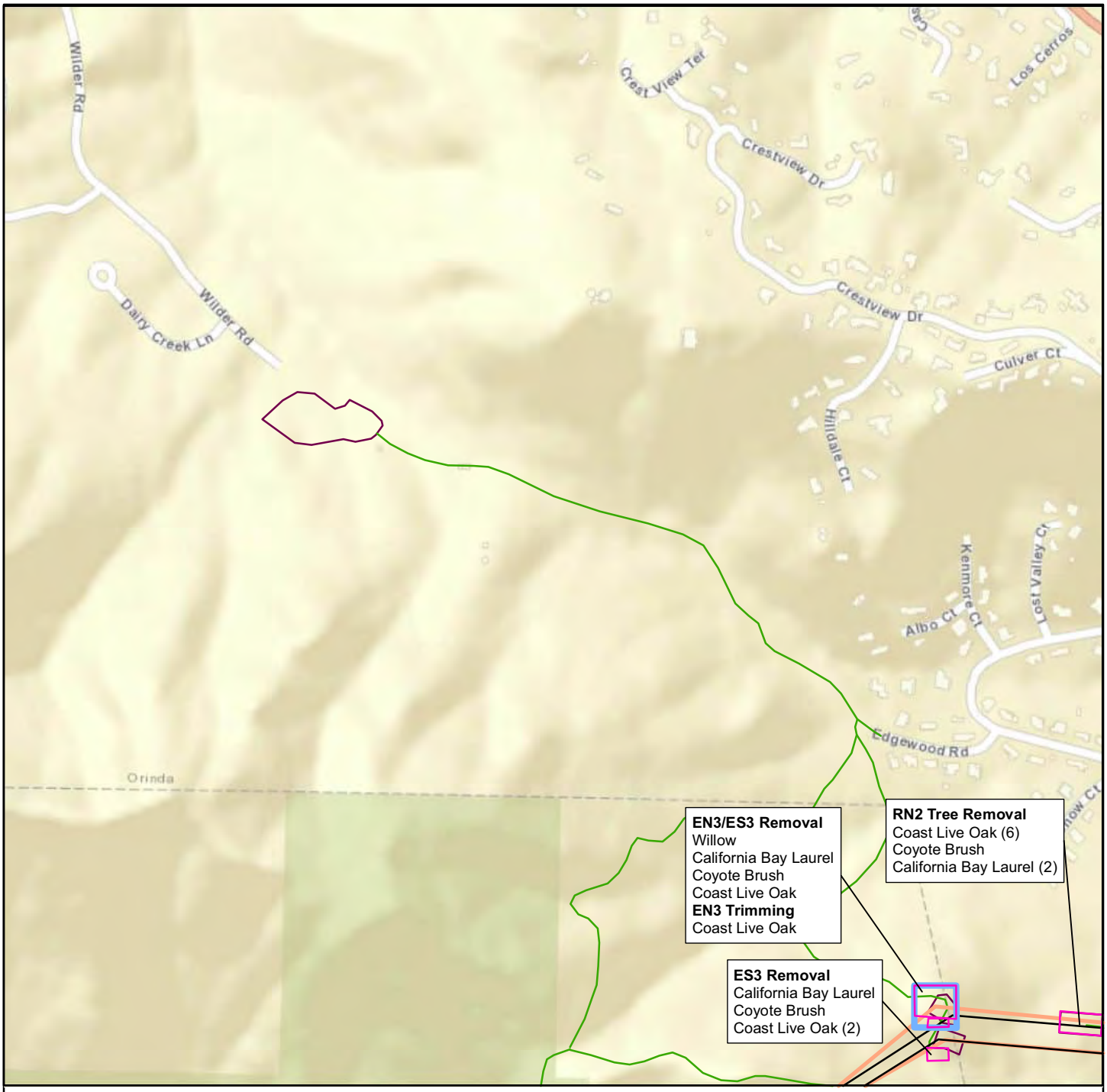
- Removal
- Trimming

0 750
Feet

N

Figure 3.4-9

Potential Tree Trimming and Removal
Map 1 of 9



Source: PG&E

Project Access

Temporary Work Area

Overhead Routes

Existing

Proposed

Potential Vegetation Management Areas

Removal

Trimming

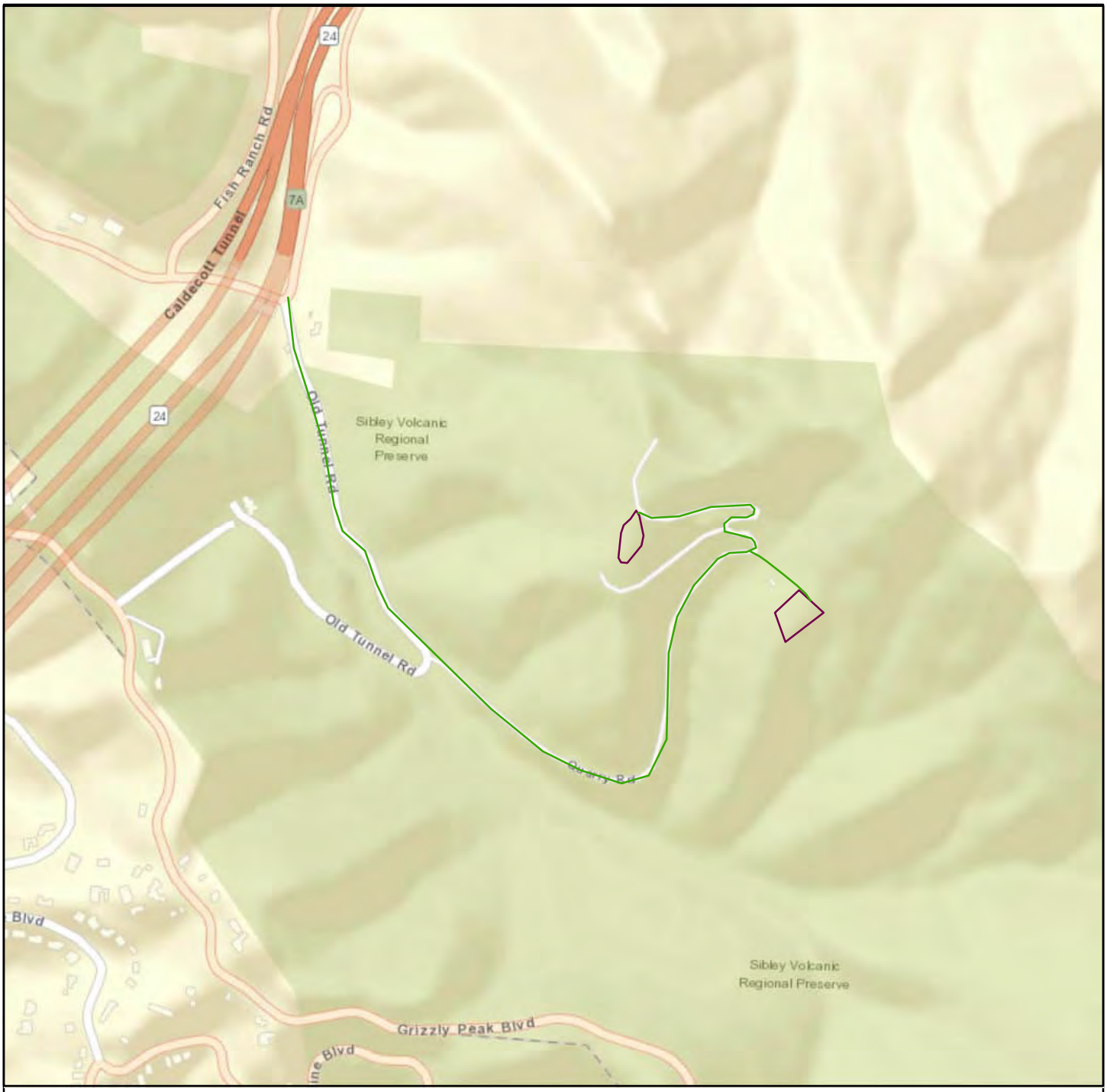
0 750

Feet

N

Figure 3.4-9

Potential Tree Trimming and Removal
Map 2 of 9



Source: PG&E

Project Access

Temporary Work Area

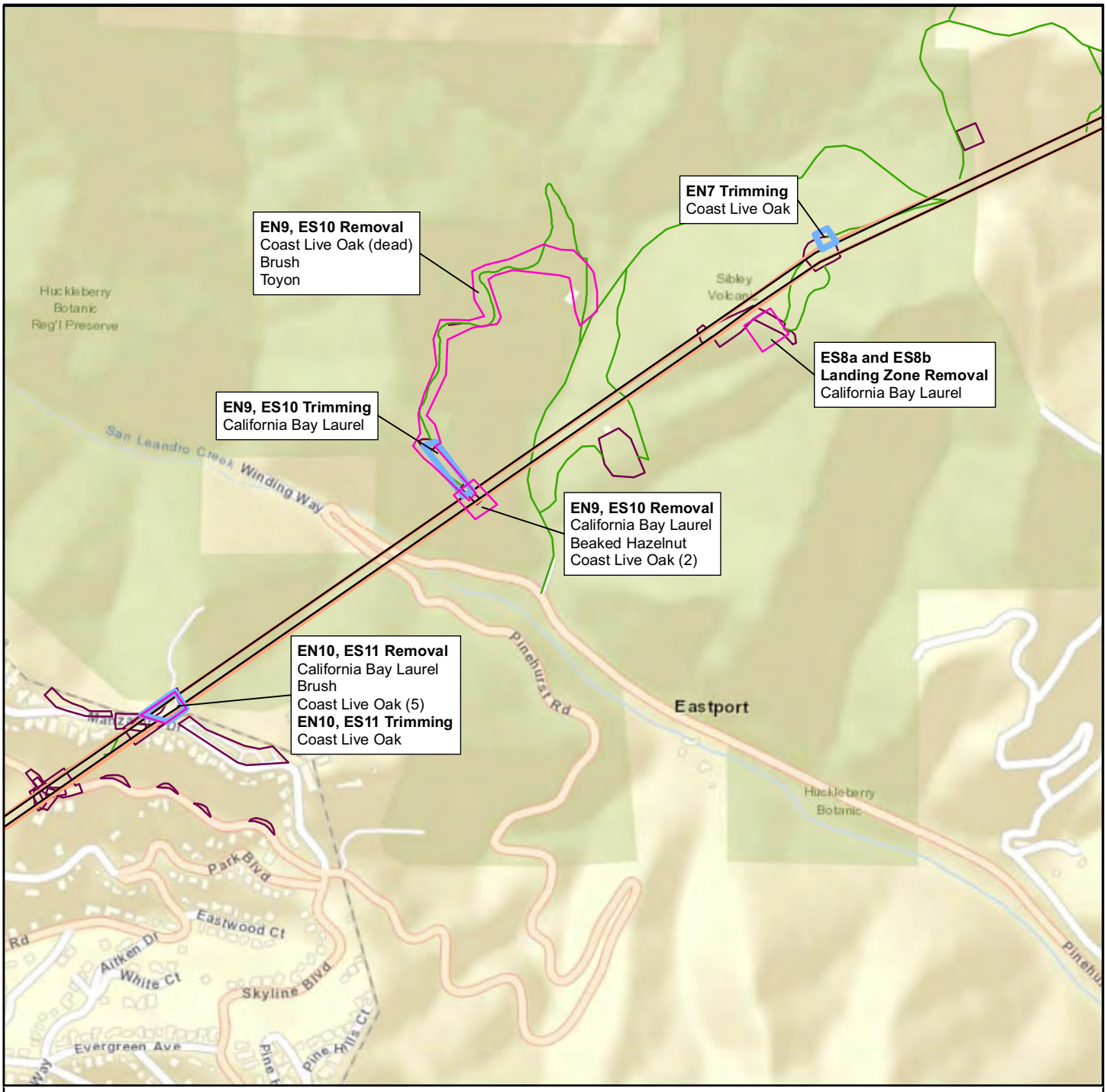
0 750

Feet

N

Figure 3.4-9

Potential Tree Trimming and Removal
Map 3 of 9



Source: PG&E

- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Potential Vegetation Management Areas

- Removal
- Trimming

0 750
Feet
N

Figure 3.4-9

Potential Tree Trimming and Removal
Map 4 of 9

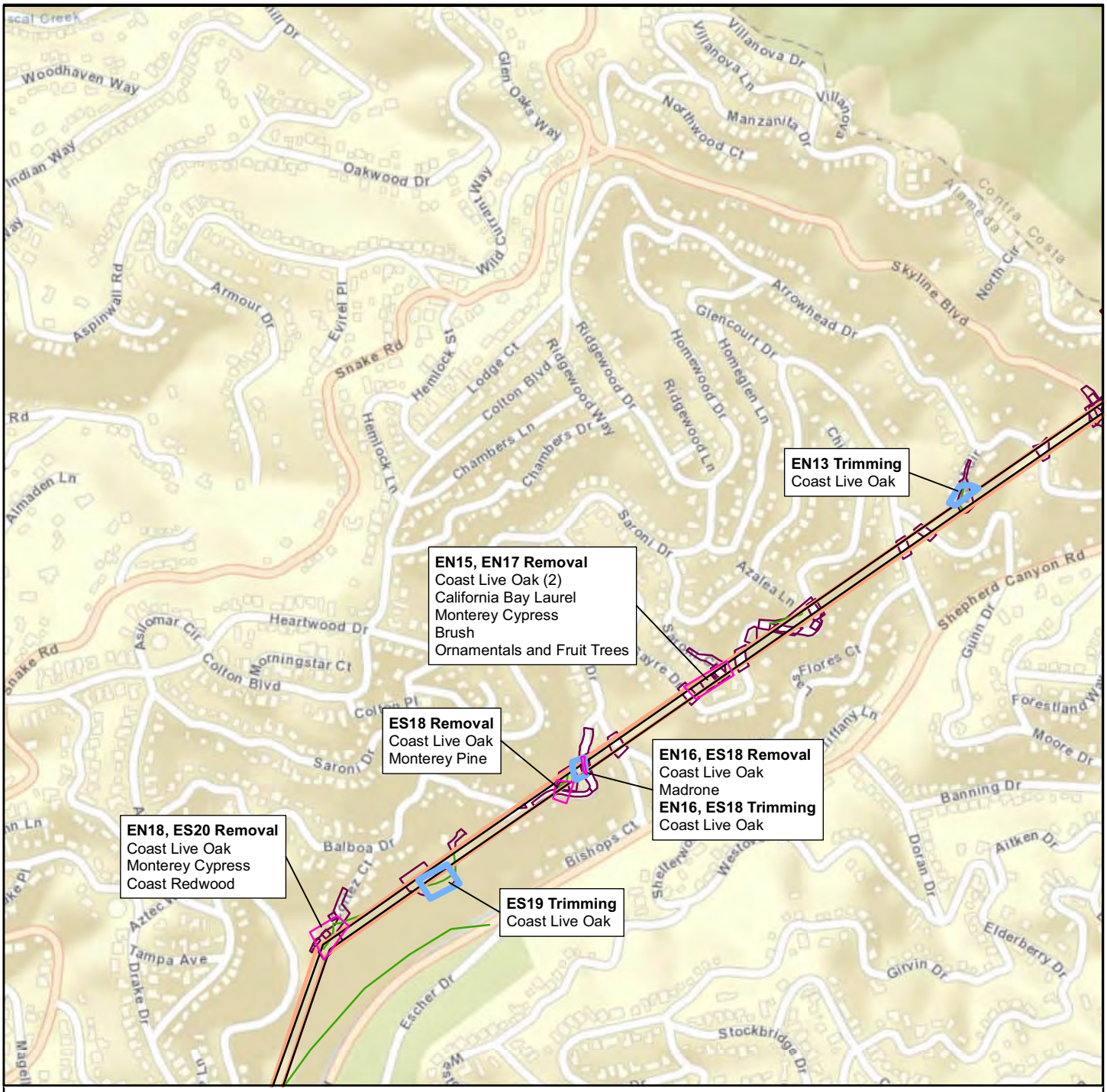


Figure 3.4-9

Potential Tree Trimming and Removal
Map 5 of 9

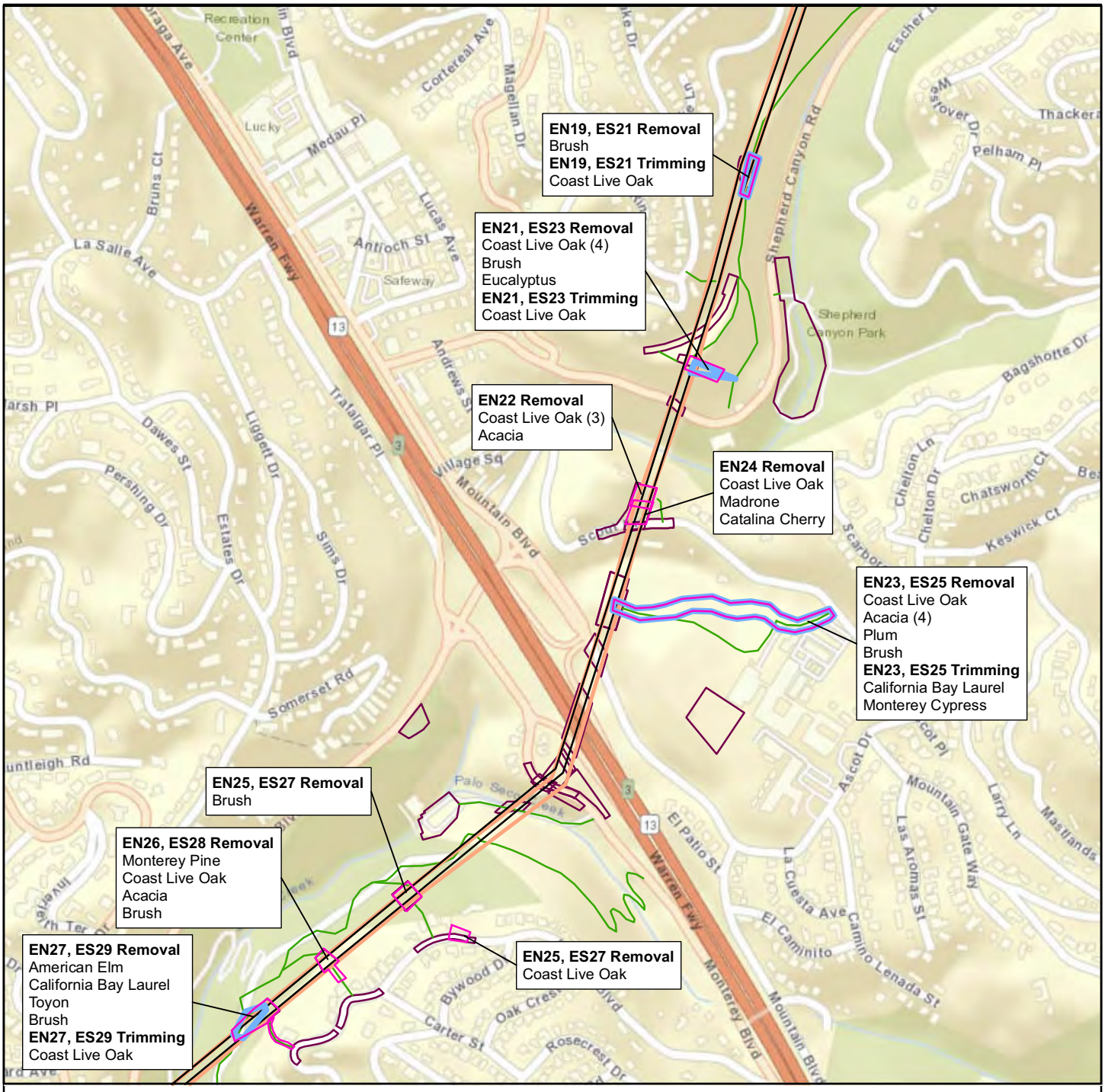
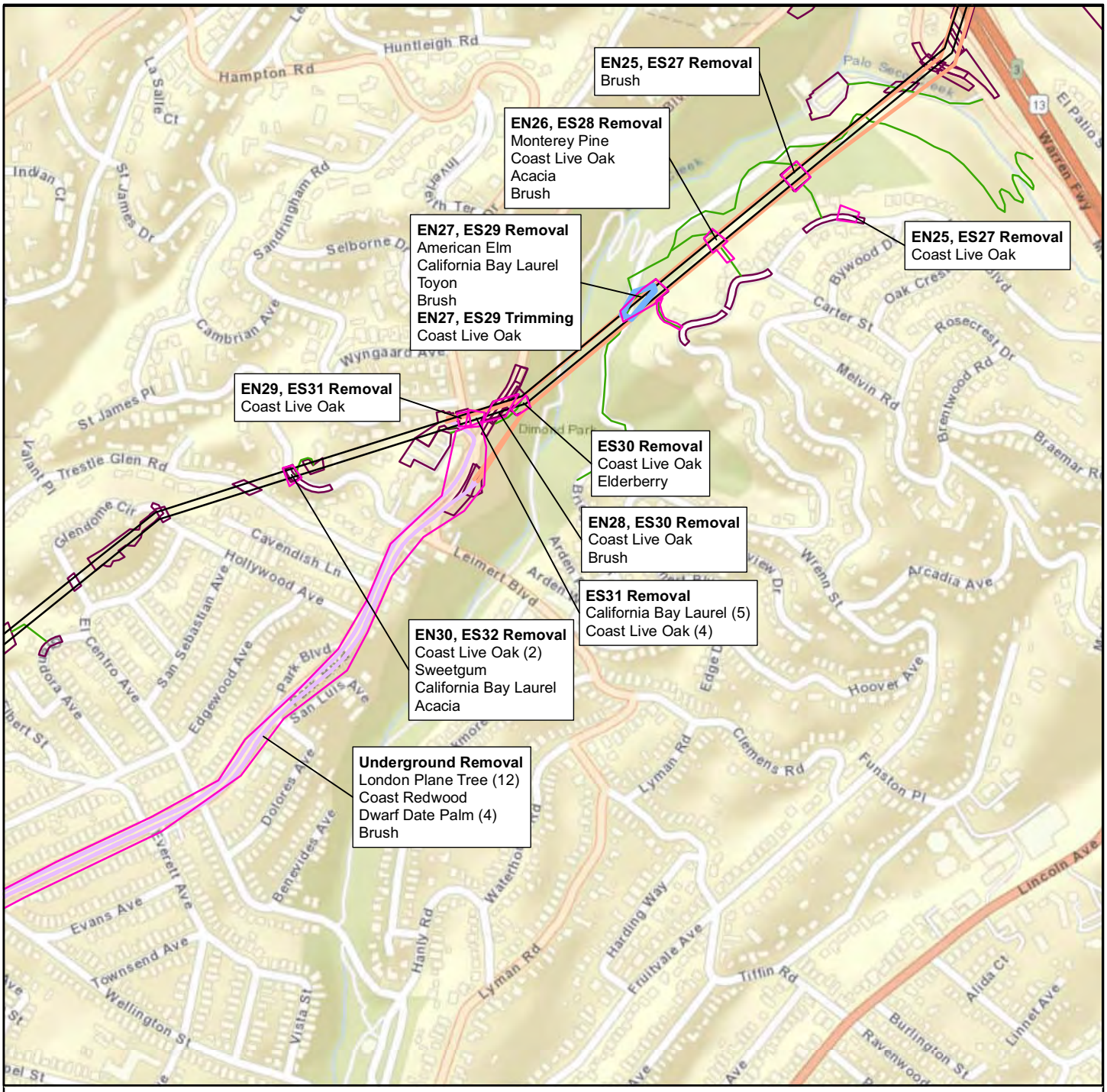


Figure 3.4-9

Potential Tree Trimming and Removal
Map 6 of 9



Source: PG&E

- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

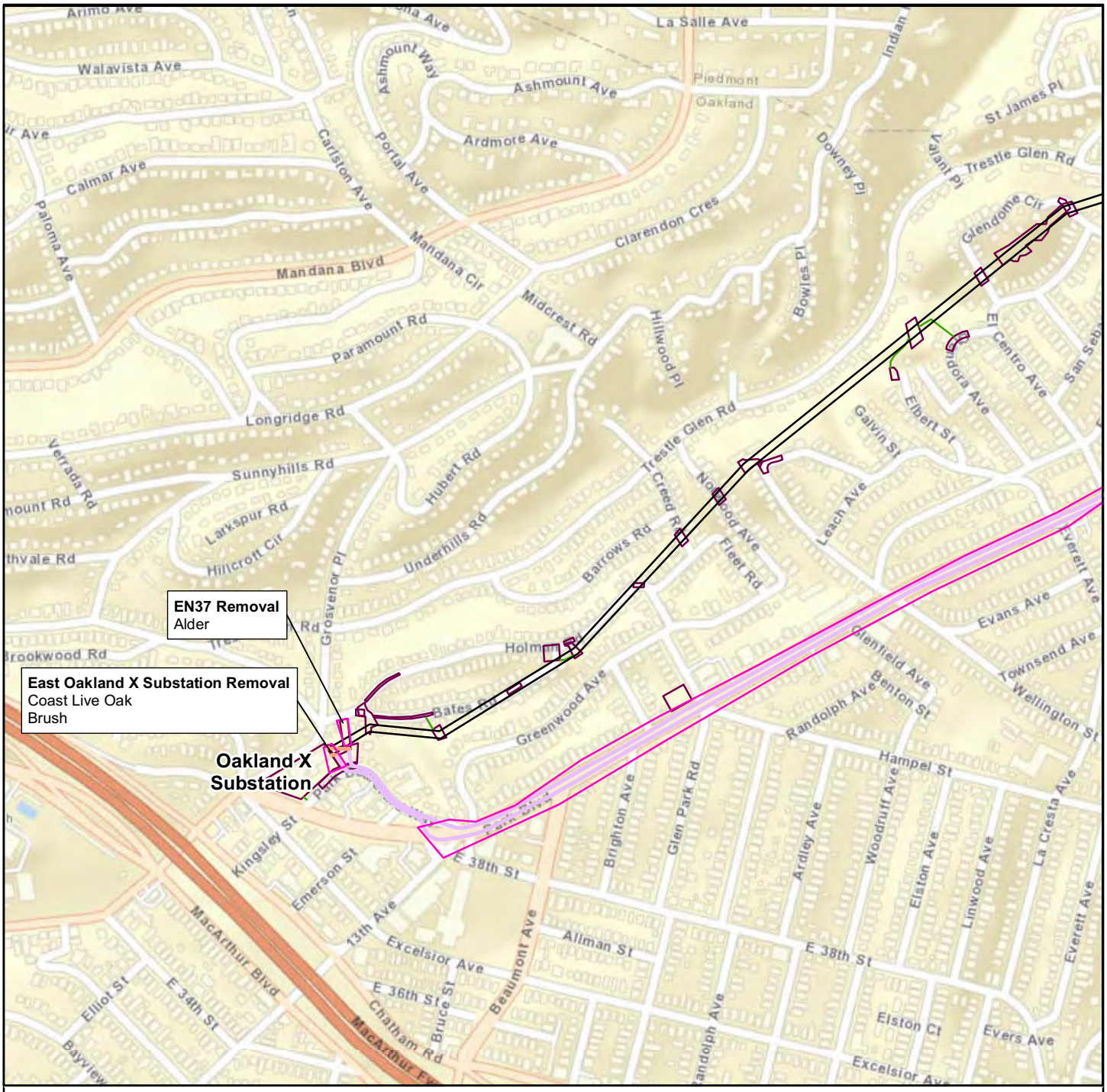
Potential Vegetation Management Areas

- Removal
- Trimming

0 750
Feet
N

Figure 3.4-9

Potential Tree Trimming and Removal
Map 7 of 9



Source: PG&E

- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

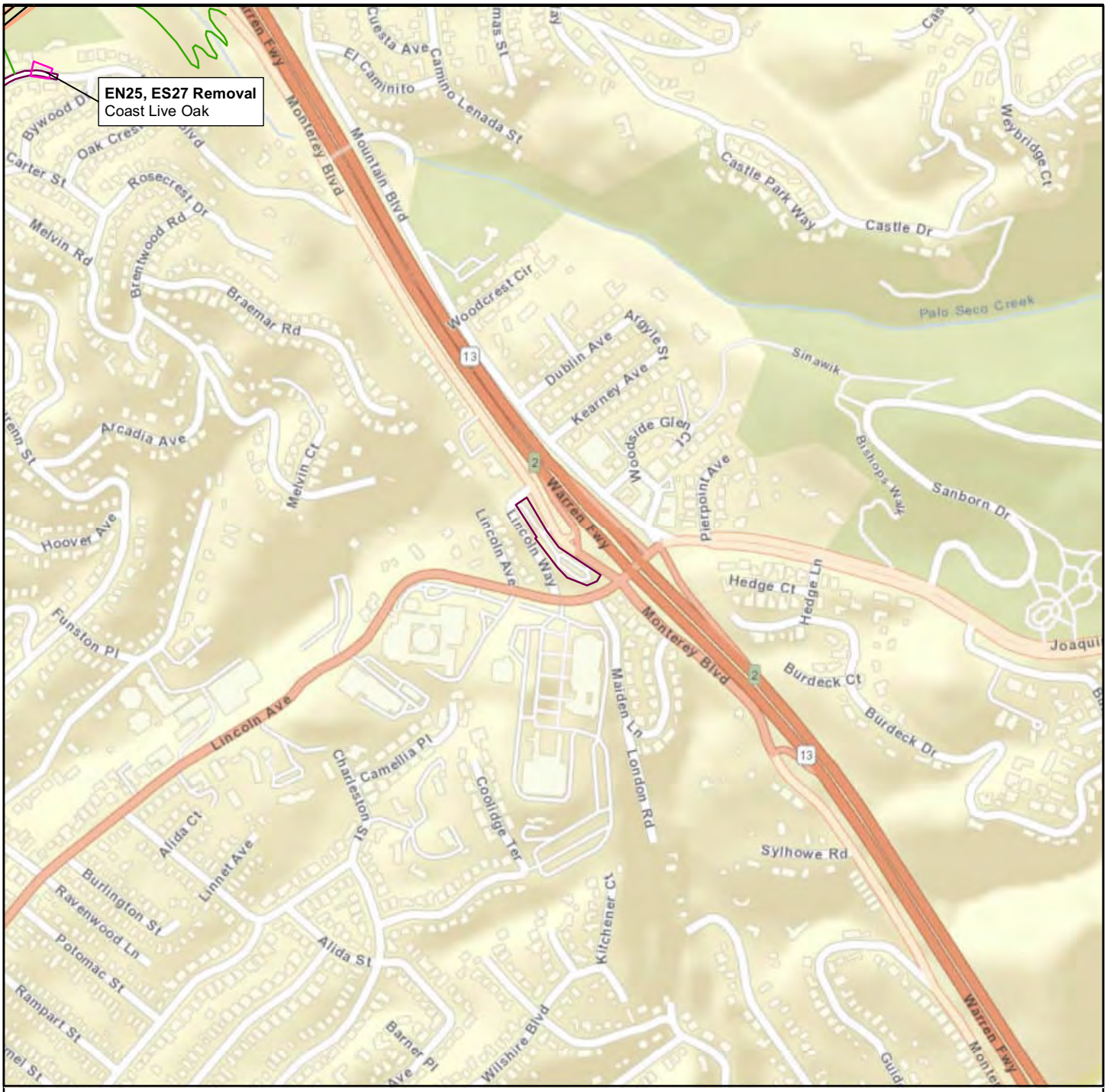
Potential Vegetation Management Areas

- Removal

0 750
Feet
N

Figure 3.4-9

Potential Tree Trimming and Removal
Map 8 of 9



Source: PG&E

Project Access

Temporary Work Area

Overhead Routes

Existing

Proposed

Potential Vegetation Management Areas

Removal

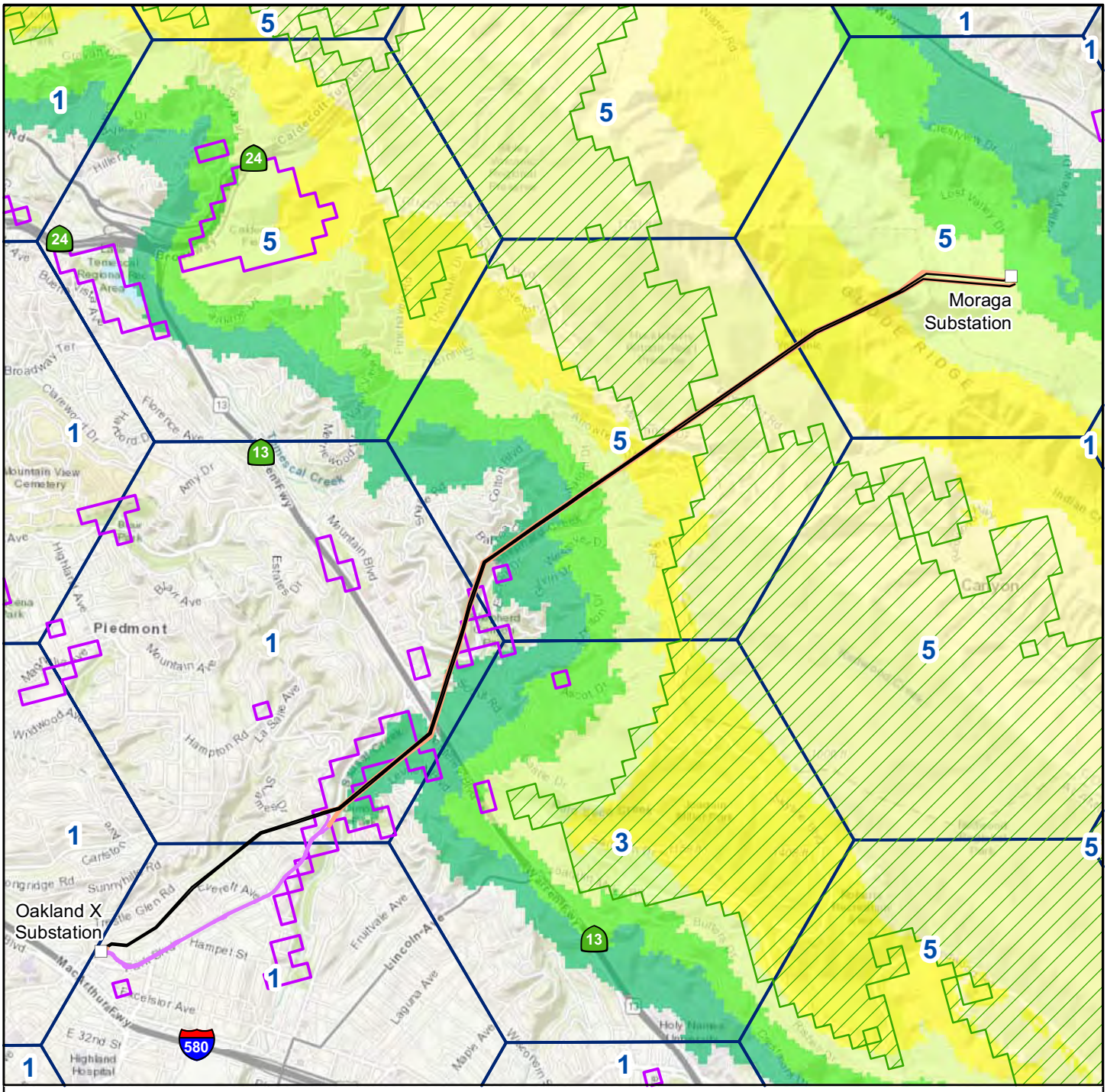
0 750

Feet

N

Figure 3.4-9

Potential Tree Trimming and Removal
Map 9 of 9



Source: PG&E

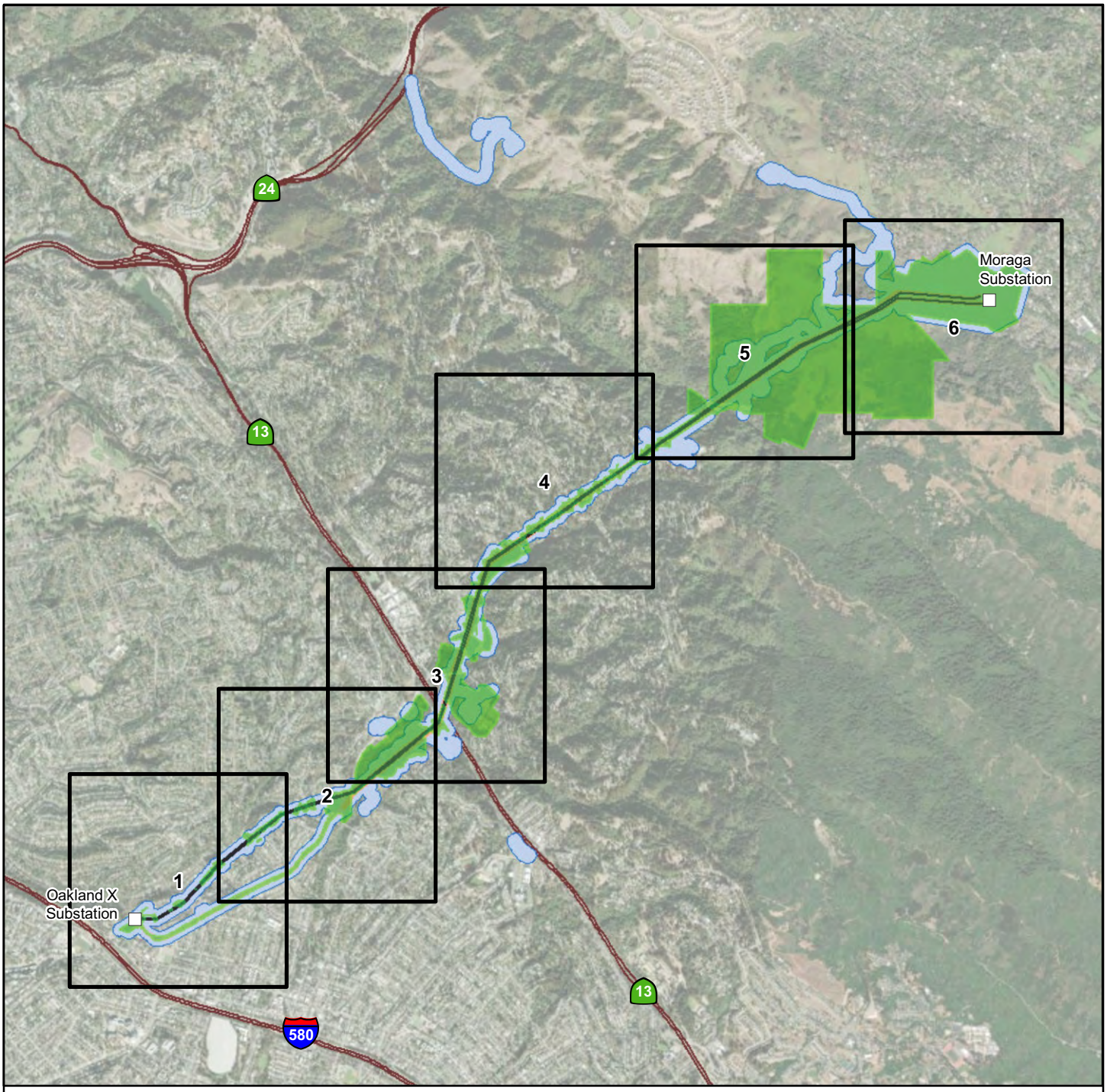
- Substation
- **Overhead Routes**
  - Existing
  - Proposed
- **Underground Routes**
  - Proposed
- Natural Landscape Block
- Natural Areas Small
- **Terrestrial Connectivity - Areas of Conservation Emphasis**
  - 1 Limited Connectivity Opportunity
  - 3 Connections with Implementation Flexibility
  - 5 Irreplaceable and Essential Corridors
- **Essential Connectivity Areas**
  - More Permeable
  - Less Permeable

0 0.5 1 Miles

N

Figure 3.4-10

CDFW Terrestrial Connectivity



Source: PG&E

Detail Map Sheet

Architectural Area of Potential Impacts

Archaeological Area of Potential Impacts

Substation

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

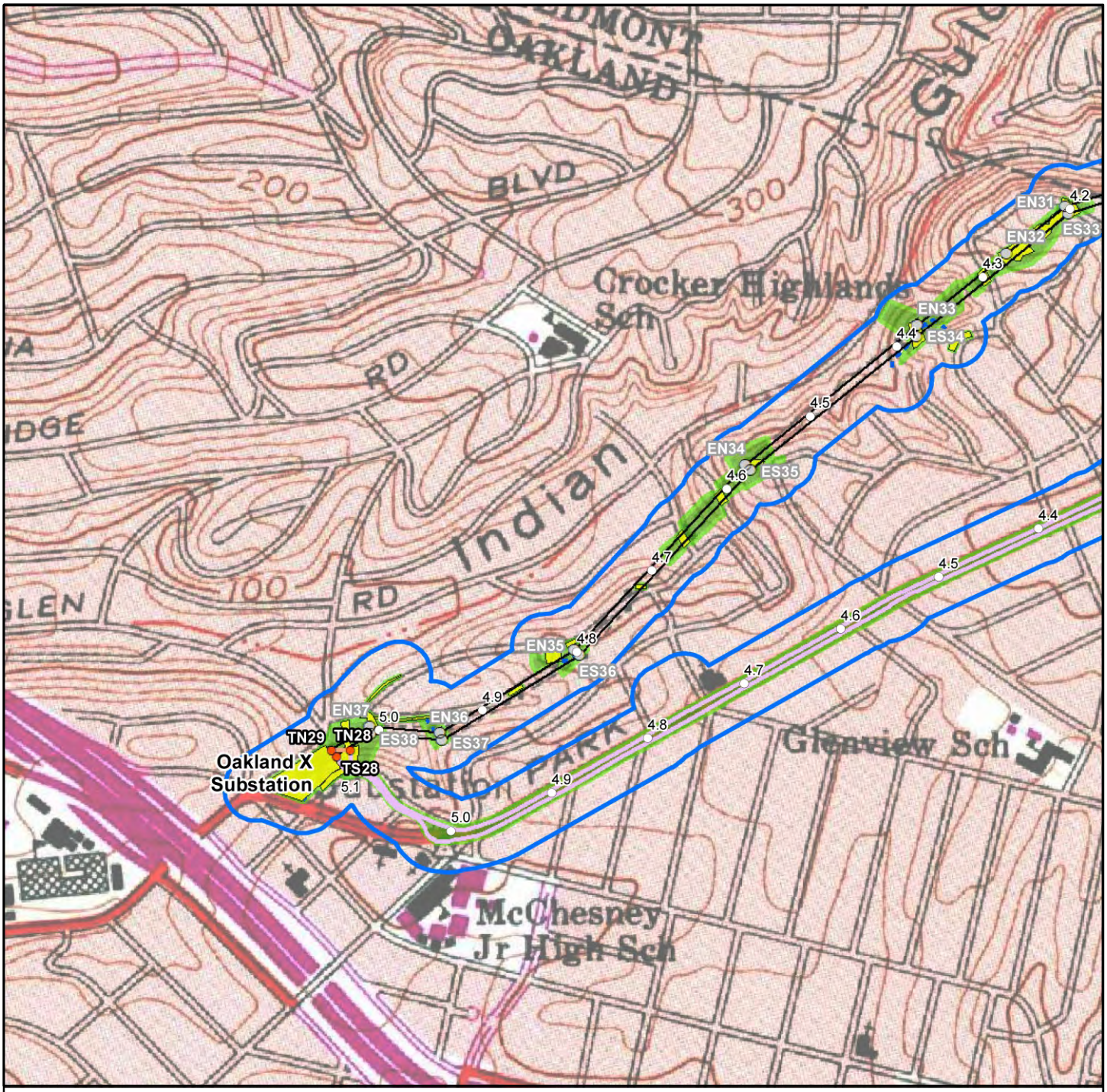
0 0.5 1

Miles

N

Figure 3.5-1

Area of Potential Impacts Overview



Source: PG&E

Architectural Area of Potential Impacts

Archaeological Area of Potential Impacts

Milepost

Project Access

Temporary Work Area

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

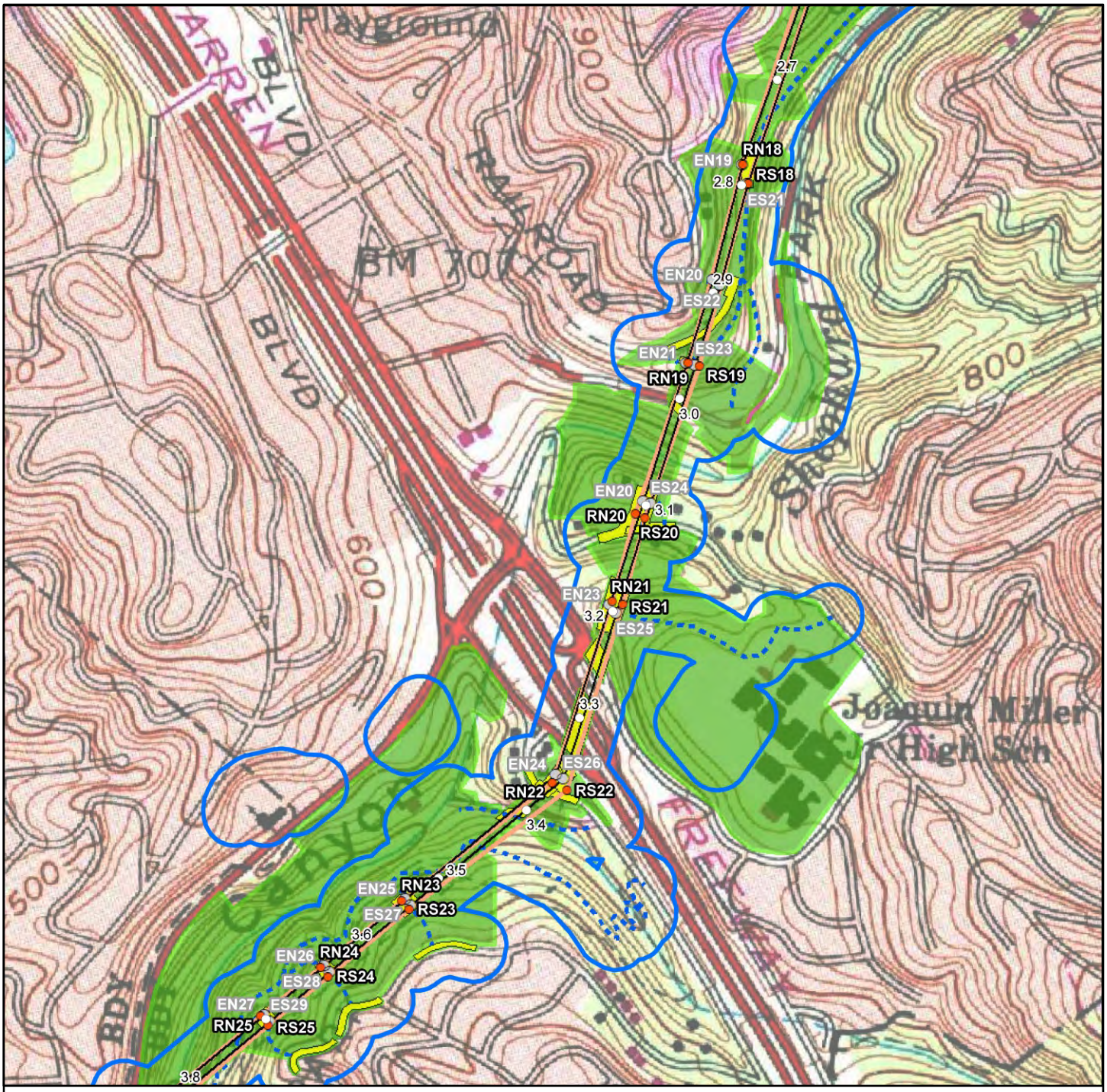
0 750

Feet

N

Figure 3.5-1

Area of Potential Impacts
Map 1 of 6



Source: PG&E

Architectural Area of Potential Impacts

Archaeological Area of Potential Impacts

Milepost

Project Access

Temporary Work Area

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

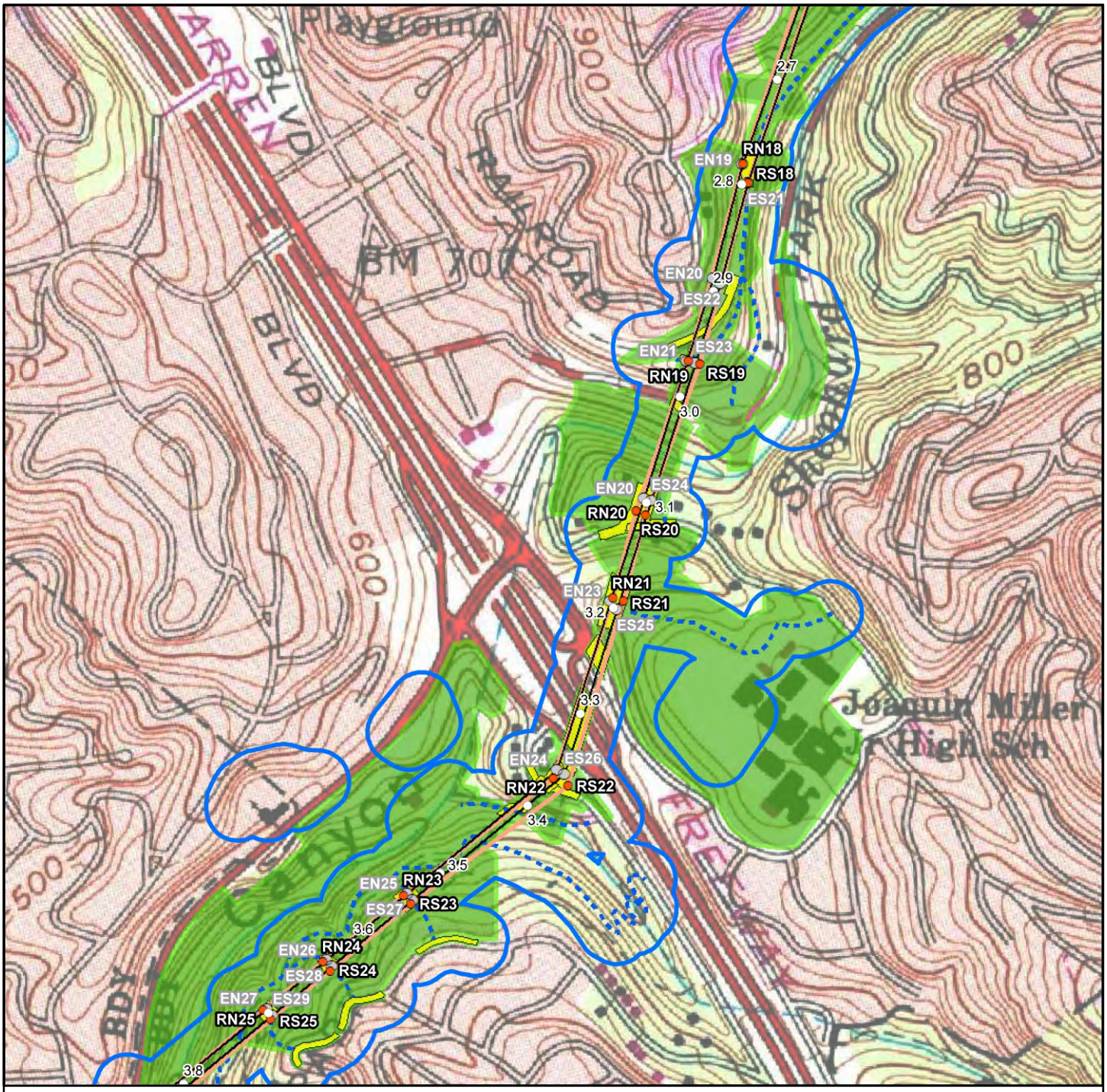
0 750

Feet

N

Figure 3.5-1

Area of Potential Impacts
Map 2 of 6



Source: PG&E

Architectural Area of Potential Impacts

Archaeological Area of Potential Impacts

Milepost

Project Access

Temporary Work Area

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

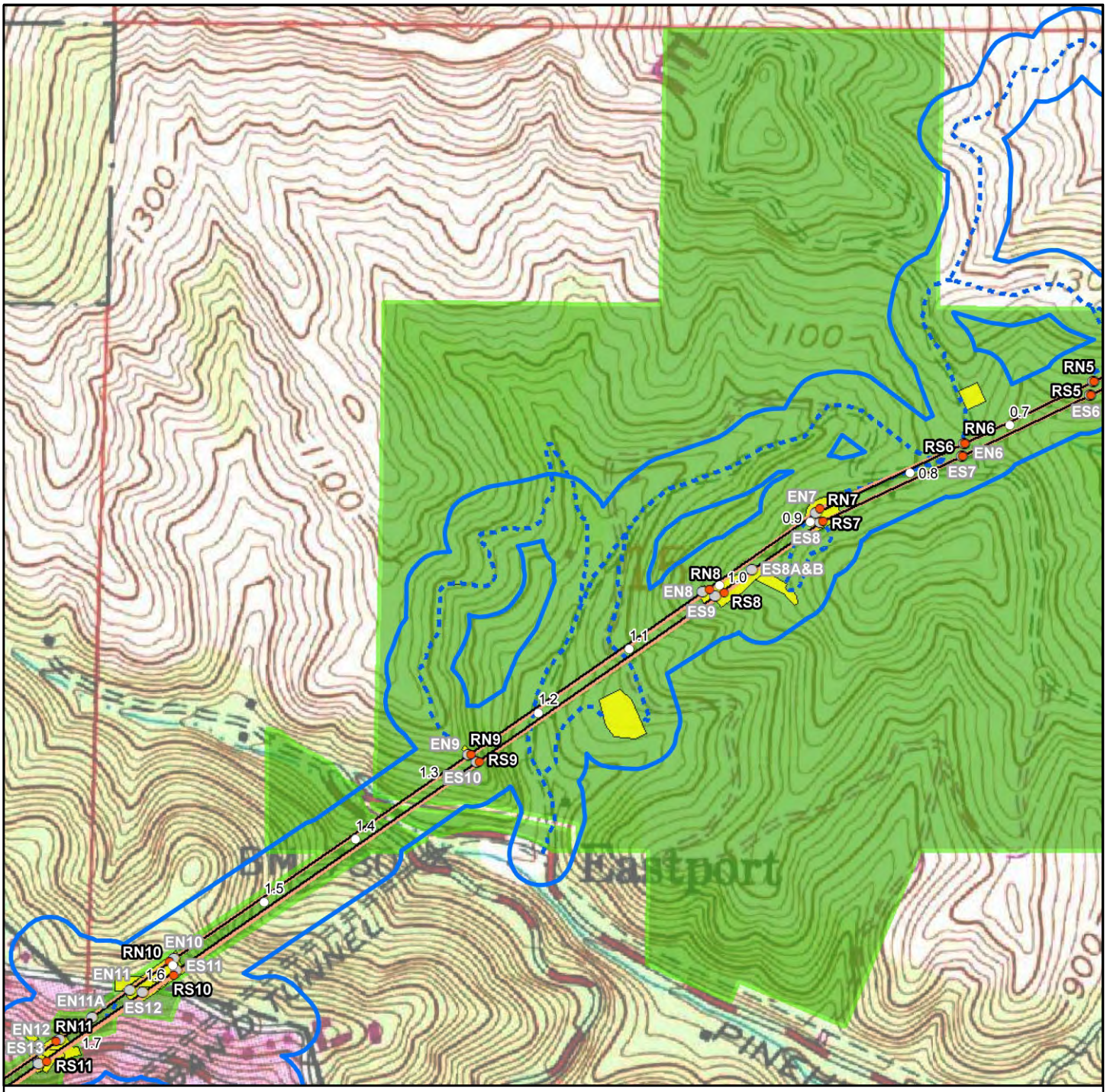
0 750

Feet

N

Figure 3.5-1

Area of Potential Impacts
Map 3 of 6



Source: PG&E

Architectural Area of Potential Impacts

Archaeological Area of Potential Impacts

Milepost

Project Access

Temporary Work Area

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

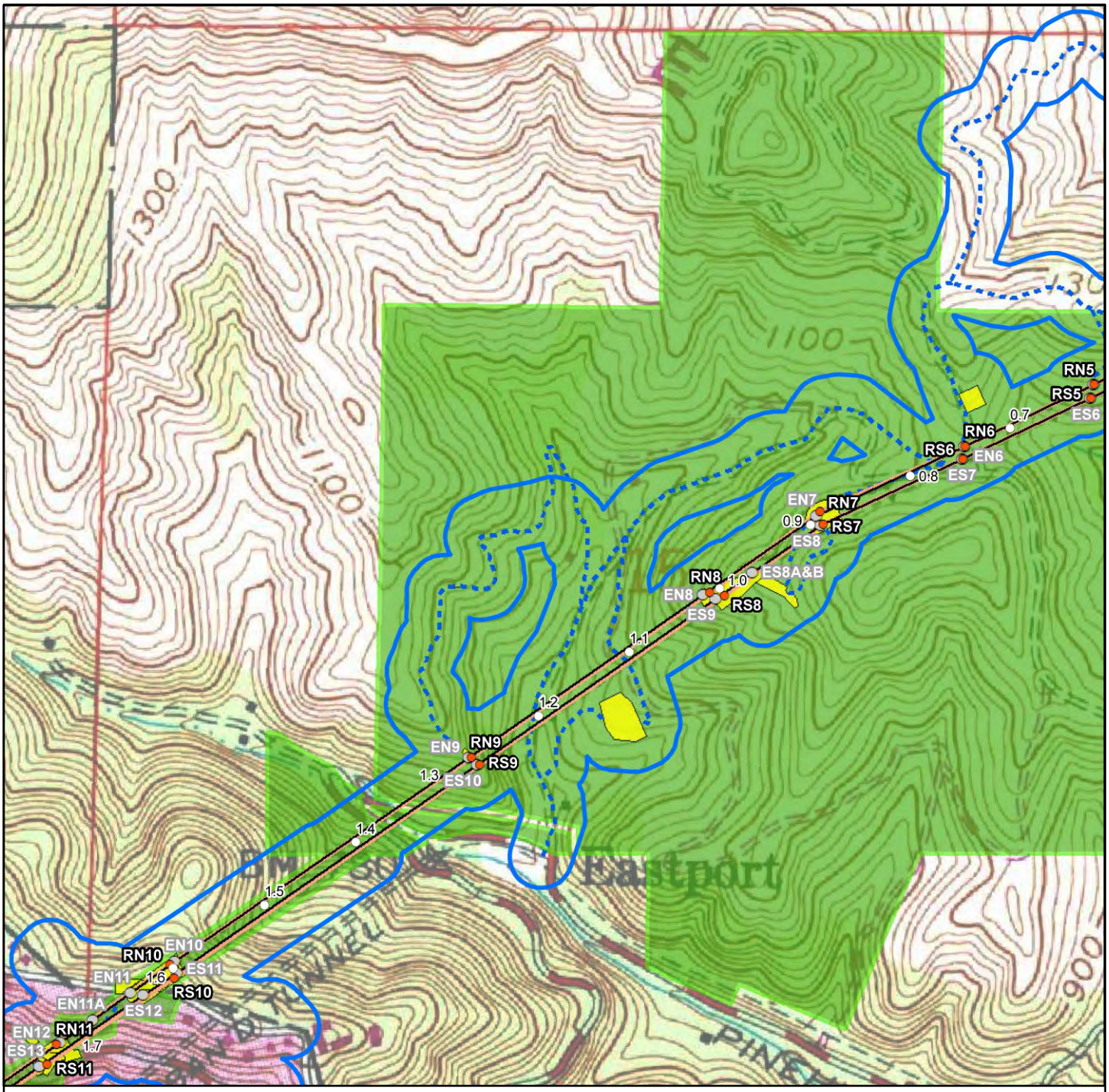
0 750

Feet

N

Figure 3.5-1

Area of Potential Impacts
Map 4 of 6



Source: PG&E

Architectural Area of Potential Impacts

Archaeological Area of Potential Impacts

Milepost

Project Access

Temporary Work Area

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

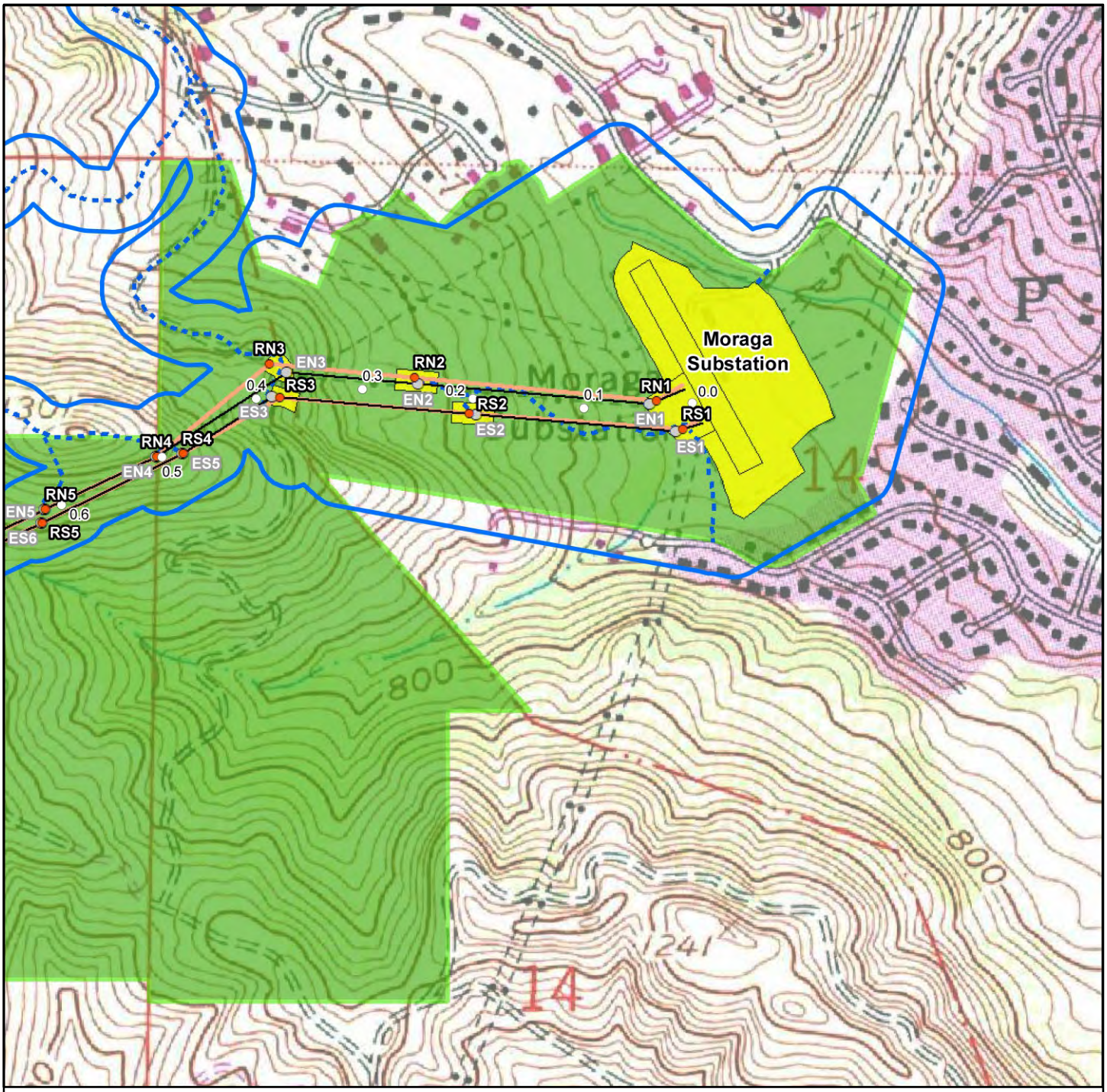
0 750

Feet

N

Figure 3.5-1

Area of Potential Impacts
Map 5 of 6



Source: PG&E

Architectural Area of Potential Impacts

Archaeological Area of Potential Impacts

Milepost

Project Access

Temporary Work Area

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

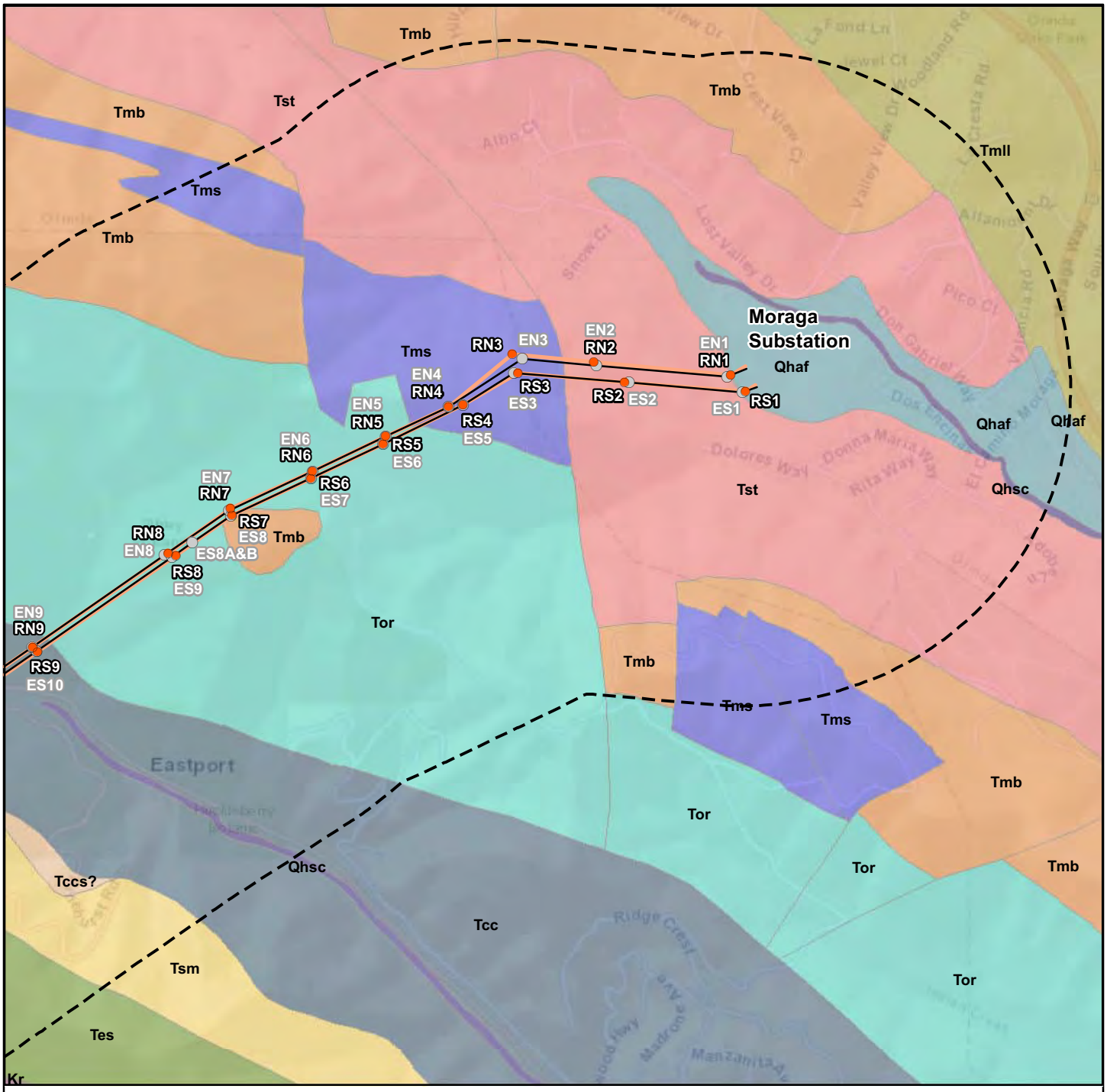
0 750

Feet

N

Figure 3.5-1

Area of Potential Impacts
Map 6 of 6



Source: PG&E

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed
- 0.5-mile Project Buffer

0 0.25 Miles

N

Geologic Units

Quaternary Deposits
- Qhsc - stream channel deposits
- Qhaf - alluvial and fluvial deposits (Holocene)

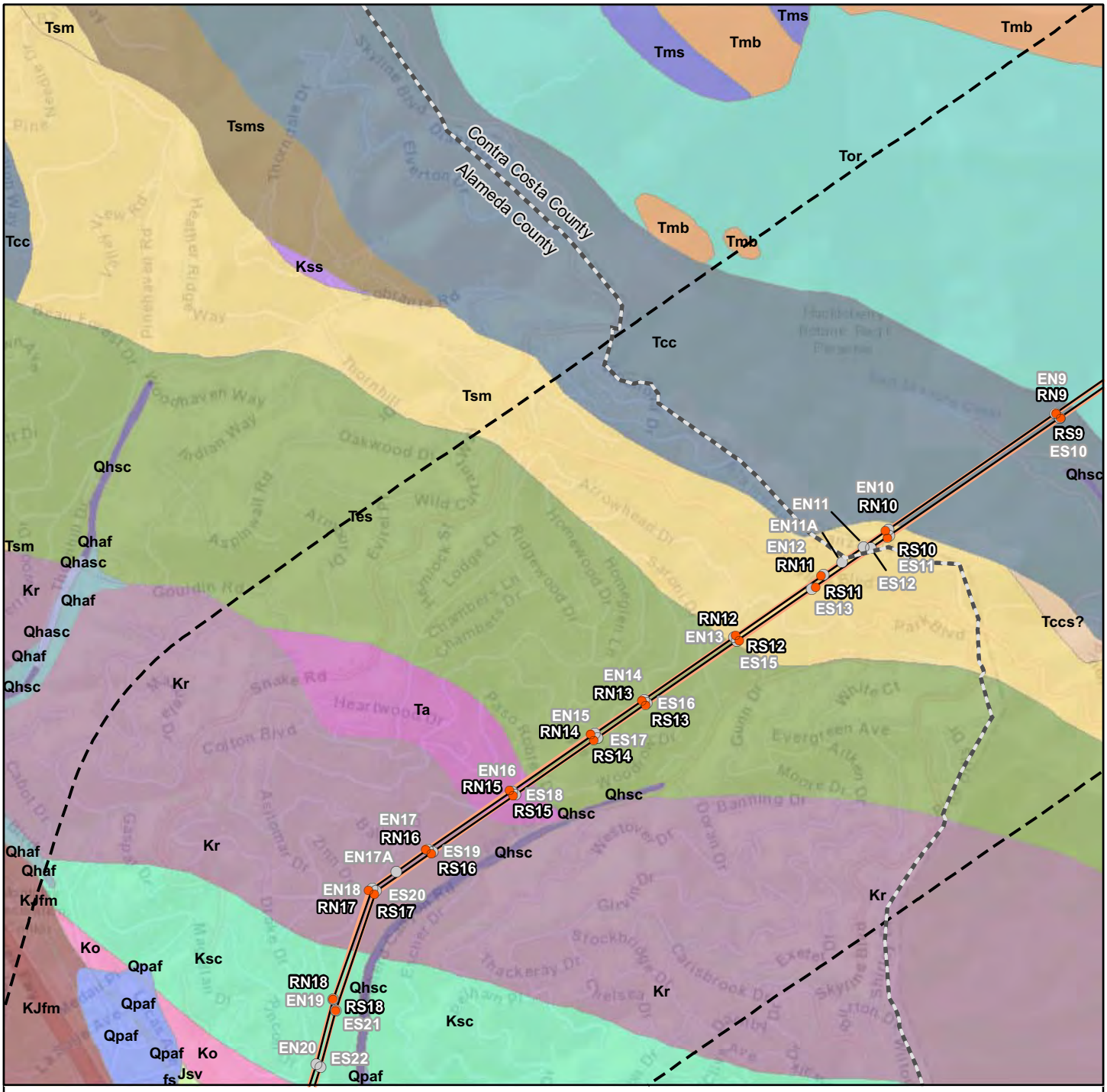
Assemblage I
- Tst - Siesta Formation
- Tms - Interflow Sedimentary Rocks
- Tmb - Moraga Formation
- Tor - Orinda Formation
- Tcc - Claremont chert
- Tccs?
- Tsm - Glauconitic mudstone
- Tes - Mudstone

Assemblage II
- Tmll - Mulholland Formation

Great Valley Sequence
- Kr - Redwood Canyon Formation

Figure 3.7-1

Geologic Map
Map 1 of 4



Source: PG&E

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed
- 0.5-mile Project Buffer

0 0.25 Miles

N

Geologic Units

Quaternary Deposits
- Qhasc - artificial stream channels
- Qhsc - stream channel deposits
- Qhaf - alluvial and fluvial deposits (Holocene)
- Qpaf - alluvial and fluvial deposits (Pleistocene)

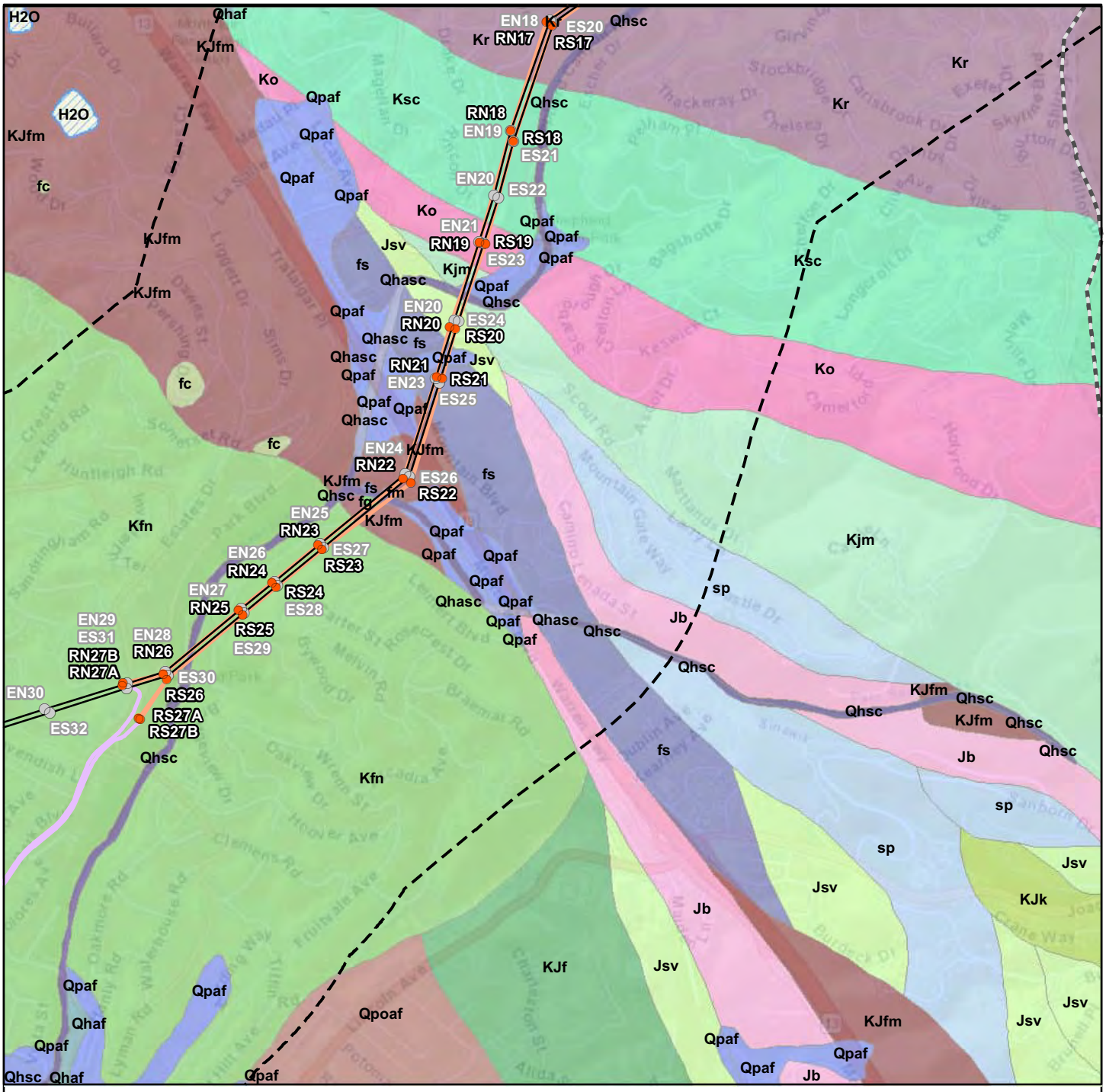
Assemblage I
- Tsms - interbedded sandstone
- Tms - Interflow Sedimentary Rocks
- Tmb - Moraga Formation
- Tor - Orinda Formation
- Tcc - Claremont chert
- Tccs?
- Tsm - Glauconitic mudstone
- Tes - Mudstone
- Ta - Glauconitic sandstone

Great Valley Sequence
- Kss - lithic sandstone
- Kr - Redwood Canyon Formation
- Ksc - Shepard Creek Formation
- Ko - Oakland Conglomerate
- Jsv - Keratophyre

Franciscan Complex
- KJfm - Franciscan Complex
- fs - Graywacke

Figure 3.7-1

Geologic Map
Map 2 of 4



Source: PG&E

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed
- 0.5-mile Project Buffer

0 0.25 Miles

N

Geologic Units

Quaternary Deposits
- Qhasc - artificial stream channels
- Qhsc - stream channel deposits
- Qhaf - alluvial and fluvial deposits (Holocene)
- Qpaf - alluvial and fluvial deposits (Pleistocene)
- Qpoaf - alluvial terrace (Pleistocene)

Great Valley Sequence
- Kr - Redwood Canyon Formation
- Ksc - Shepard Creek Formation
- Ko - Oakland Conglomerate
- Kjm - Joaquin Miller Formation
- KJk - Knoxville Formation
- Jsv - Keratophyre

Coast Range Ophiolite
- Jb - Massive basalt and diabase
- sp - Serpentinite

Franciscan Complex
- Fm - glaucophane schist
- Fg - greenstone
- Fc - chert
- KJf - undivided Franciscan Complex rocks
- Kfn - Sandstone Novato Quarry
- KJfm - Franciscan Complex
- fs - Graywacke

Other
- H20 - Water

Figure 3.7-1

Geologic Map
Map 3 of 4

Source: PG&E

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed
- 0.5-mile Project Buffer

0 0.25 Miles

N

Geologic Units

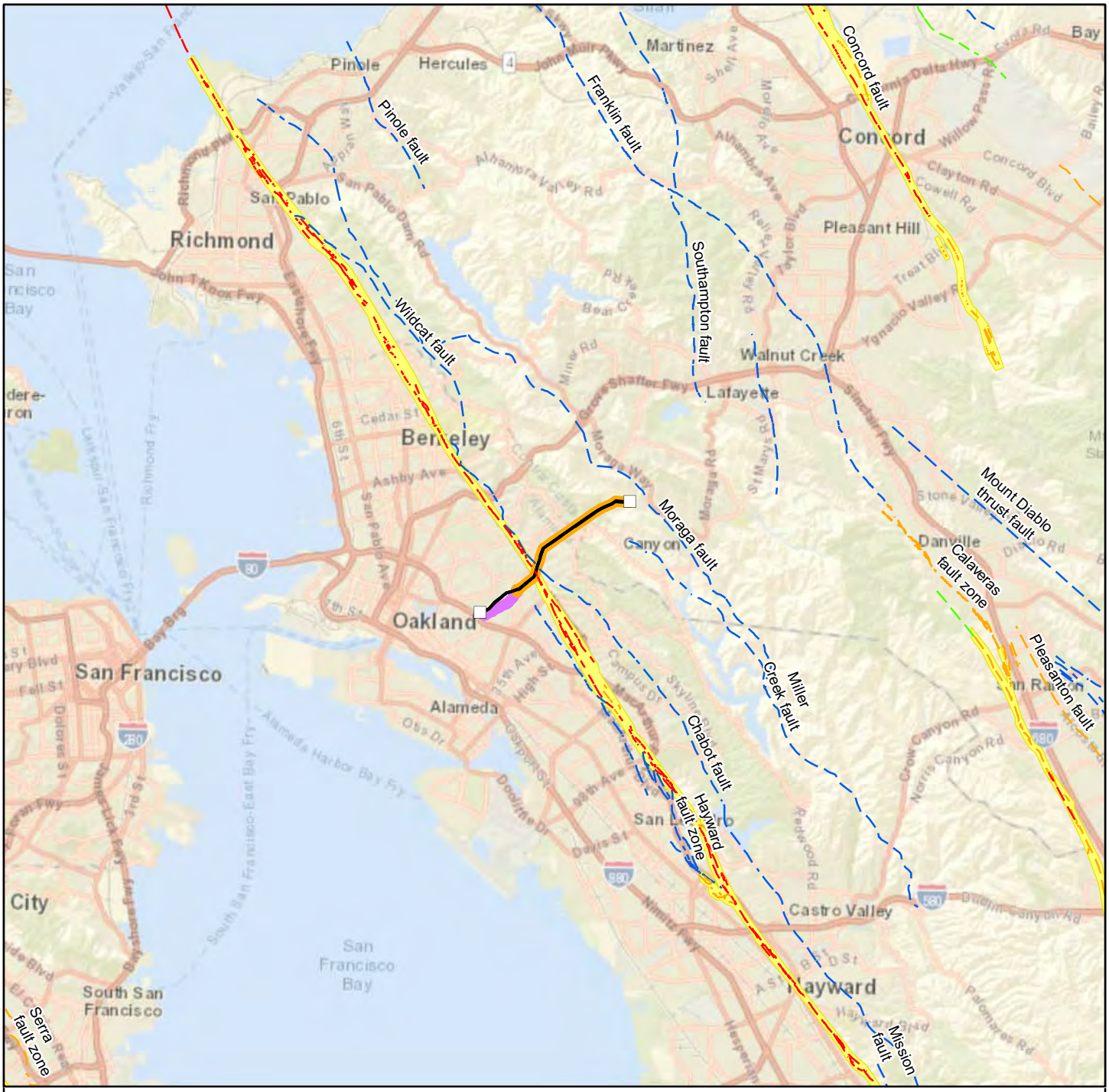
Quaternary Deposits
- Qhasc - artificial stream channels
- Qhsc - stream channel deposits
- af - artificial fill
- Qhaf - alluvial and fluvial deposits (Holocene)
- Qpaf - alluvial and fluvial deposits (Pleistocene)
- Qpoaf - alluvial terrace (Pleistocene)

Franciscan Complex
- Fc - chert
- Kfn - Sandstone Novato Quarry
- KJfm - Franciscan Complex

Other
- H20 - Water

Figure 3.7-1

Geologic Map
Map 4 of 4



Source: PG&E

- Substation
- Alquist-Priolo Fault Hazard Zone

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed

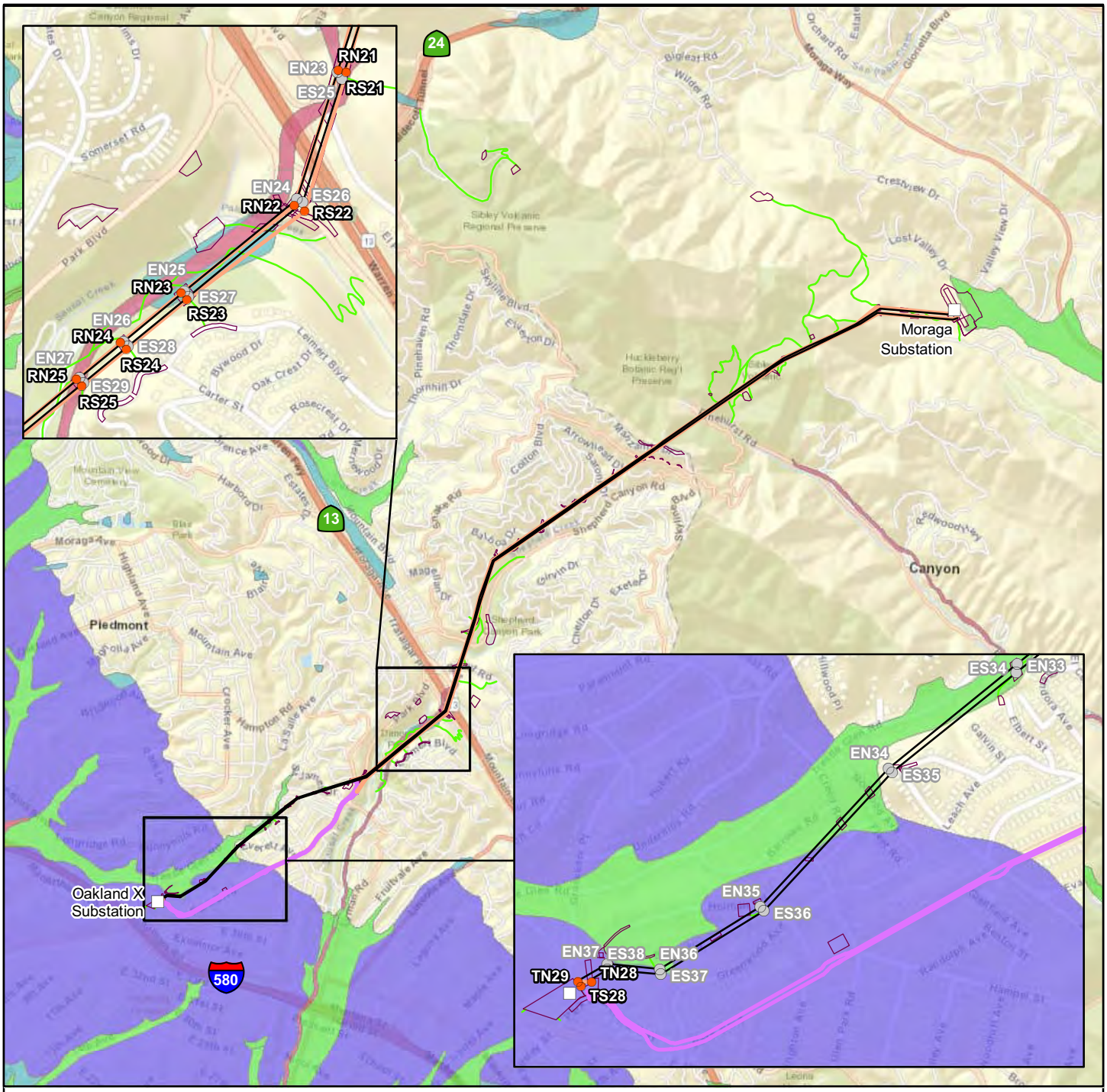
Fault Age
- Historic (<150 years)
- Latest Quaternary (<130,000 years)
- Late Quaternary (<750,000 years)
- Undifferentiated Quaternary (<1,600,000 years)

0 4 8
Miles

N

Figure 3.7-2

Fault Map



Source: PG&E

- Substation
- Project Access
- Temporary Work Area

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Liquefaction Potential

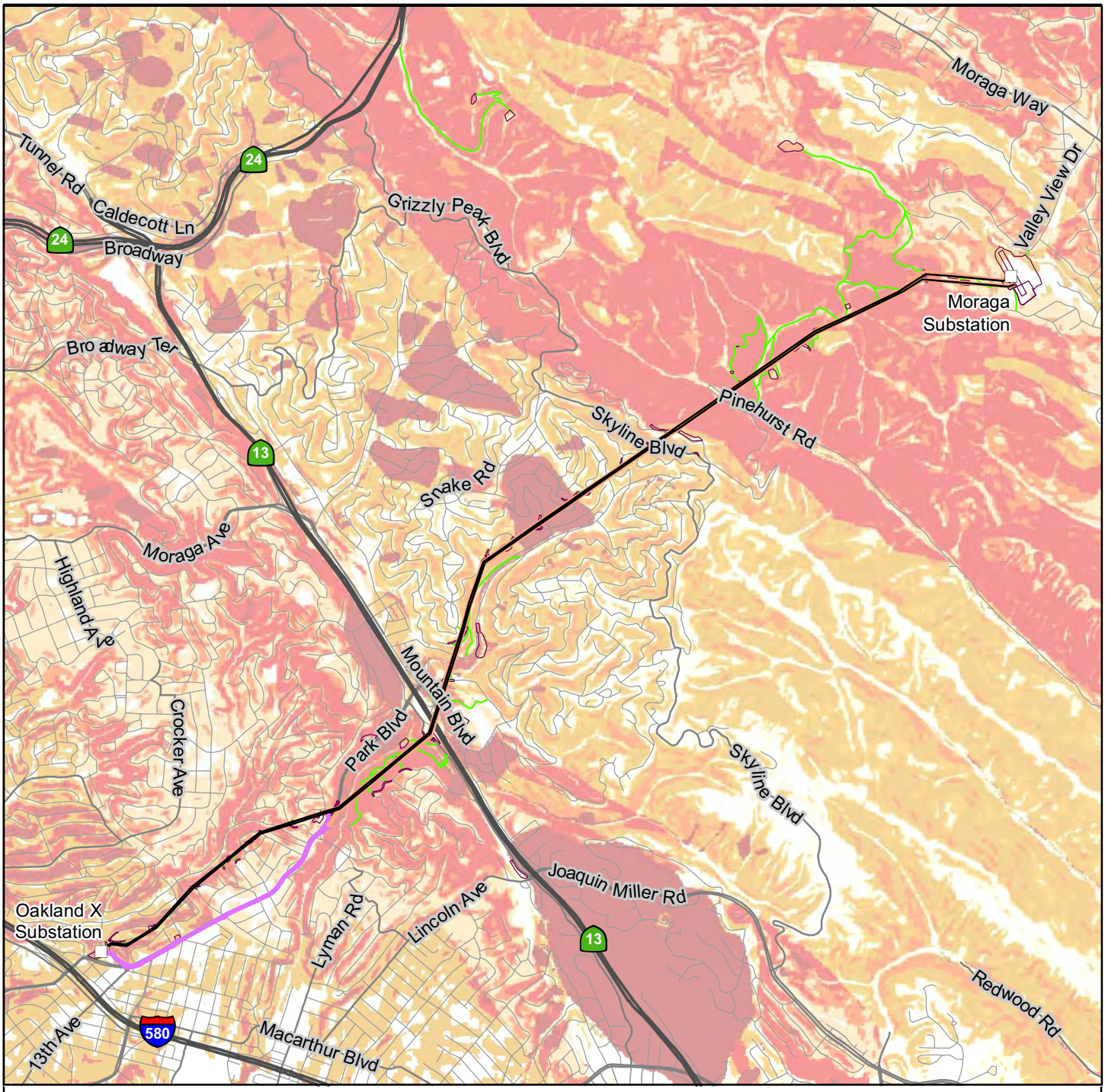
- Very High
- Moderate
- Low
- Very Low

0 0.5 1
Miles

N

Figure 3.7-3

Liquefaction Hazard Map



Source: PG&E

- Substation
- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Landslide Susceptiblity Classes

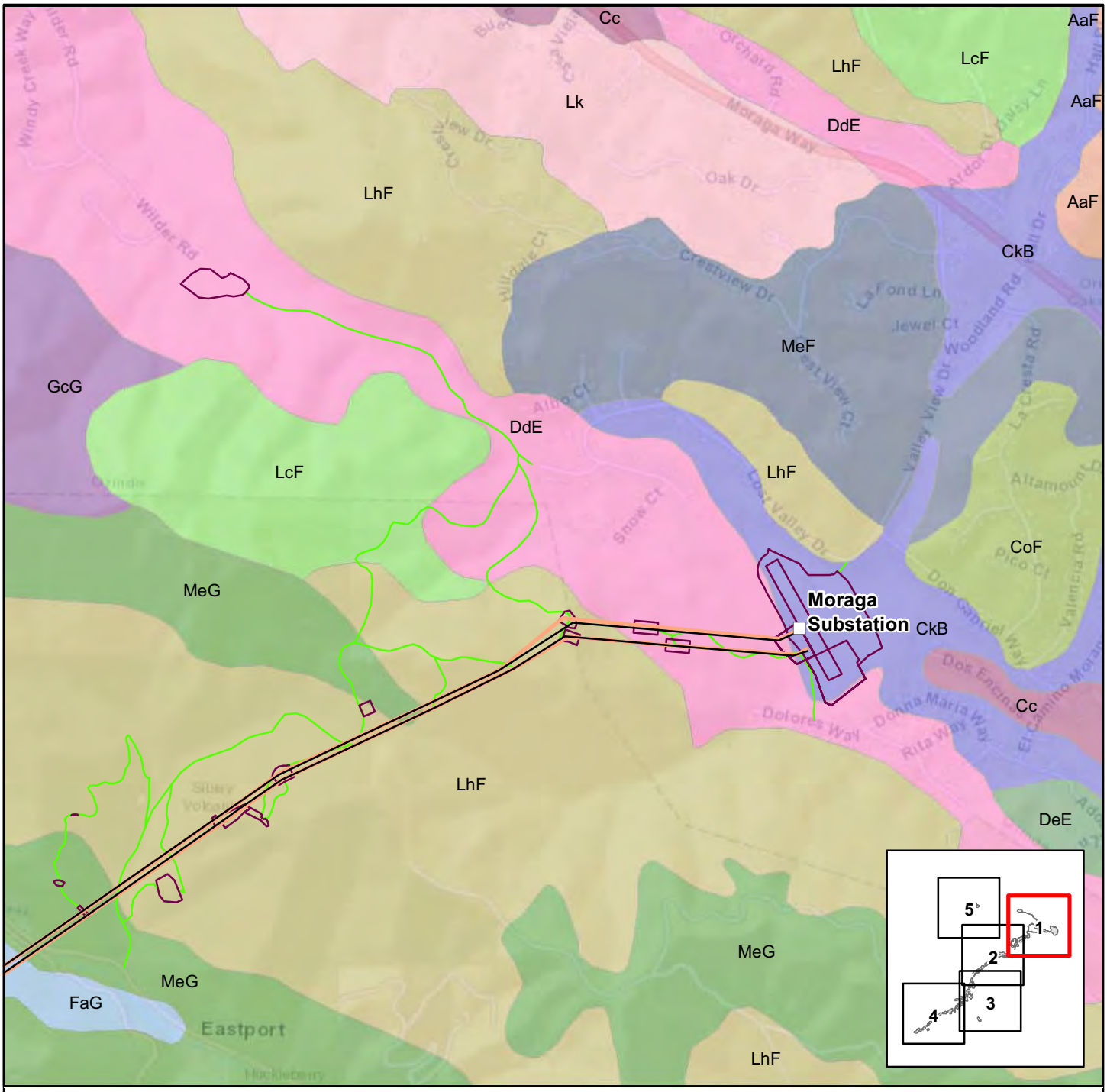
- 0
- III
- V
- VI
- VII
- VIII
- IX
- X

0 0.5 1 Miles

N

Figure 3.7-4

Landslide Susceptibility Map



Source: PG&E

- Temporary Work Area
- Project Access

Overhead Routes

- Existing
- Proposed

Soils

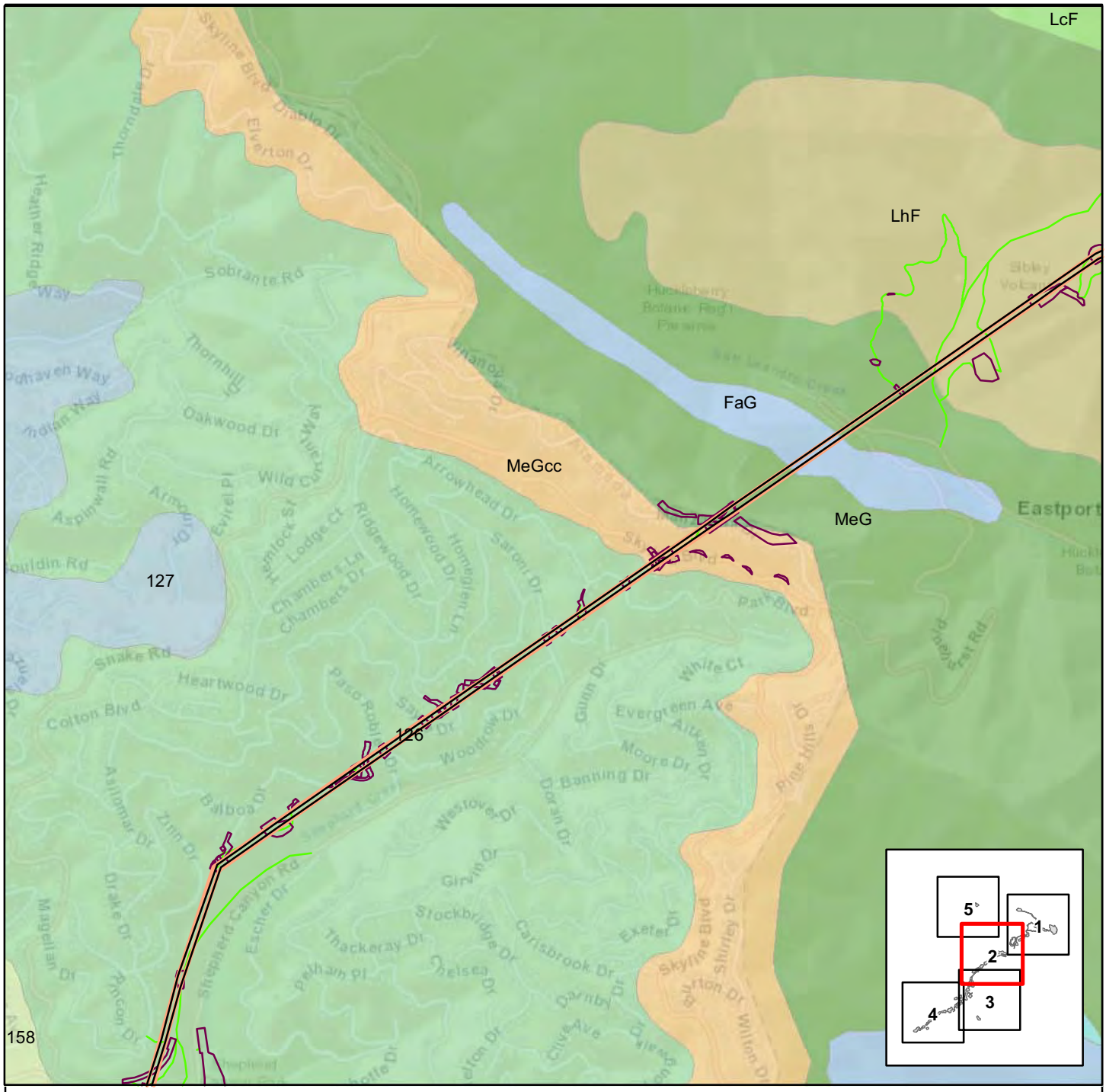
- AaF: Alo clay, 30 to 50 percent slopes, MLRA 15
- Cc: Clear Lake clay, 0 to 15 percent slopes, MLRA 15
- CkB: Cropley clay, 2 to 5 percent slopes
- CoF: Cut and fill land-Millsholm complex, 30 to 50 percent slopes
- DdE: Diablo clay, 15 to 30 percent slopes, MLRA 15
- DeE: Dibble silty clay loam, 15 to 30 percent slopes
- FaG: Felton loam, 50 to 75 percent slopes
- GcG: Gilroy clay loam, 50 to 75 percent slopes, MLRA 15
- LcF: Lodo clay loam, 30 to 50 percent slopes, very rocky, MLRA 15
- LhF: Los Osos clay loam, 30 to 50 percent slopes
- Lk: Los Osos-Los Gatos complex
- MeF: Millsholm loam, 15 to 50 percent slopes, moist, MLRA 15
- MeG: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15

0 0.25 Miles

N

Figure 3.7-5

Soil Map
Map 1 of 5



Source: PG&E

- Temporary Work Area
- Project Access

Overhead Routes

- Existing
- Proposed

Soils

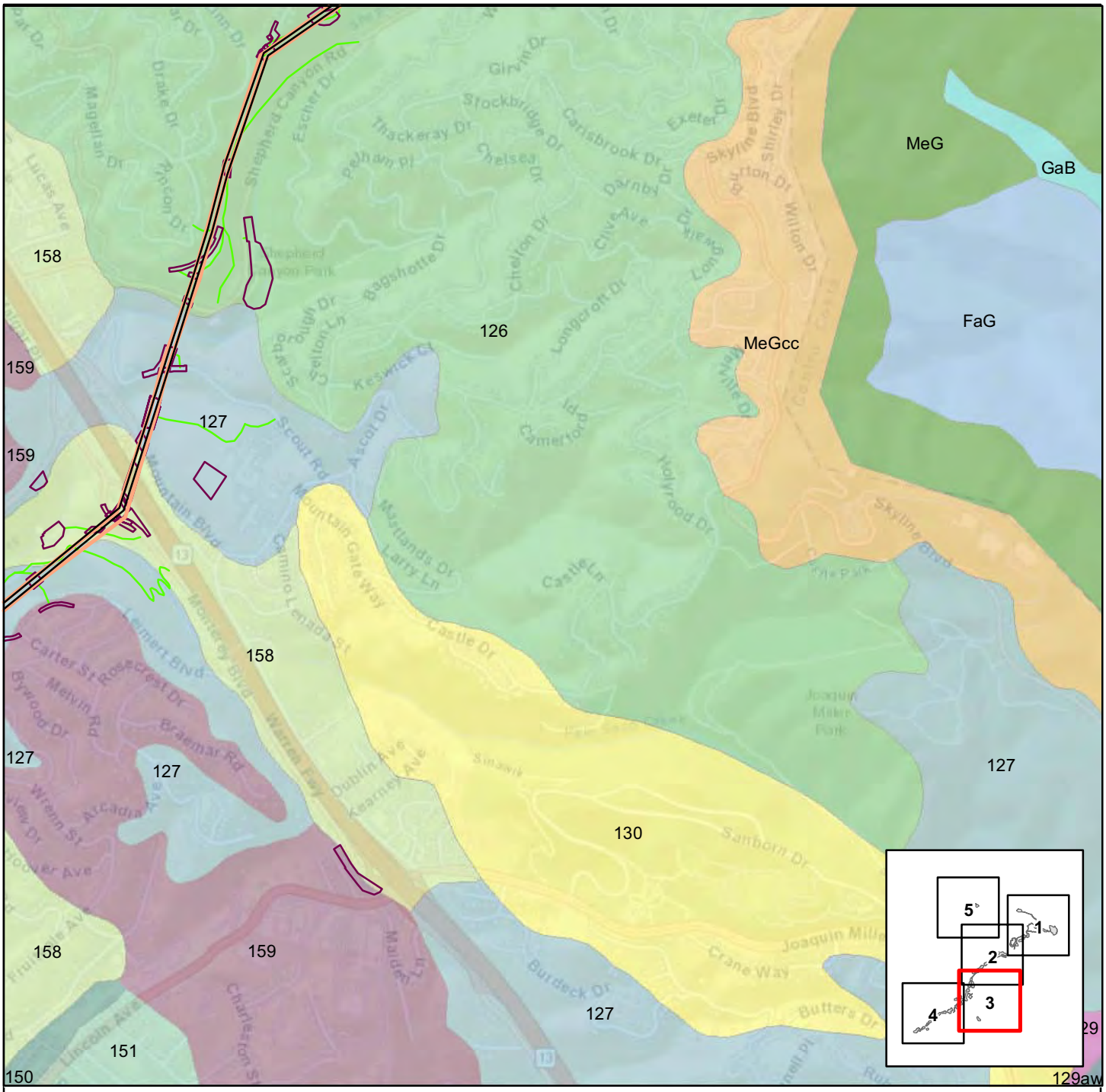
- 126: Maymen loam, 30 to 75 percent slopes
- 127: Maymen-Los Gatos complex, 30 to 75 percent slopes, low precipitation, MLRA 15
- 158: Xerorthents-Los Osos complex, 30 to 50 percent slopes
- FaG: Felton loam, 50 to 75 percent slopes
- GaB: Garretson loam, 2 to 5 percent slopes
- LcF: Lodo clay loam, 30 to 50 percent slopes, very rocky, MLRA 15
- LhF: Los Osos clay loam, 30 to 50 percent slopes
- MeG: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15
- MeGcc: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15

0 0.25 Miles

N

Figure 3.7-5

Soil Map
Map 2 of 5



Source: PG&E

- Temporary Work Area
- Project Access

Overhead Routes

- Existing
- Proposed

Soils

- 126: Maymen loam, 30 to 75 percent slopes
- 127: Maymen-Los Gatos complex, 30 to 75 percent slopes, low precipitation, MLRA 15
- 129: Millsholm silt loam, 50 to 75 percent slopes
- 129aw: Millsholm silt loam, 50 to 75 percent slopes
- 130: Montara-Rock outcrop complex, 30 to 75 percent slopes
- 150: Urban land-Tierra complex, 2 to 5 percent slopes
- 151: Urban land-Tierra complex, 5 to 15 percent slopes
- 158: Xerorthents-Los Osos complex, 30 to 50 percent slopes
- 159: Xerorthents-Millsholm complex, 30 to 50 percent slopes
- FaG: Felton loam, 50 to 75 percent slopes
- GaB: Garretson loam, 2 to 5 percent slopes
- MeG: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15
- MeGcc: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15

0 0.25 Miles

N

Figure 3.7-5

Soil Map
Map 3 of 5

Source: PG&E

- Temporary Work Area
- Project Access

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Soils

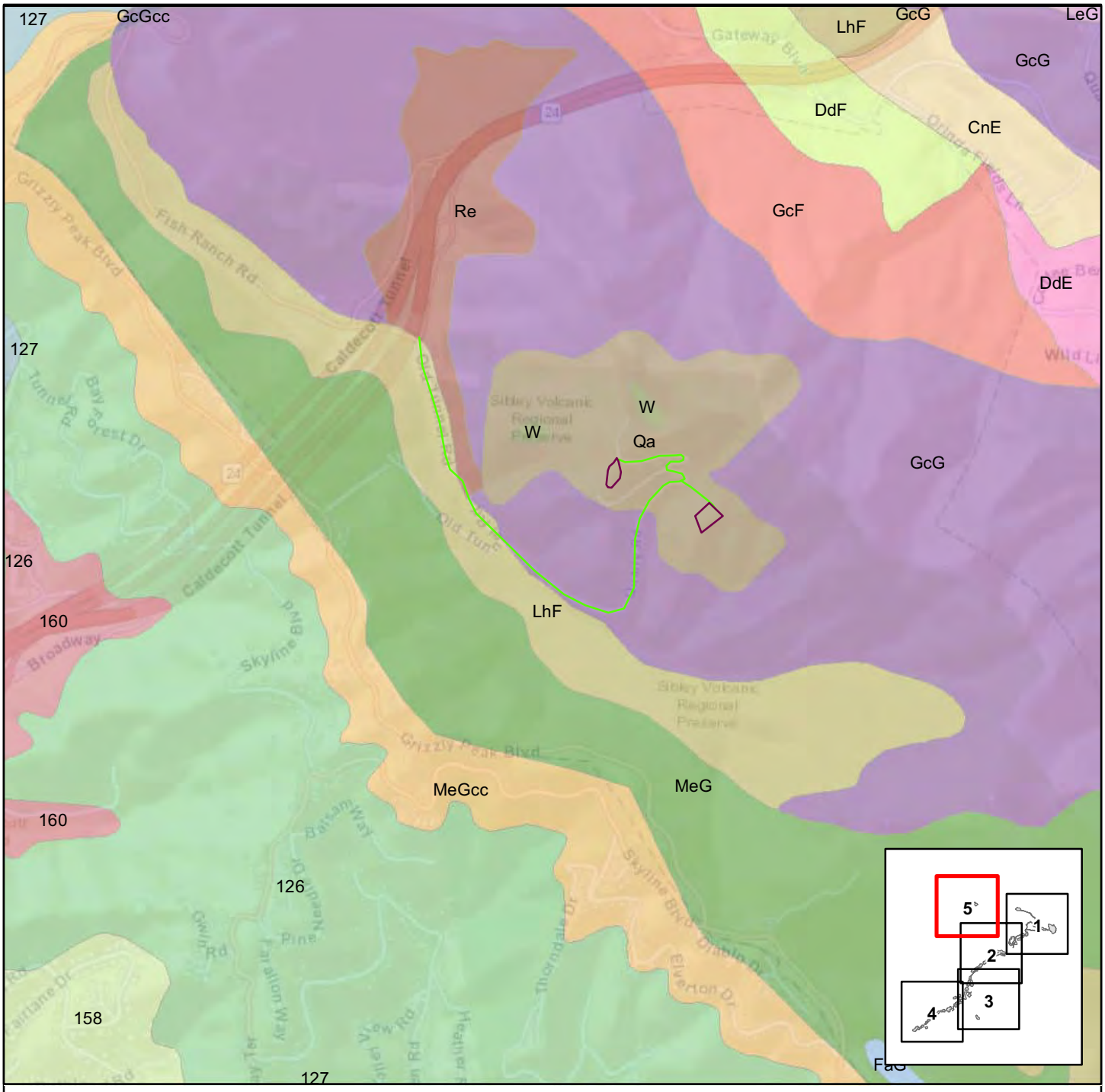
- 126: Maymen loam, 30 to 75 percent slopes
- 127: Maymen-Los Gatos complex, 30 to 75 percent slopes, low precipitation, MLRA 15
- 149: Urban land-Danville complex
- 150: Urban land-Tierra complex, 2 to 5 percent slopes
- 151: Urban land-Tierra complex, 5 to 15 percent slopes
- 152: Urban land-Tierra complex, 15 to 30 percent slopes
- 158: Xerorthents-Los Osos complex, 30 to 50 percent slopes
- 159: Xerorthents-Millsholm complex, 30 to 50 percent slopes
- 162: Water

0 0.25 Miles

N

Figure 3.7-5

Soil Map
Map 4 of 5



Source: PG&E

- Temporary Work Area
- Project Access

Soils

- 126: Maymen loam, 30 to 75 percent slopes
- 127: Maymen-Los Gatos complex, 30 to 75 percent slopes, low precipitation, MLRA 15
- 158: Xerorthents-Los Osos complex, 30 to 50 percent slopes
- 160: Xerorthents-Millsholm complex, 50 to 75 percent slopes
- CnE: Cut and fill land-Los Osos complex, 9 to 30 percent slopes
- DdE: Diablo clay, 15 to 30 percent slopes, MLRA 15
- DdF: Diablo clay, 30 to 50 percent slopes, MLRA 15
- FaG: Felton loam, 50 to 75 percent slopes
- GcF: Gilroy clay loam, 30 to 50 percent slopes, MLRA 15
- GcG: Gilroy clay loam, 50 to 75 percent slopes, MLRA 15
- GcGcc: Gilroy clay loam, 50 to 75 percent slopes, MLRA 15
- LeG: Los Gatos loam, 50 to 75 percent slopes
- LhF: Los Osos clay loam, 30 to 50 percent slopes
- MeG: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15
- MeGcc: Millsholm loam, 20 to 60 percent slopes, moist, MLRA 15
- Qa: Quarry
- Re: Rock outcrop-Xerorthents association
- W: Water

0 0.25 Miles

N

Figure 3.7-5

Soil Map
Map 5 of 5

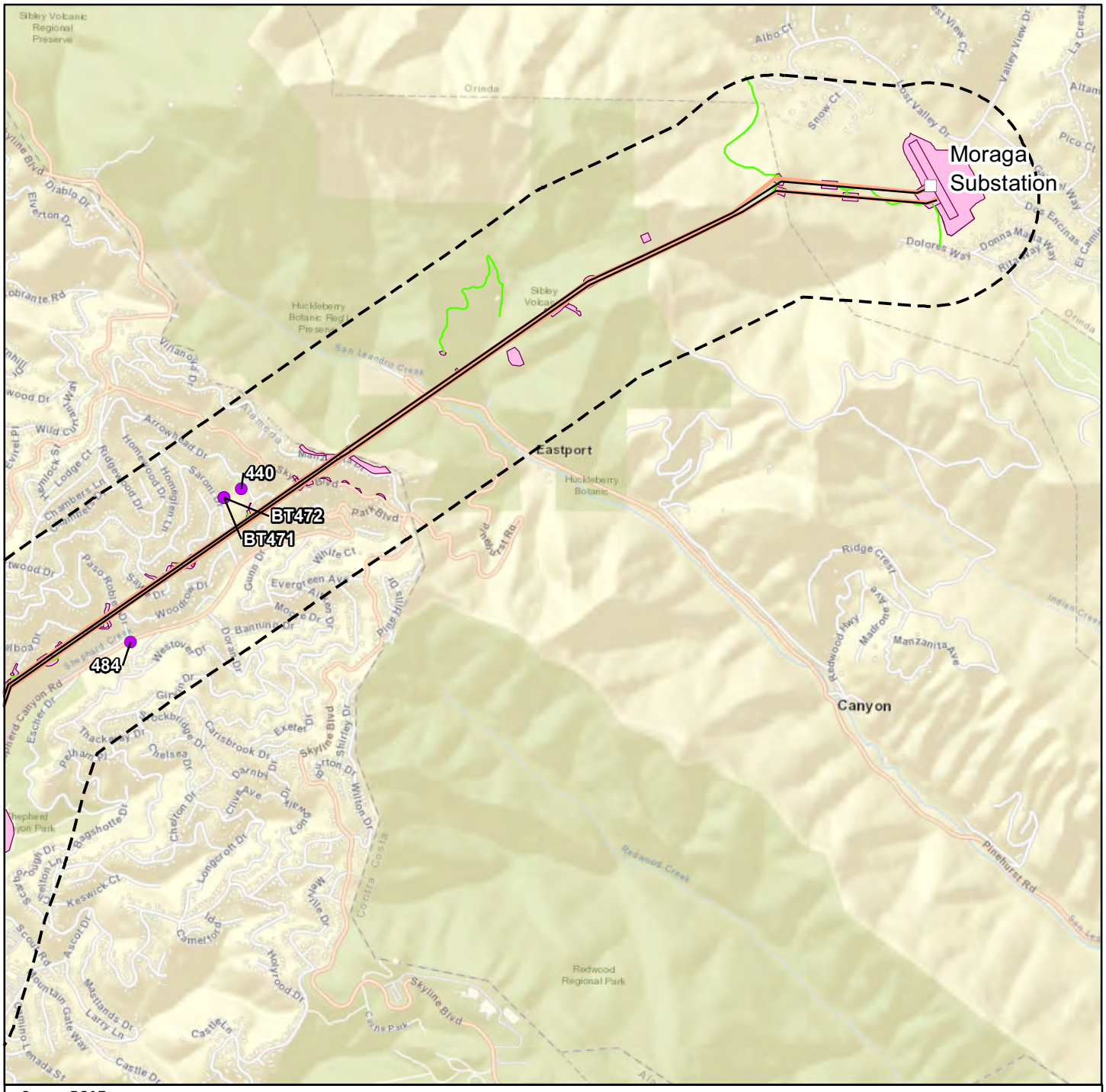
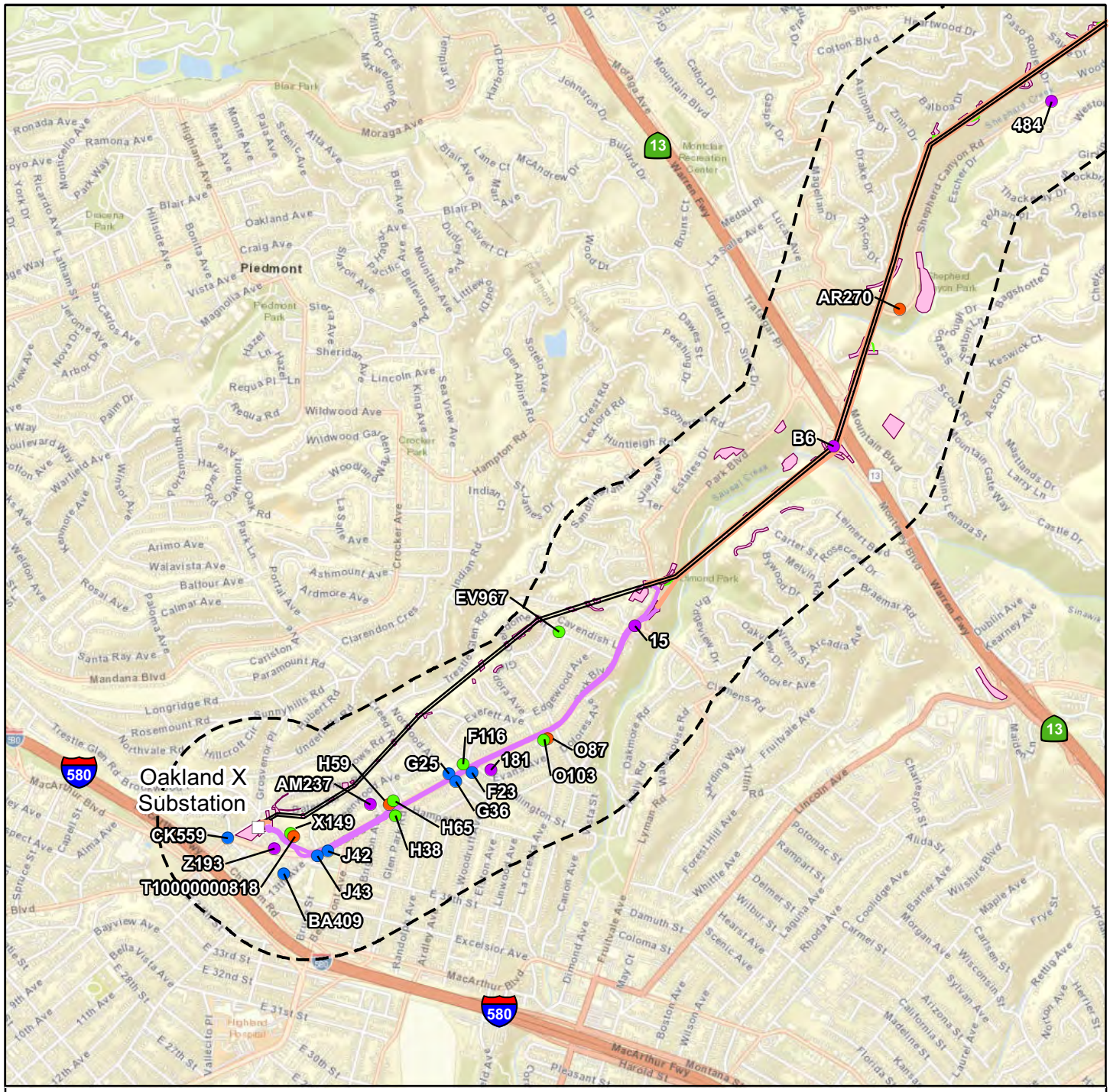


Figure 3.9-1

Hazardous Materials Sites Located within 500 Feet of Project Evacuation Areas
Map 1 of 2



Source: PG&E

0.25-mile Project Buffer
Substation
Existing Overhead Route
Proposed Overhead Route
Proposed Underground Route
Project Access (Improvement Only)
Temporary Work Area

Hazardous Materials Sites

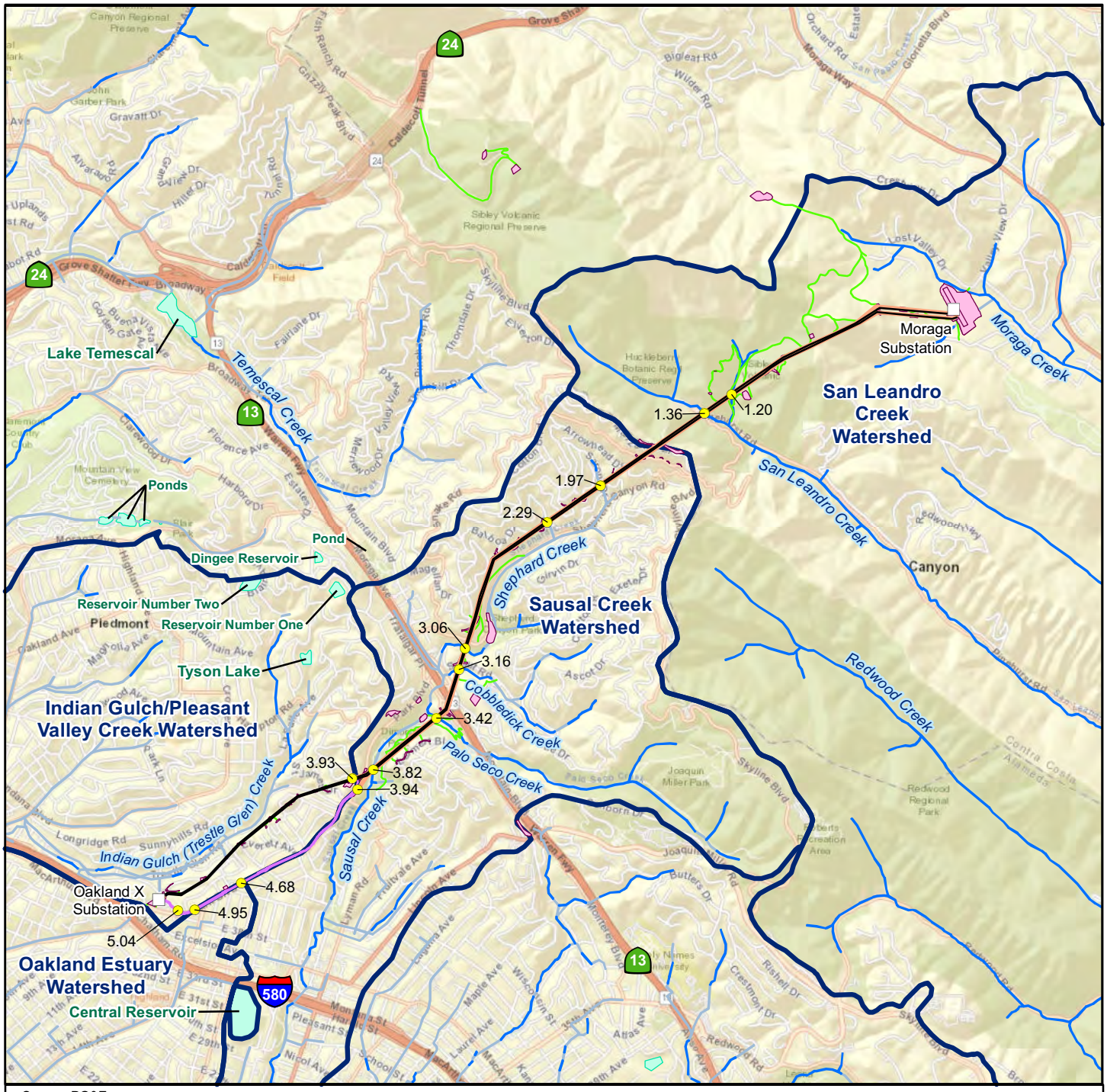
Closed LUST Site
Historical Auto Service
Historical Dry Cleaner
Spill Location

0 0.25 0.5
Miles

N

Figure 3.9-1

Hazardous Materials Sites Located within 500 Feet of Project Evacuation Areas
Map 2 of 2



Source: PG&E

- Substation
- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

- Milepost*
- Watershed Boundary
- Creek
- Underground Culvert or Storm Drain
- Reservoir/Lake/Pond

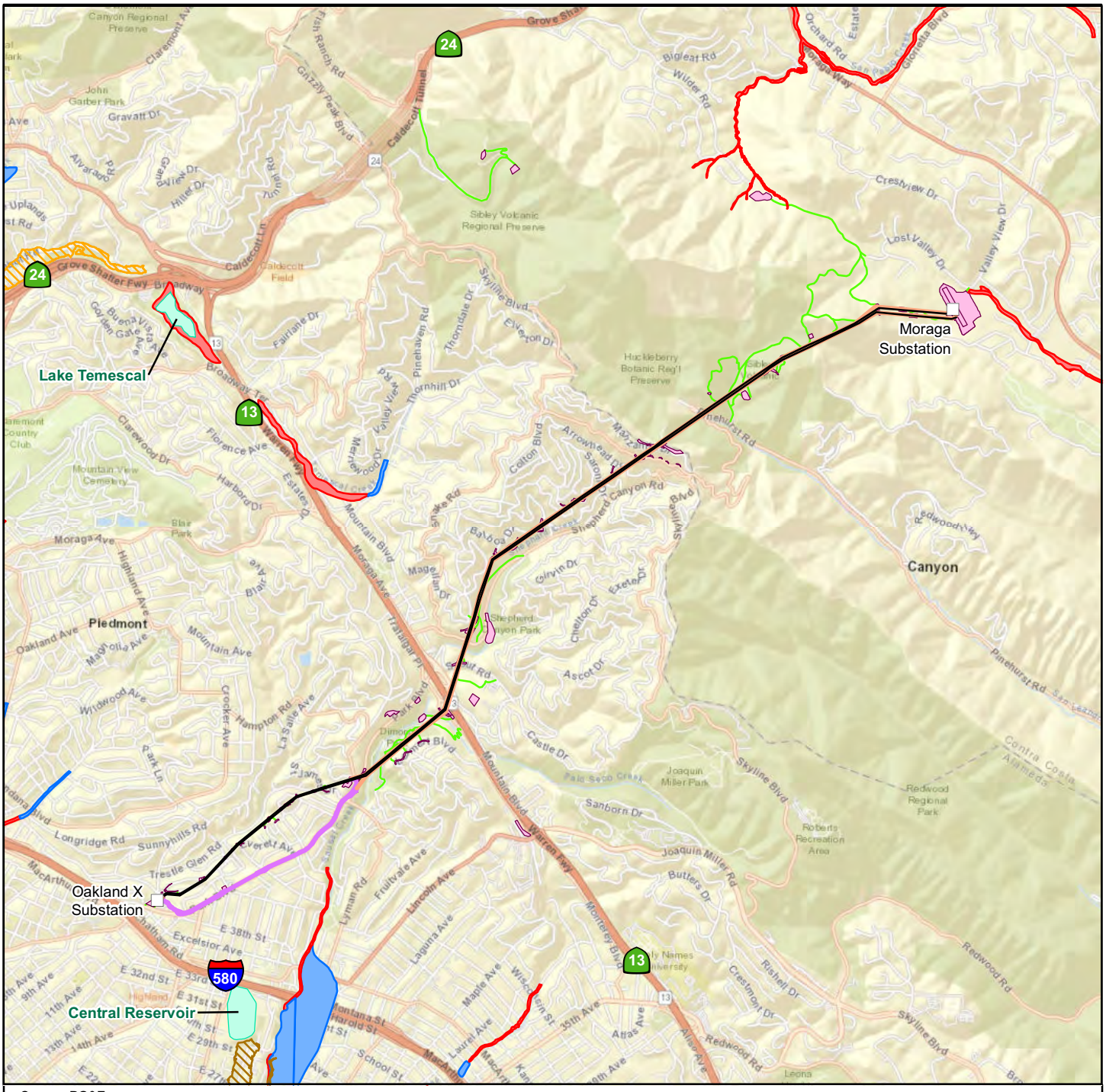
*Milepost numbering begins at Moraga Substation and ends at Oakland X Substation

0 0.5 1
Miles

N

Figure 3.10-1

Surface Water and Watersheds



Source: PG&E

- Substation
- Project Access
- Temporary Work Area

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed

FEMA Flood Zones
- Areas of 1% Annual Chance Flood
- Areas of 0.2% Annual Chance Flood

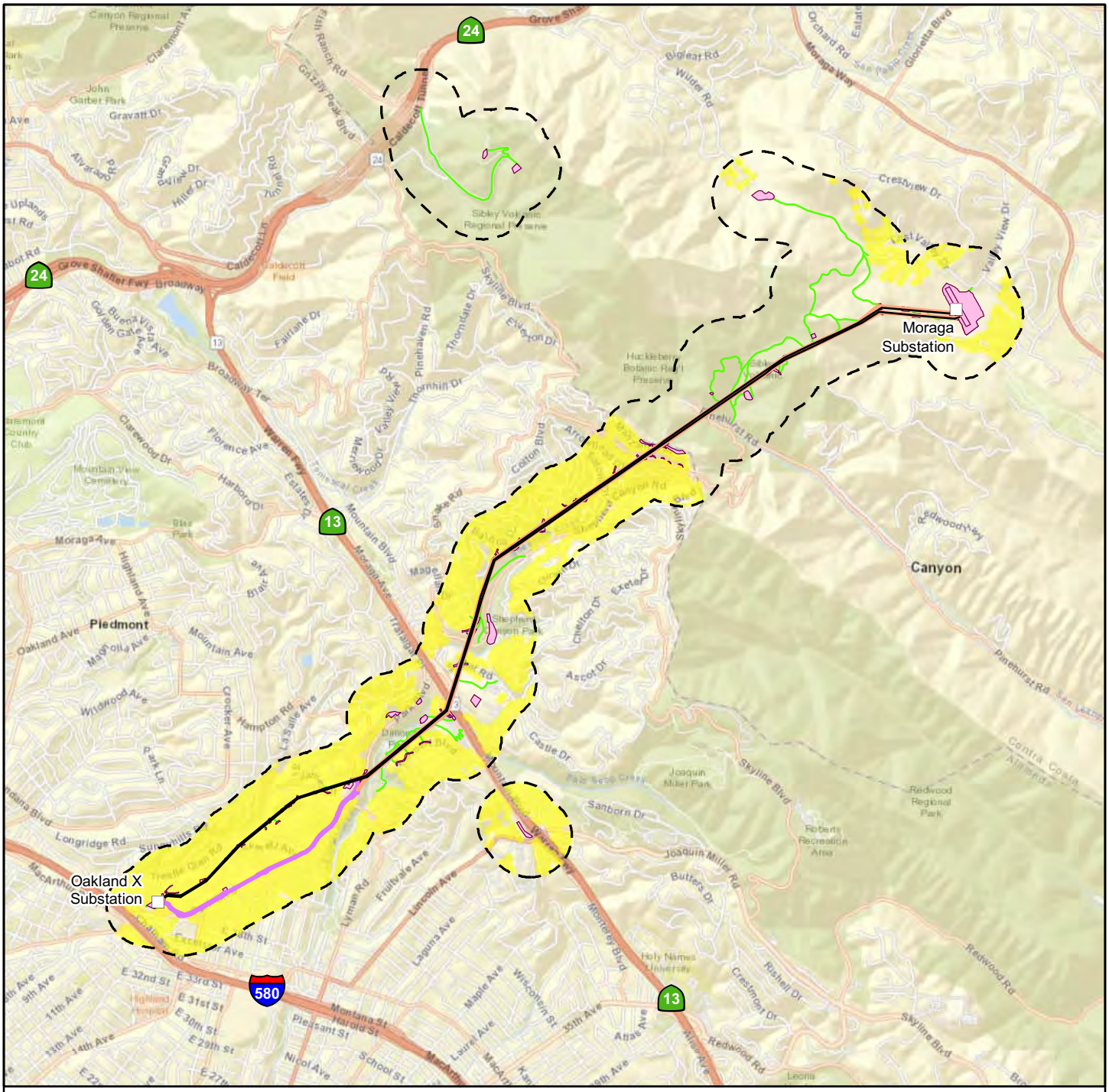
Potential Inundation Area Due to Dam/Reservoir Failure
- Lake Temescal
- Central Reservoir

0 0.5 1
Miles

N

Figure 3.10-2

Potential Flood Zones and Inundation Areas



Source: PG&E

Legend

- 1000-foot Project Buffer
- Substation
- Project Access
- Temporary Work Area
- Residential Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

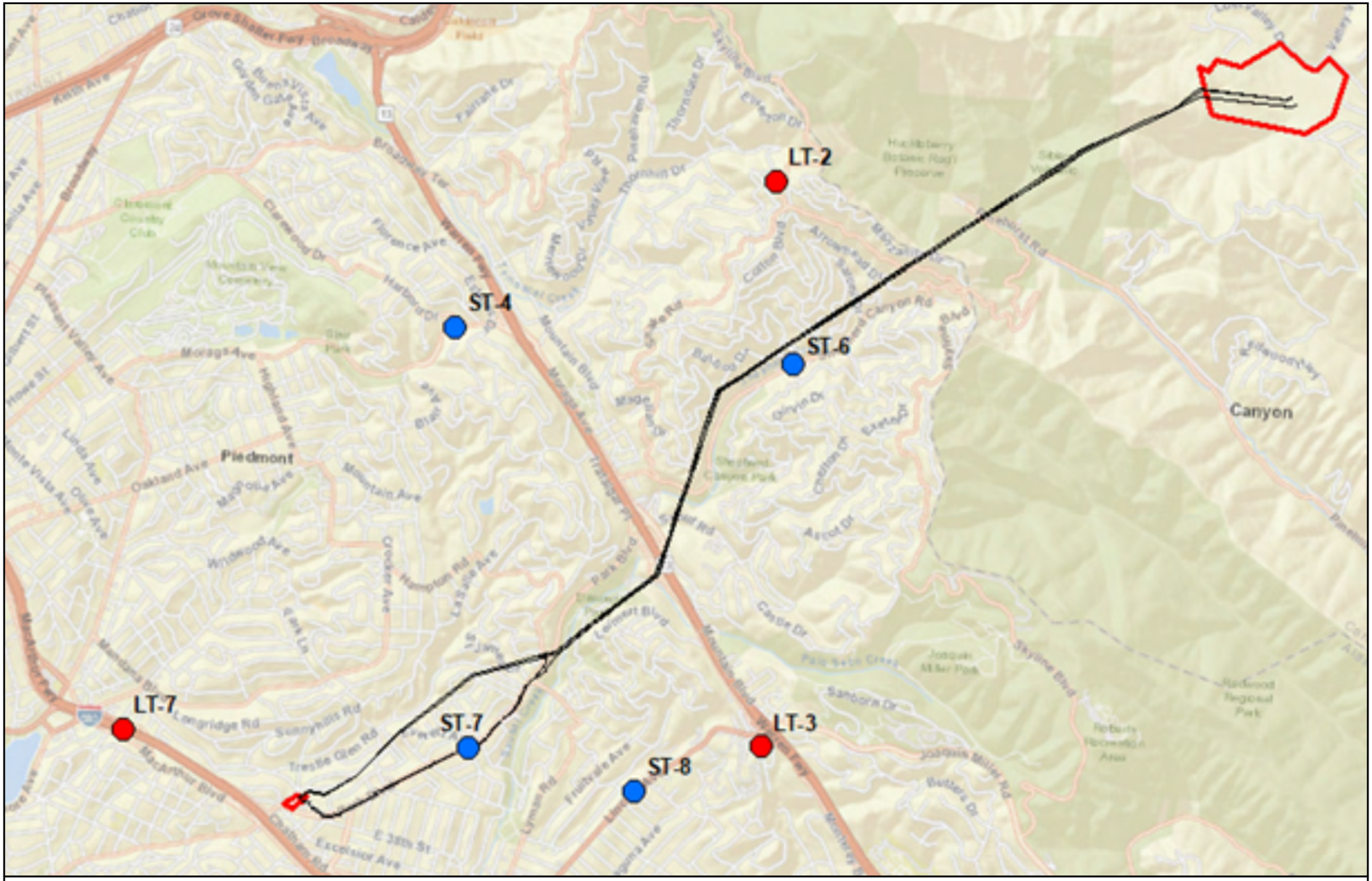
N

0 0.5 1

Miles

Figure 3.11-1

Residential Receptors Near Project Features



Source: PG&E

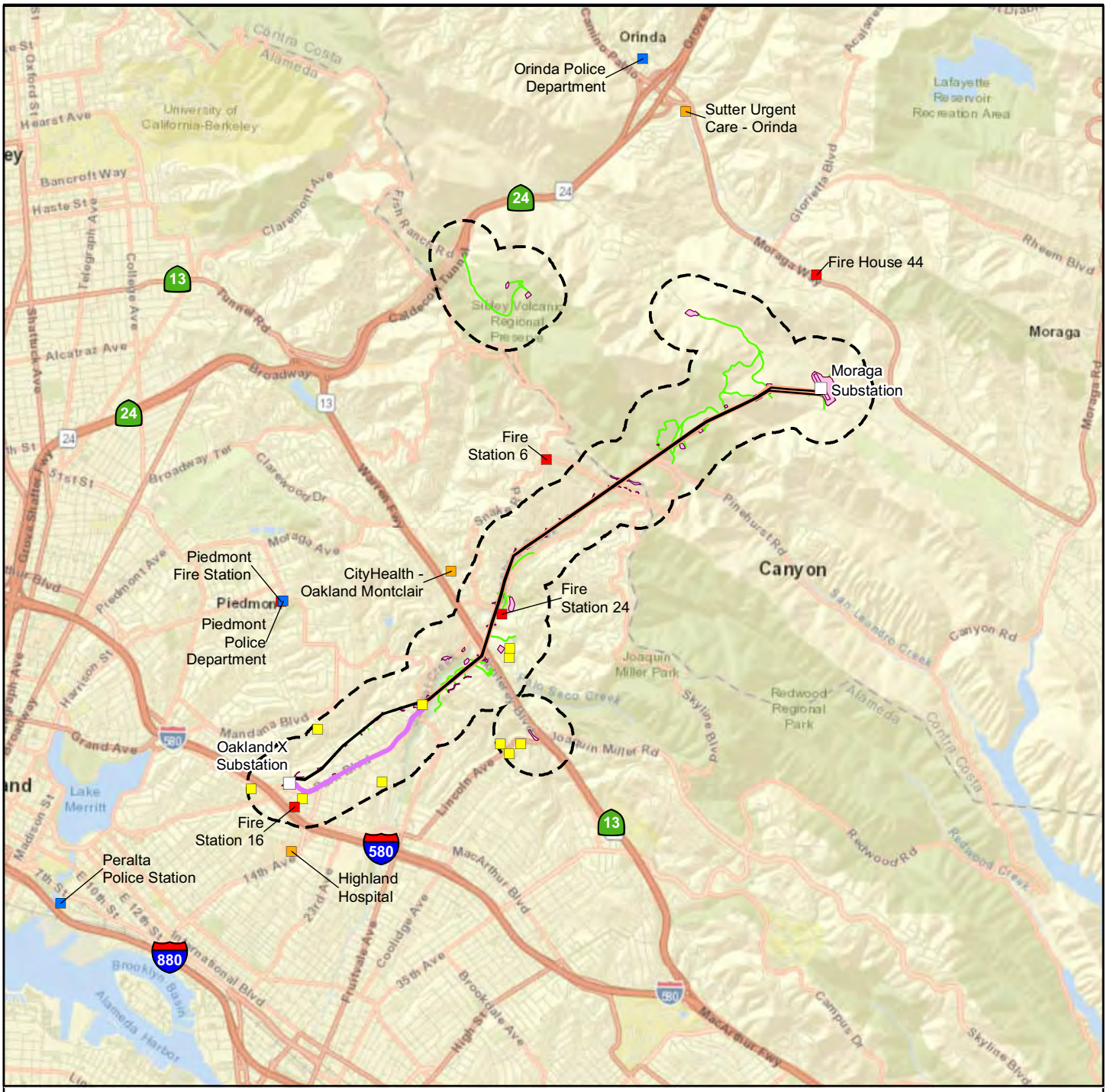
Noise Monitoring Locations

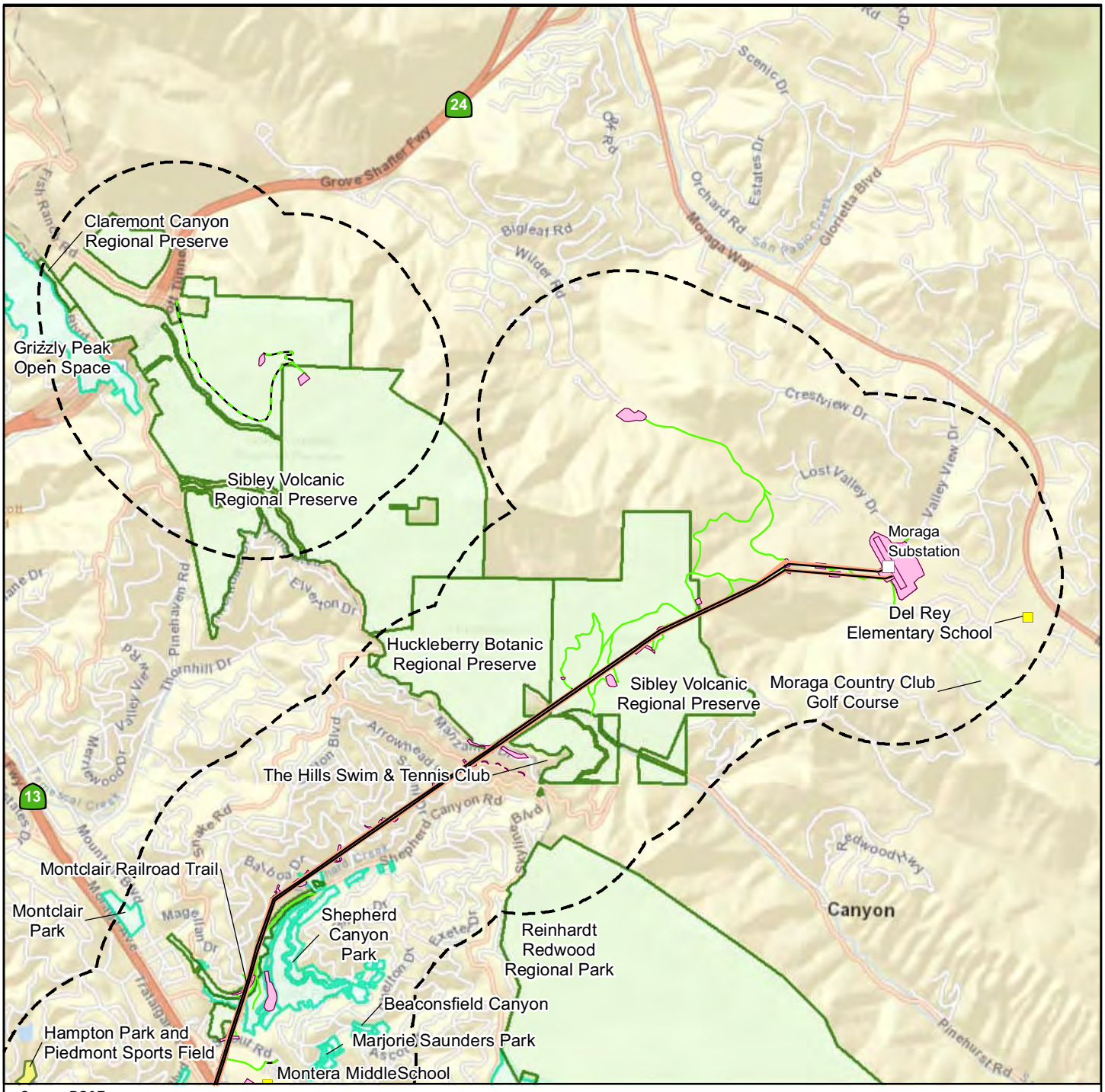
ST-X Short Term Monitoring

LT-X Long Term Monitoring

Figure 3.11-2

City of Oakland
Noise Monitoring Locations


Orinda
Orinda Police Department
Sutter Urgent Care - Orinda
Fire House 44
Moraga
Moraga Substation
Fire Station 6
Canyon
Fire Station 24
Piedmont Fire Station
Piedmont
Piedmont Police Department
CityHealth - Oakland Montclair
Oakland X Substation
Fire Station 16
Peralta Police Station
Highland Hospital
Lafayette Reservoir Recreation Area
Redwood Regional Park
Joaquin Miller Park
Lake Merritt
University of California-Berkeley
Contra Costa
Alameda
Lafayette Reservoir
Moraga
Canyon
Piedmont
Oakland
Alameda
Berkeley
Orinda
Lake Merritt
Joaquin Miller Park
Redwood Regional Park
Bancroft Way
Hearst Ave
Haste St
Telegraph Ave
College Ave
Claremont Ave
Tunnel Rd
Broadway
Alcatraz Ave
Broadway Ter
Claremont Dr
Warren Fwy
Moraga Ave
Piedmont Ave
Harrison St
Grand Ave
Mandana Blvd
Lincoln Ave
MacArthur Blvd
Coolidge Ave
35th Ave
Brookdale Ave
High St
Fruitvale Ave
23rd Ave
14th Ave
7th St
10th St
12th St
International Blvd
Brooklyn Basin
Alameda Harbor
Fish Ranch Rd
Caldecott Tunnel
Shotwell Creek
Pinehurst Rd
San Leandro Creek
Canyon Rd
Joaquin Miller Rd
Skyline Blvd
Redwood Rd
Redwood Creek
Campus Dr
MacArthur Fwy
Rheem Blvd
Moraga Rd
Glorietta Blvd
Moraga Way
Camino Pablo
Grove St
Acalanes
Oxford St
Shattuck Ave
Gilman St
Ashby Ave
Adeline St
Martin Luther King Jr Way
Grove-Shafter Fwy
51st St
Piedmont Ave
Harrison St
Broadway
Grand Ave
Mandana Blvd
Lake Merritt
Madison St
7th St
10th St
12th St
International Blvd
Brooklyn Basin
Alameda Harbor
Fruitvale Ave
Coolidge Ave
35th Ave
Brookdale Ave
High St
23rd Ave
14th Ave
MacArthur Blvd
Lincoln Ave
Joaquin Miller Rd
Skyline Blvd
Redwood Rd
Redwood Creek
Campus Dr
MacArthur Fwy
Rheem Blvd
Moraga Rd
Glorietta Blvd
Moraga Way
Camino Pablo
Grove St
Acalanes
Fish Ranch Rd
Caldecott Tunnel
Shotwell Creek
Pinehurst Rd
San Leandro Creek
Canyon Rd
Contra Costa
Alameda
Oxford St
Hearst Ave
Bancroft Way
Haste St
Telegraph Ave
College Ave
Claremont Ave
Tunnel Rd
Broadway
Alcatraz Ave
Broadway Ter
Claremont Dr
Warren Fwy
Moraga Ave
Piedmont Ave
Harrison St
Grand Ave
Mandana Blvd
Lincoln Ave
MacArthur Blvd
Coolidge Ave
35th Ave
Brookdale Ave
High St
Fruitvale Ave
23rd Ave
14th Ave
7th St
10th St
12th St
International Blvd
Brooklyn Basin
Alameda Harbor
Fish Ranch Rd
Caldecott Tunnel
Shotwell Creek
Pinehurst Rd
San Leandro Creek
Canyon Rd
Joaquin Miller Rd
Skyline Blvd
Redwood Rd
Redwood Creek
Campus Dr
MacArthur Fwy
Rheem Blvd
Moraga Rd
Glorietta Blvd
Moraga Way
Camino Pablo
Grove St
Acalanes



Source: PG&E

- 0.5-mile Project Buffer
- School
- Substation
- Project Access (unpaved)
- Project Access (paved)
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Parks within 0.5 Mile of the Proposed Project

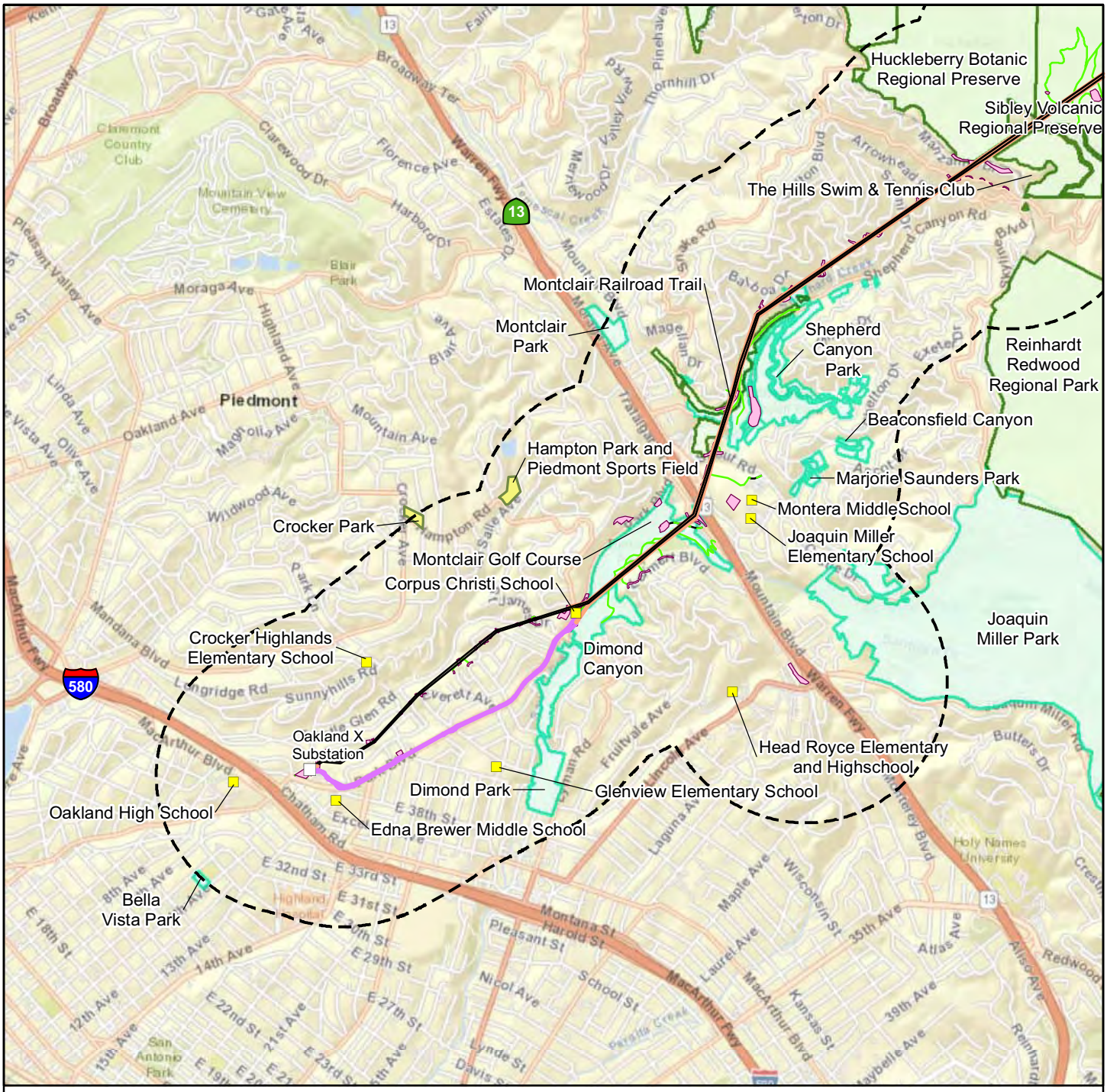
- East Bay Regional Park District (EBRPD)
- City of Oakland
- City of Piedmont

0 0.5 1 Miles

N

Figure 3.14-1

Park and Recreation Facilities
Map 1 of 2



Source: PG&E

- 0.5-mile Project Buffer
- School
- Substation
- Project Access (unpaved)
- Project Access (paved)
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

Parks within 0.5 Mile of the Proposed Project

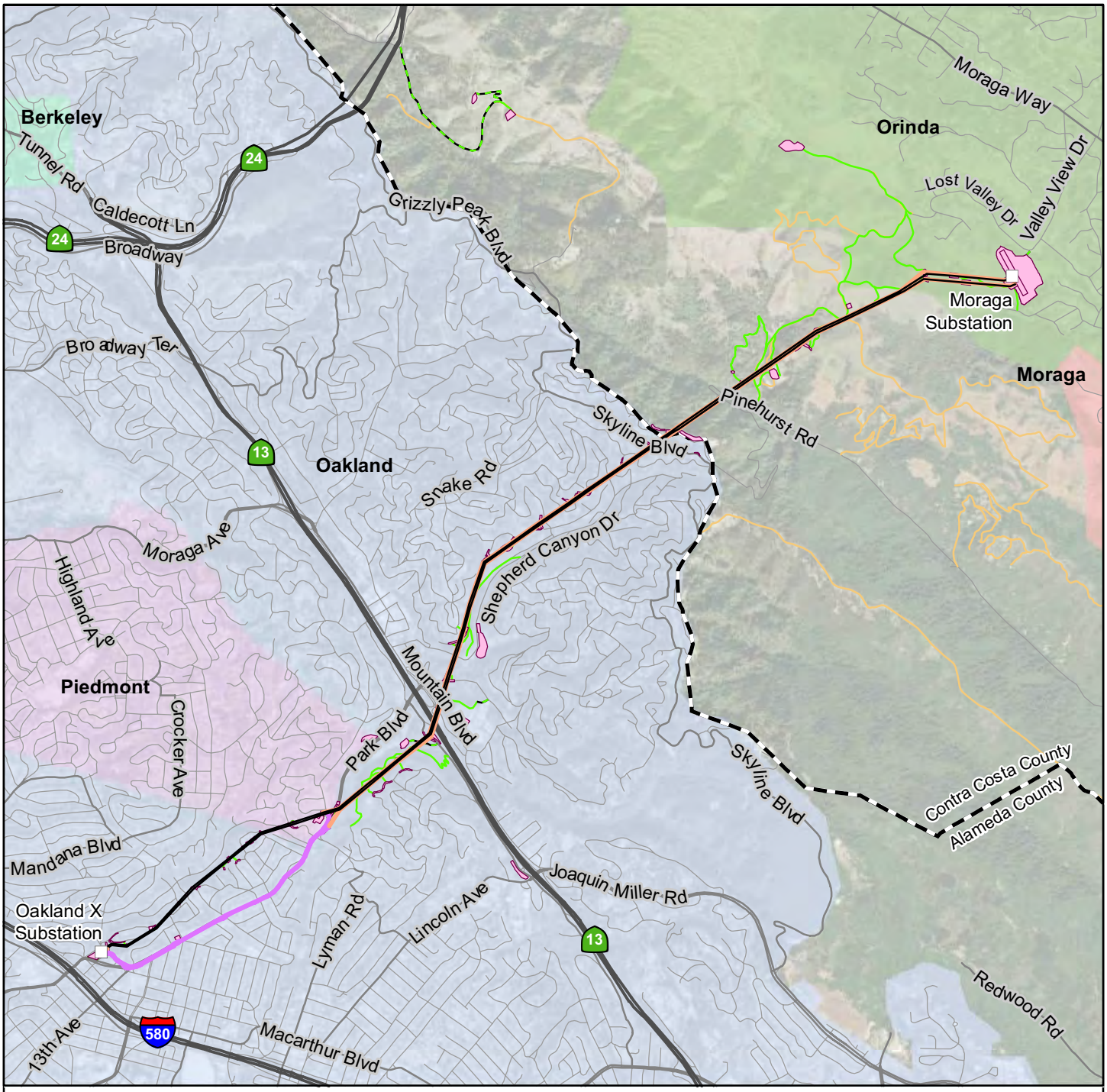
- East Bay Regional Park District (EBRPD)
- City of Oakland
- City of Piedmont

0 0.5 1 Miles

N

Figure 3.14-1

Park and Recreation Facilities
Map 2 of 2



Source: PG&E

- Substation
- Project Access (unpaved)
- Project Access (paved)
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

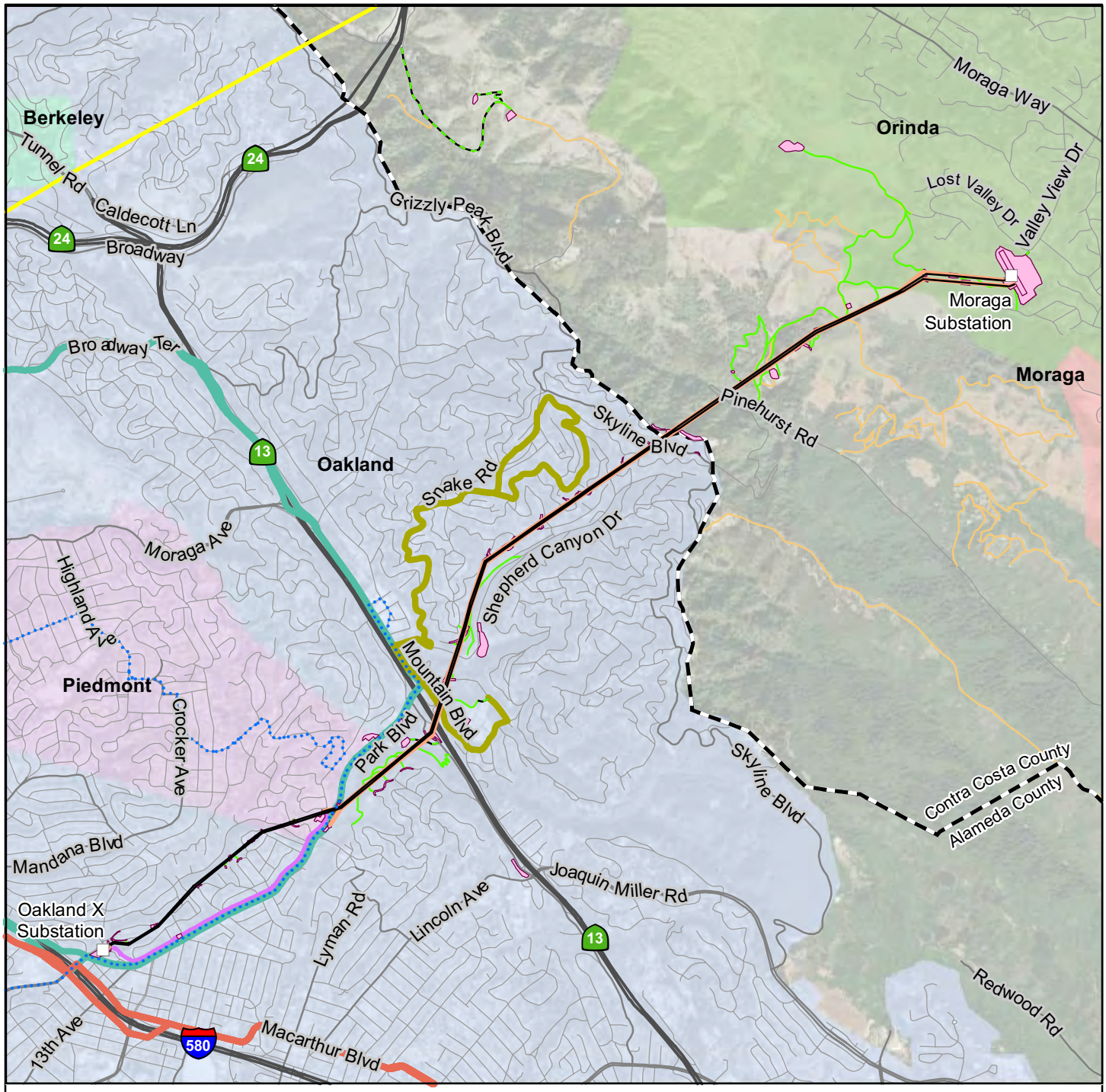
- State Route/Highway
- Arterial
- Local Street
- Unpaved Road
- County Boundary
- City of Berkeley
- City of Moraga
- City of Oakland
- City of Orinda
- City of Piedmont

0 0.5 1
Miles

N

Figure 3.15-1

Existing Roadway Network



Source: PG&E

- Substation
- Project Access (unpaved)
- Project Access (paved)
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

- State Route/Highway
- Arterial
- Local Street
- Unpaved Road
- County Boundary
- City of Berkeley
- City of Moraga
- City of Oakland
- City of Orinda
- City of Piedmont

- BART Yellow Line

AC Transit Bus Routes

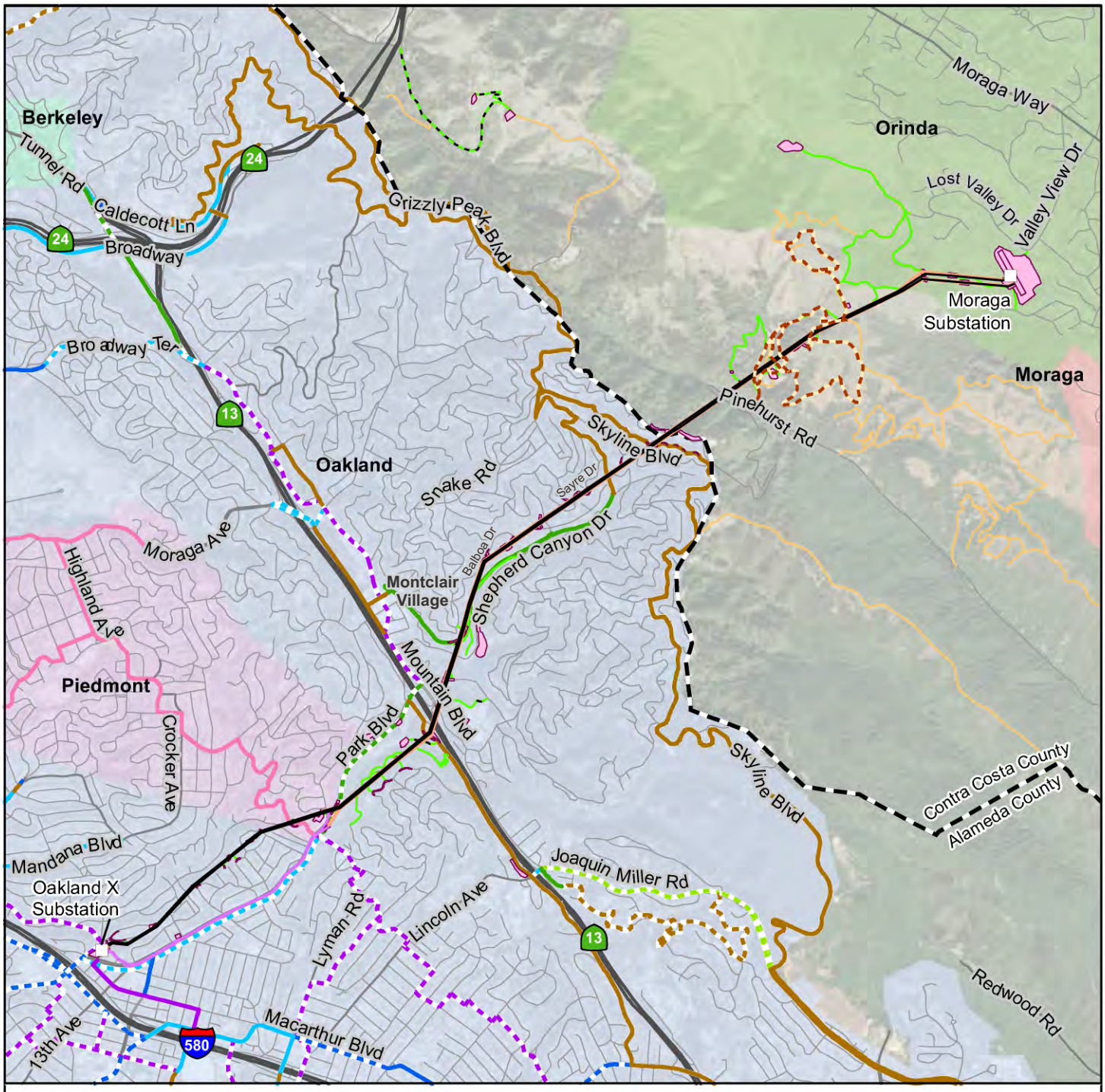
- 33
- 57, 805, NL, NX
- 642
- V

0 0.5 1 Miles

N

Figure 3.15-2

Existing Transit Services



Source: PG&E

- Substation
- Project Access (unpaved)
- Project Access (paved)
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

0 0.5 1 Miles

N

- State Route/Highway
- Arterial
- Local Street
- Unpaved Road
- County Boundary
- City of Berkeley
- City of Moraga
- City of Oakland
- City of Orinda
- City of Piedmont

East Bay Regional Park District

- Bike Path

City of Oakland Existing Bicycle Network (Dashed where Recommended)

- Path
- Protected Bike Lane
- Buffered Bike Lane
- Bike Lane
- Neighborhood Bike Route
- Bike Route

City of Piedmont Existing Bicycle Network

- Class 3 (Bike Route)

Figure 3.15-3

Existing and Planned Bicycle Facilities

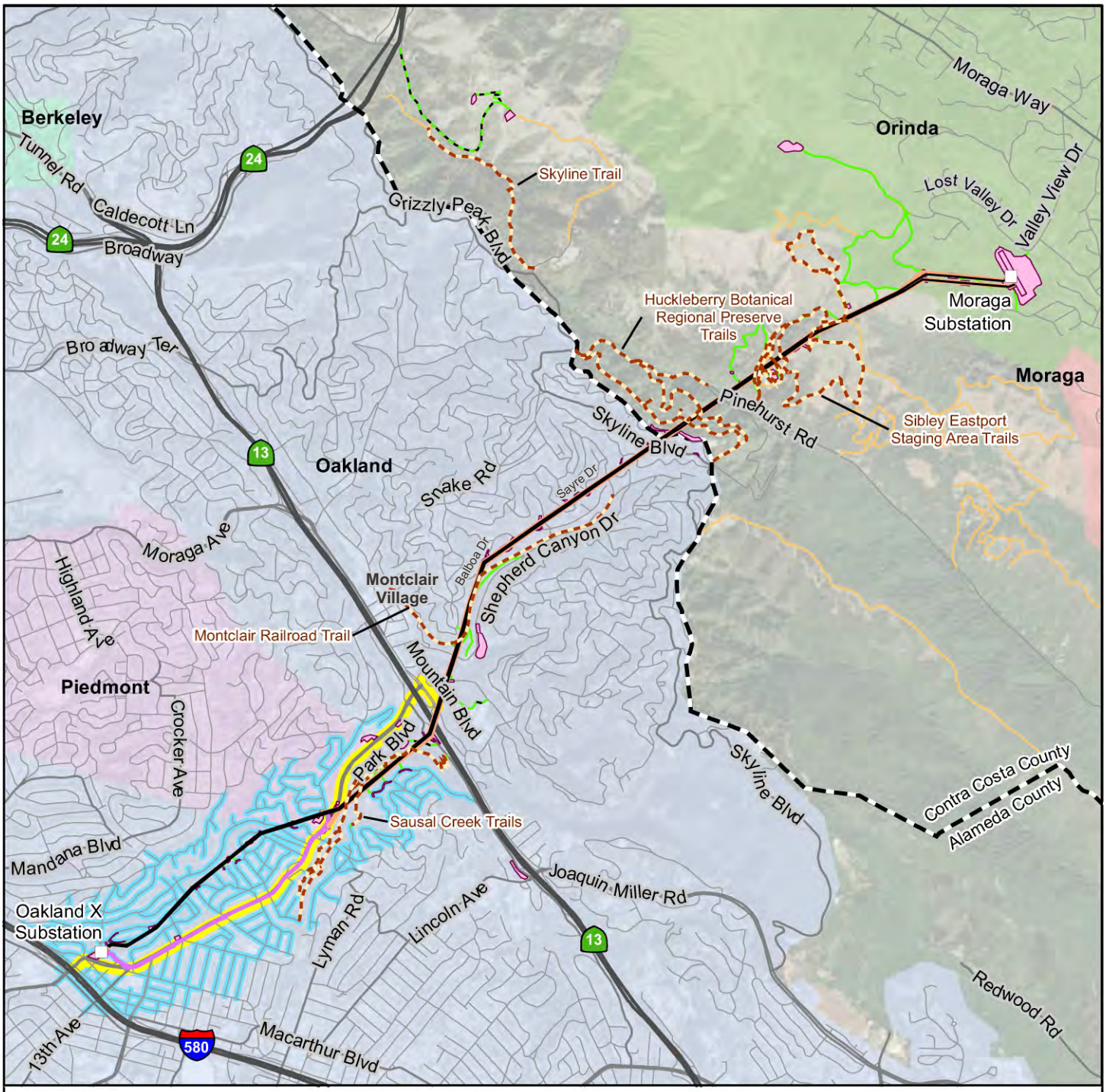


Figure 3.15-4

Existing Pedestrian Facilities

Estates Drive and Park Boulevard to Park Boulevard at El Centro Avenue, City of Oakland

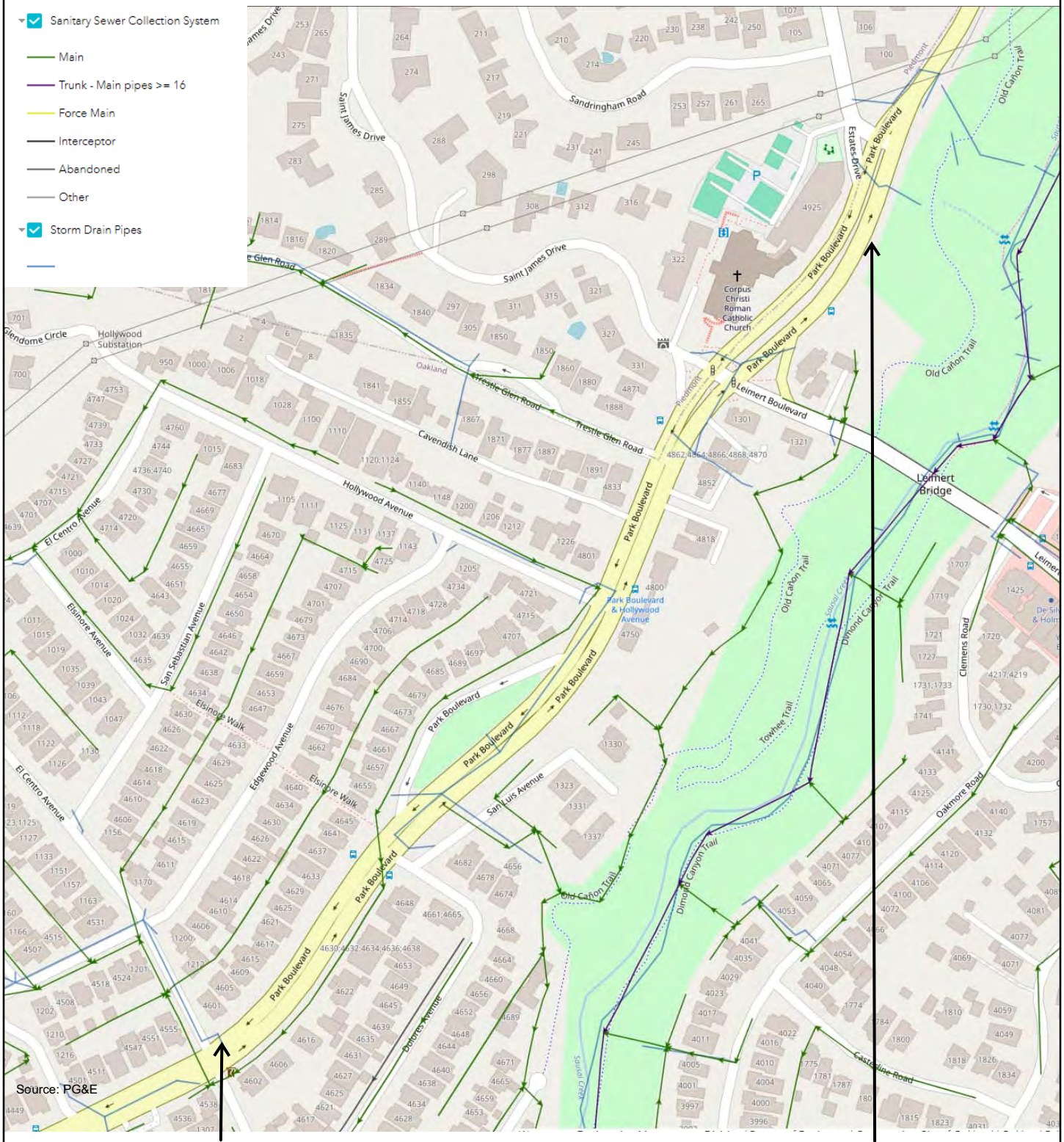
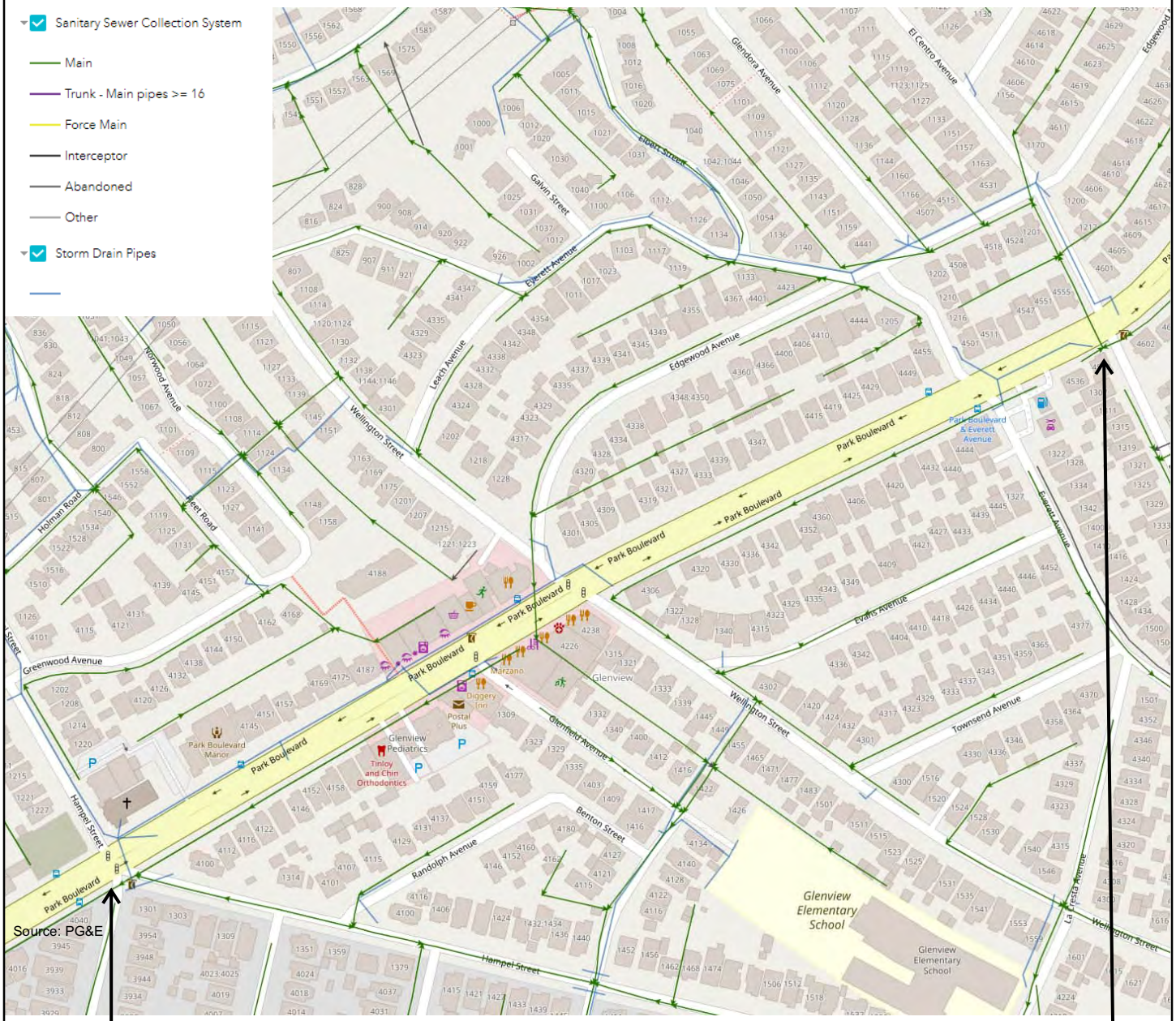


Figure 3.17-1

Sewer and Storm Drain Facilities
Map 1 of 3

Park Boulevard at El Centro Avenue to Park Boulevard at Hempel Street, City of Oakland



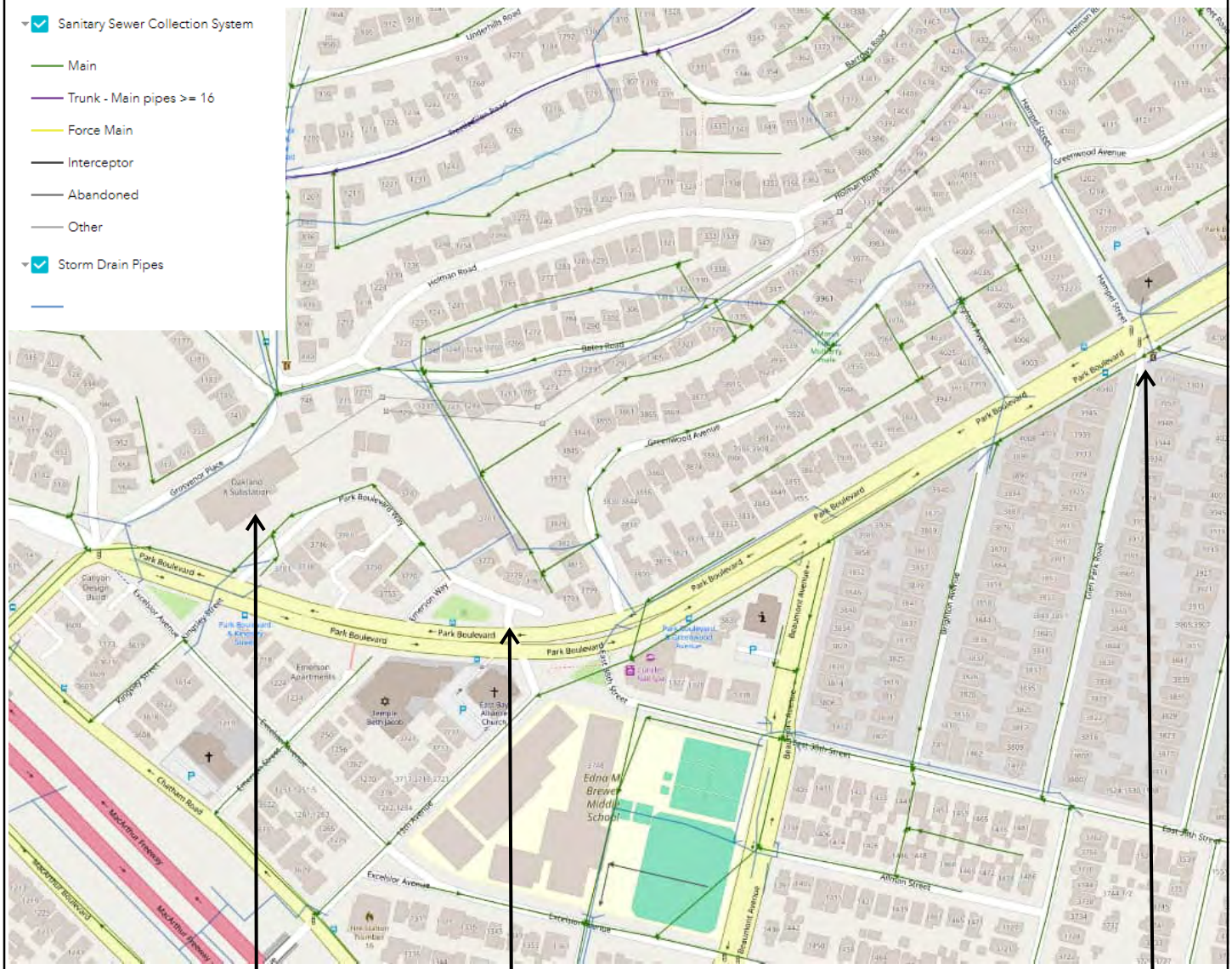
Hempel Street and
Park Bouelvard Intersection

El Centro Avenue and
Park Boulevard Intersection

Figure 3.17-1

Sewer and Storm Drain Facilities
Map 2 of 3

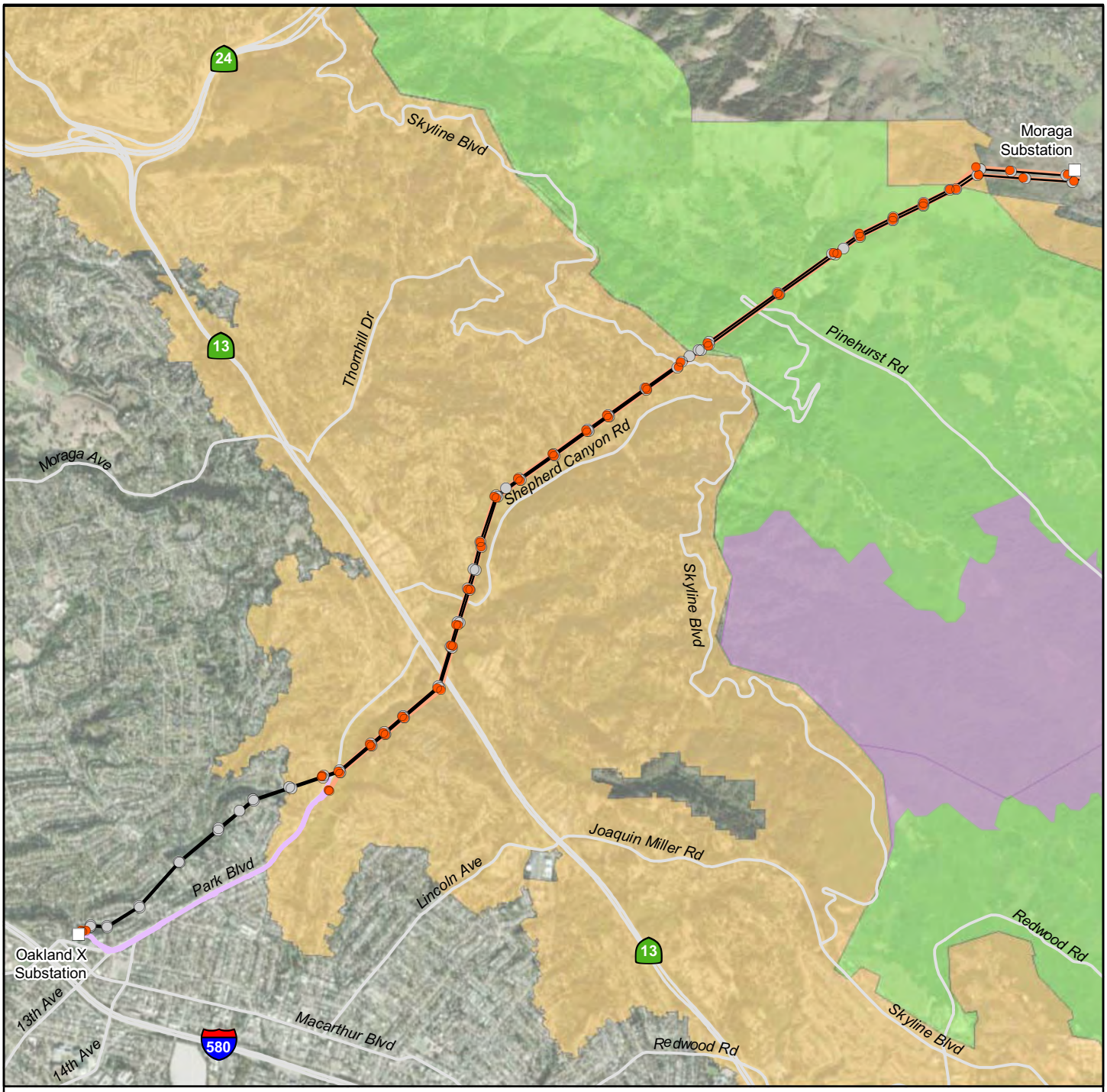
Park Boulevard at Hempel Street to Park Way Boulevard at Oakland X Substation, City of Oakland



Source: PG&E

Figure 3.17-1

Sewer and Storm Drain Facilities
Map 3 of 3



Source: PG&E

Substation

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

0 0.5 1

Miles

N

CAL FIRE Fire Hazard Severity Zones

State Responsibility Area (SRA)

Very High

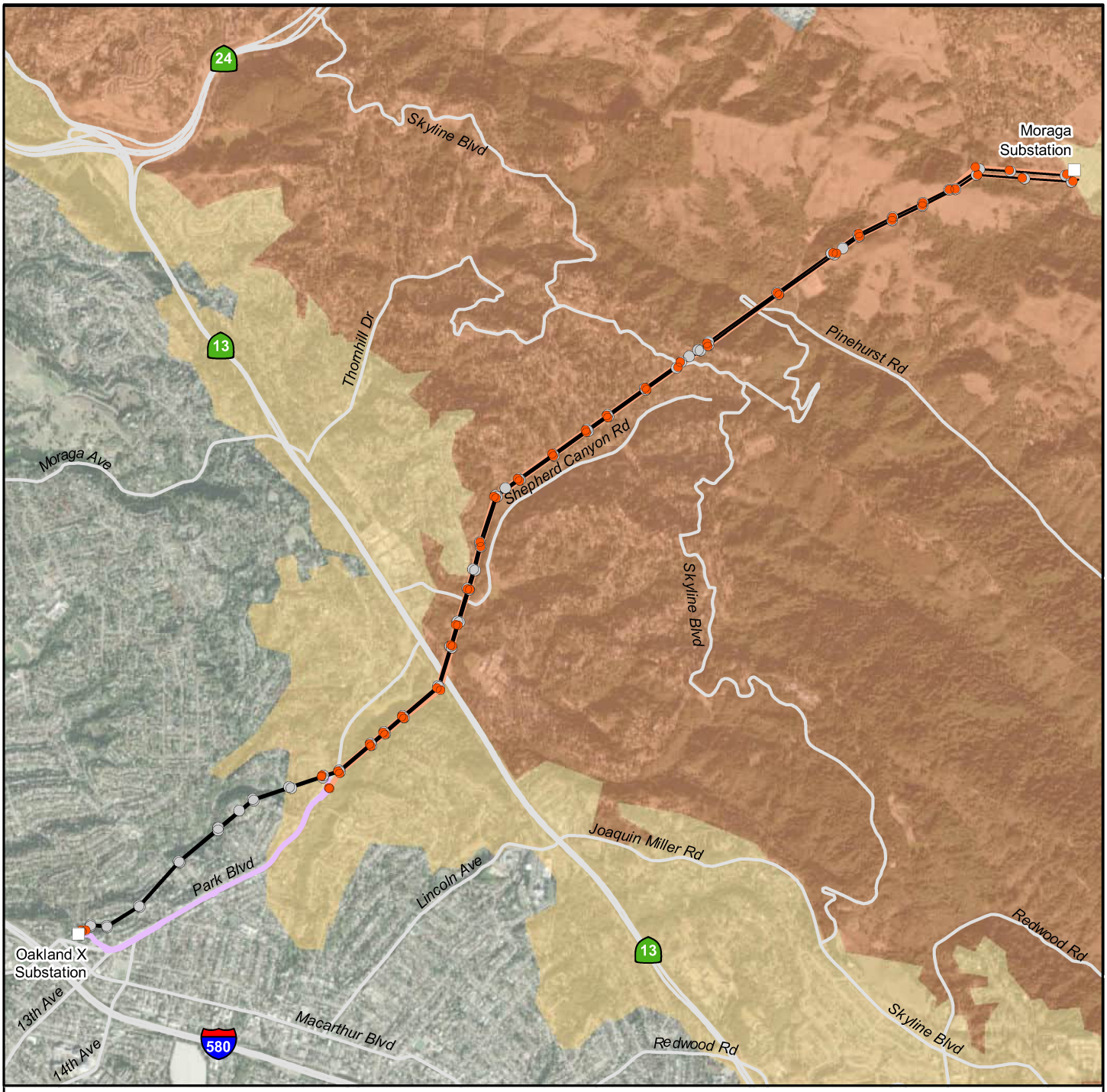
High

Local Responsibility Area (LRA)

Very High

Figure 3.18-1

CAL FIRE Fire Hazard Severity Zones



Source: PG&E

Substation

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed

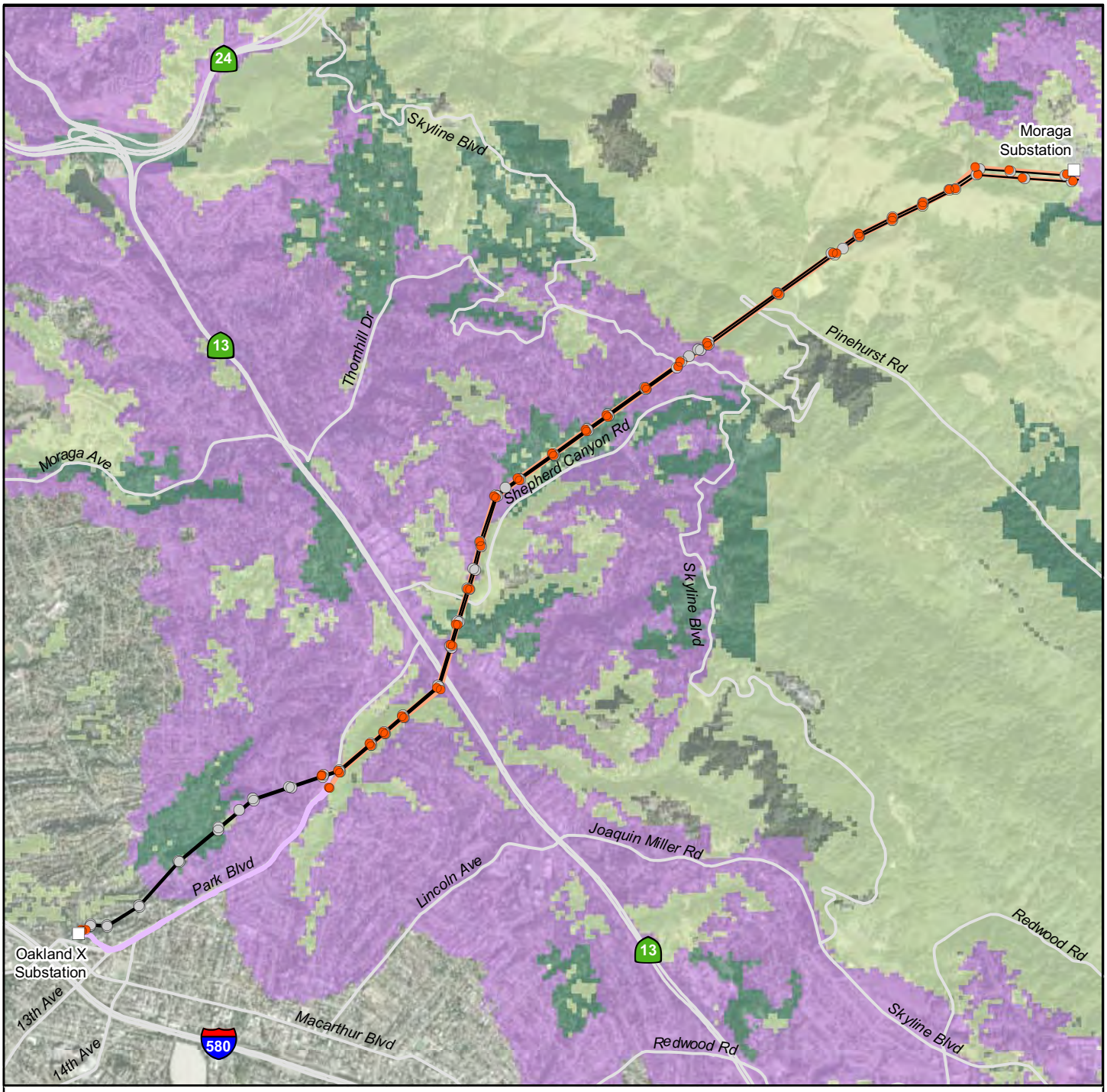
CPUC High Fire Threat Districts
- Tier 3 - Extreme
- Tier 2 - Elevated

0 0.5 1
Miles

N

Figure 3.18-2

CPUC High Fire Threat Districts



Source: PG&E

Substation

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed

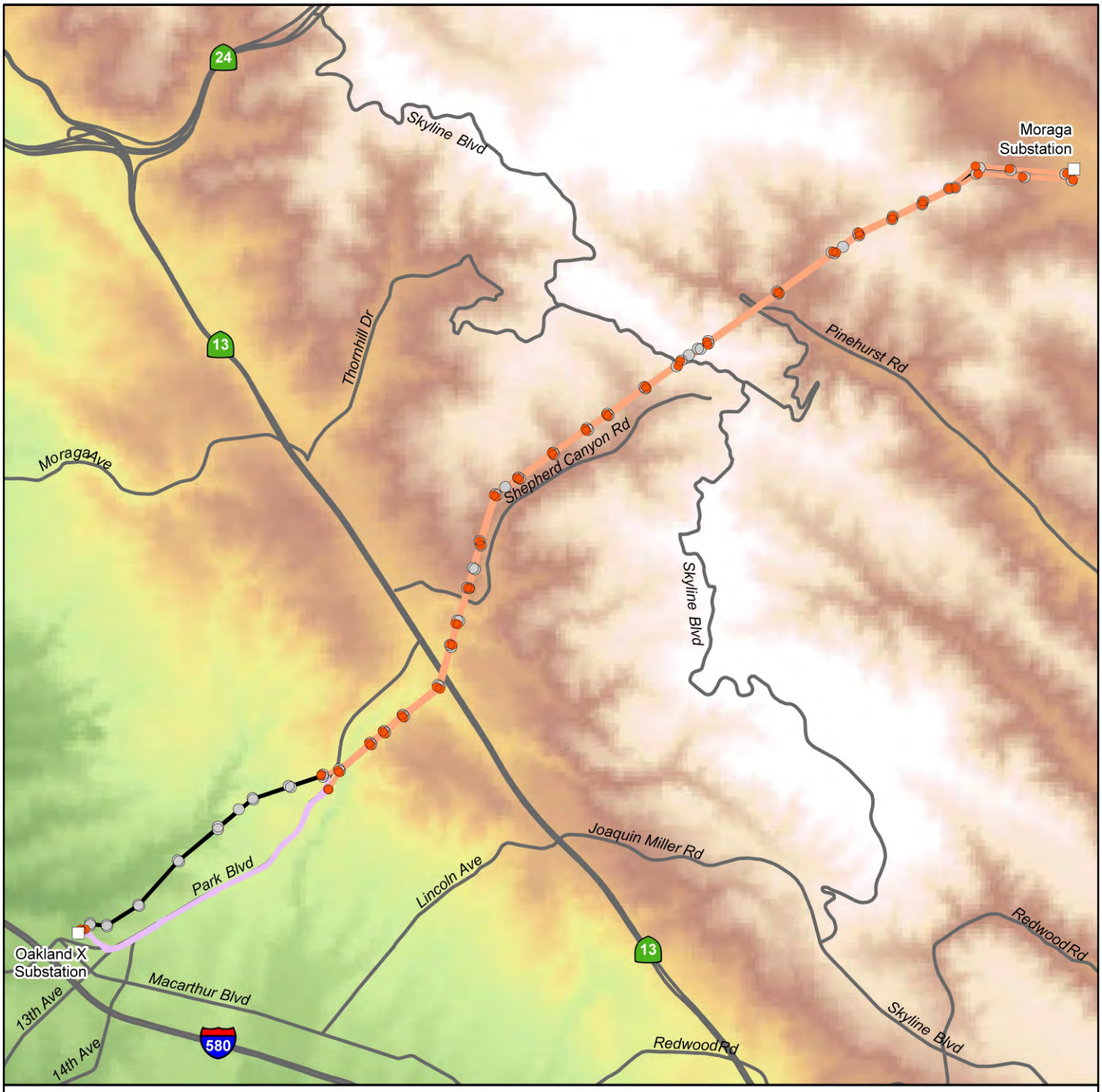
Wildland Urban Interface (WUI)
- Wildfire Influence Zone
- Wildland Urban Interface
- Wildland Urban Intermix
- Not WUI

0 0.5 1
Miles

N

Figure 3.18-3

Wildland Urban Interface



Source: PG&E

Substation

Overhead Structures

Existing

Proposed

Overhead Routes

Existing

Proposed

Underground Routes

Proposed

Elevation (meters)

580

0

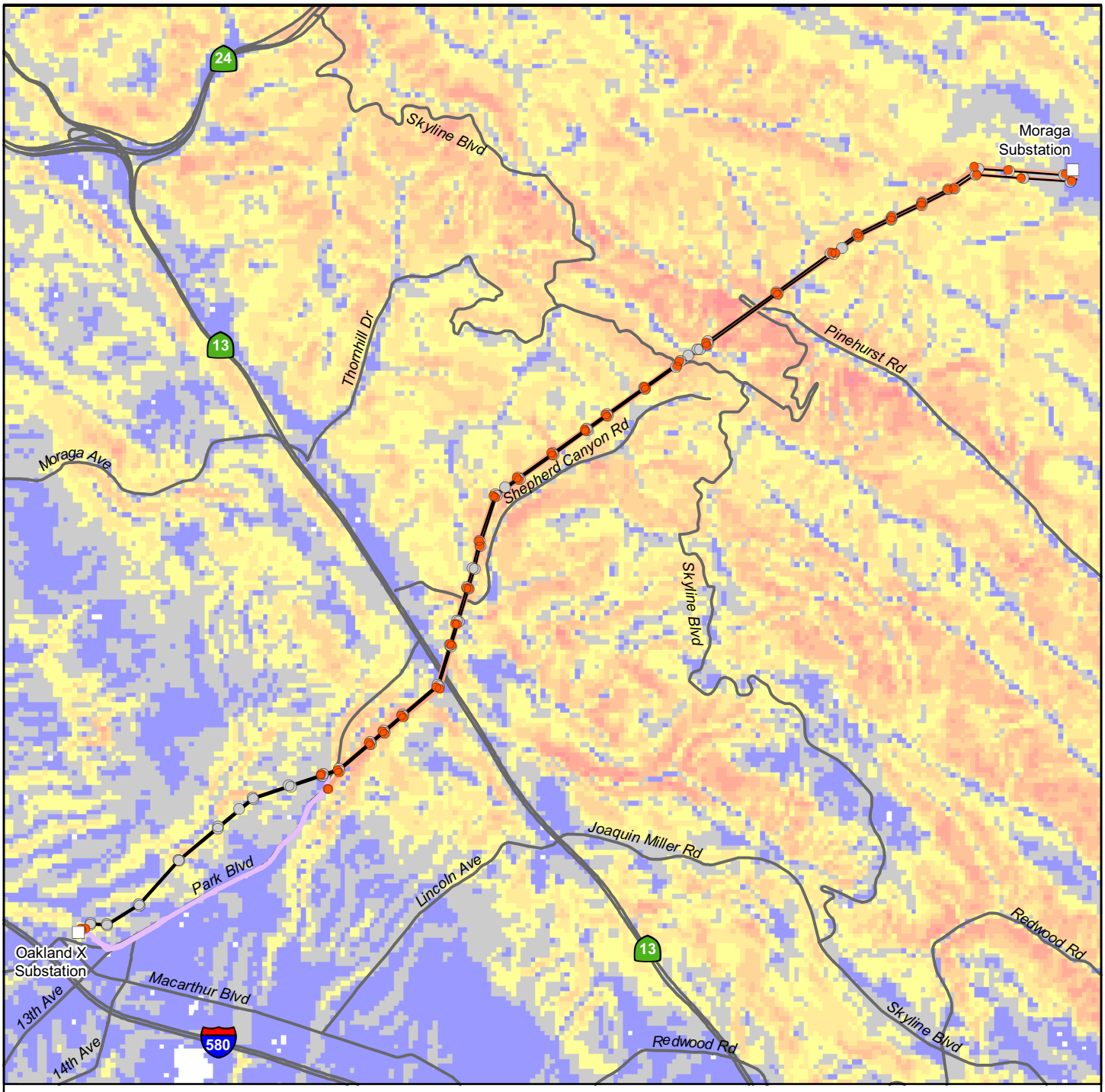
0 0.5 1

Miles

N

Figure 3.18-4

Project Area Elevation



Source: PG&E

Substation

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed

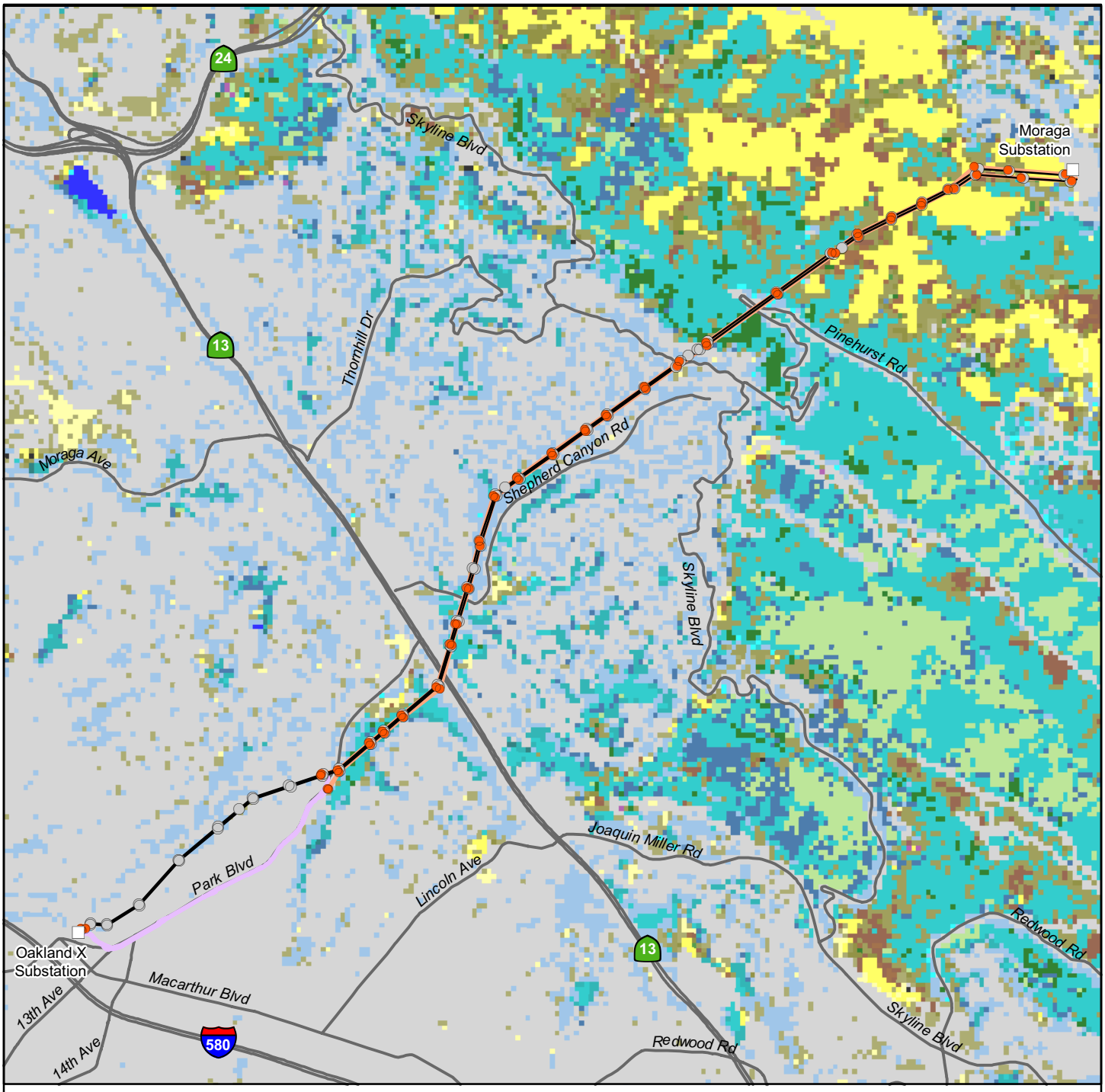
0 0.5 1
Miles

N

Slope (Degrees)
- 0
- >0 - 5
- >5 - 10
- >10 - 15
- >15 - 20
- >20 - 25
- >25 - 30
- >30 - 35
- >35 - 40
- >40 - 45

Figure 3.18-5

Project Area Slope



Source: PG&E

- Substation

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed

0 0.5 1 Miles

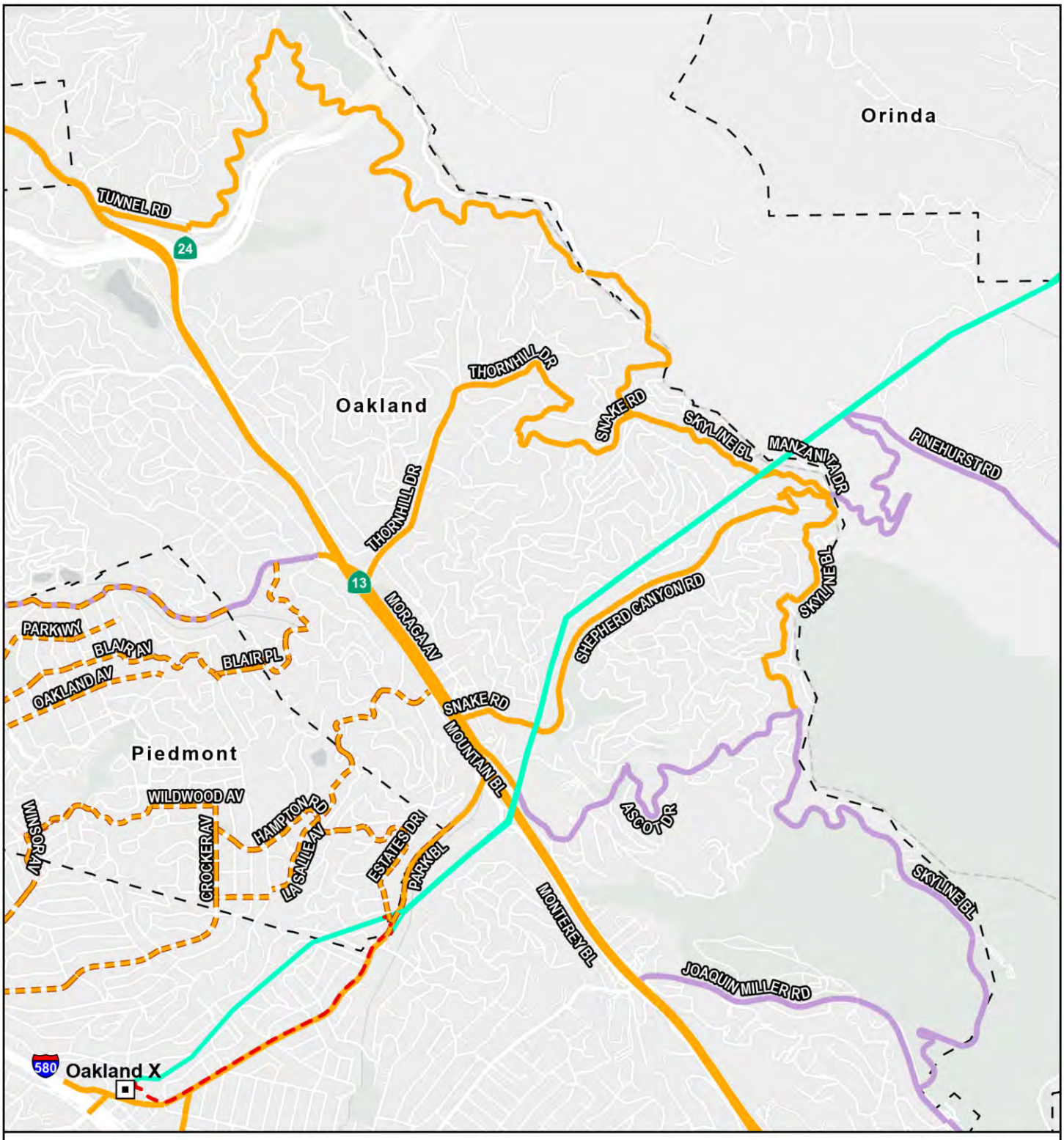
N

Vegetation Fuels

NB1	SH7
NB8	TU2
NB9	TU3
GR1	TU5
GR2	TL2
GR3	TL3
GS1	TL4
GS2	TL5
GS3	TL6
SH4	TL8
SH5	TL9
	SB2

Figure 3.18-6

Project Area Vegetation Fuels



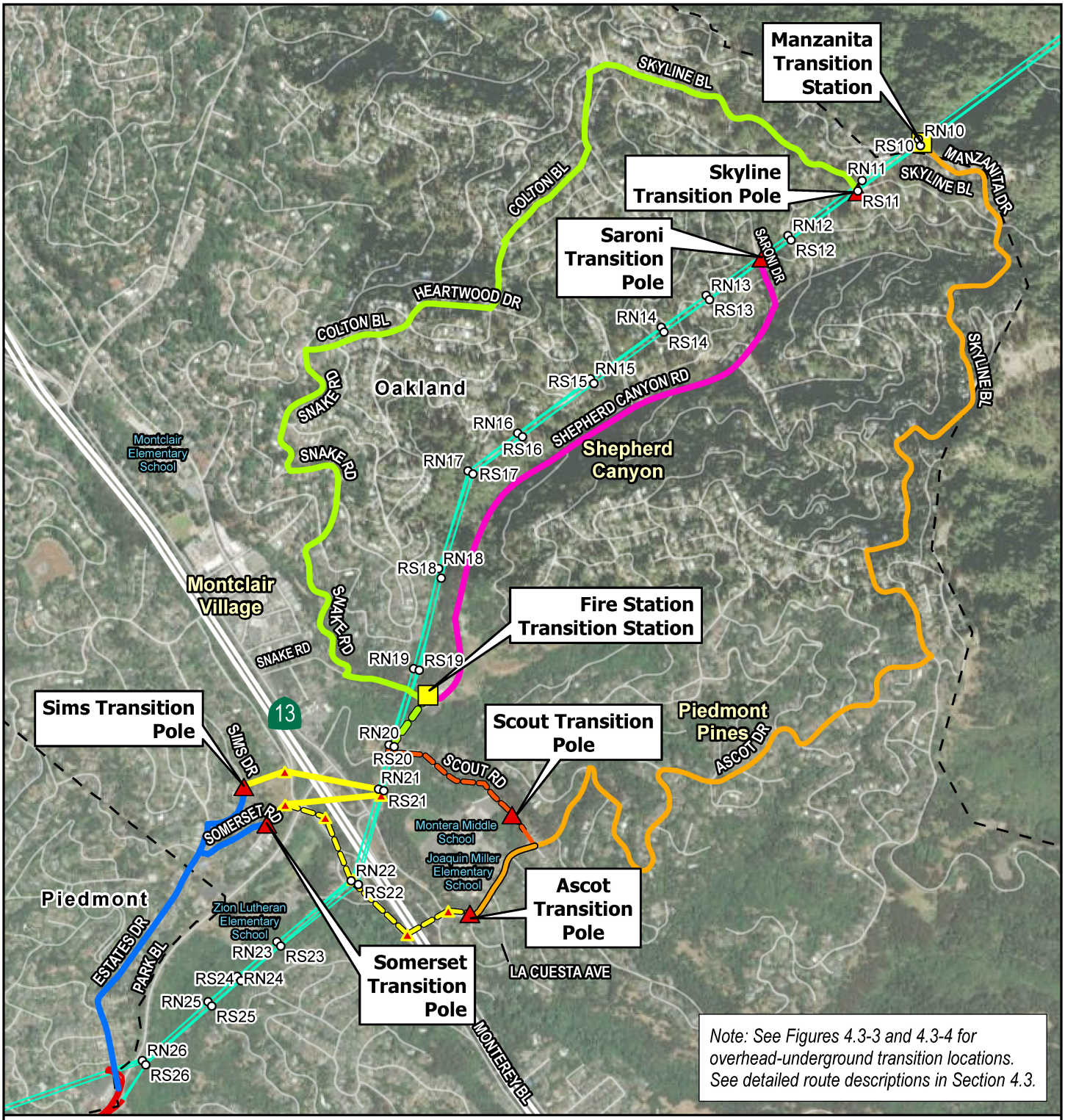
City of Oakland Local Evacuation Route - Primary
City of Oakland Local Evacuation Route - Secondary
City of Piedmont Major Evacuation Routes
Proposed Project Overhead
Proposed Project Underground
Substation
Municipal Boundaries

Figure 3.18-7
Designated Evacuation Routes and Proposed Project Components

N

2,000 0 2,000
Feet

Projection: NAD83 UTM Zone 10N
Sources: City of Piedmont, 2021; Dyett & Bhatia, 2021; PG&E, 2025; Esri, 2025.



- Alternative 2: Skyline-Colton-Snake Underground Alternative
- Alternative 2 & 3: Overhead Connection
- Alternative 3: Shepherd Canyon Underground Alternative; Shepherd Canyon Saroni Underground Option
- Alternative 4: Skyline-Ascot Underground Alternative
- Alternative 4: Option 1 Overhead Connection
- Alternative 4: Option 1 Underground
- Alternative 4: Option 2 Overhead
- Alternative 4: Option 2 Underground
- Alternative 5: Estates Drive Underground Alternative
- Overhead Alternative Component
- Transition Pole
- Overhead Pole
- Transition Station
- Proposed Pole
- Proposed Project Overhead
- Proposed Project Underground
- Municipal Boundaries

Figure 4.3-1. Overview of Alternatives Retained for Analysis

N

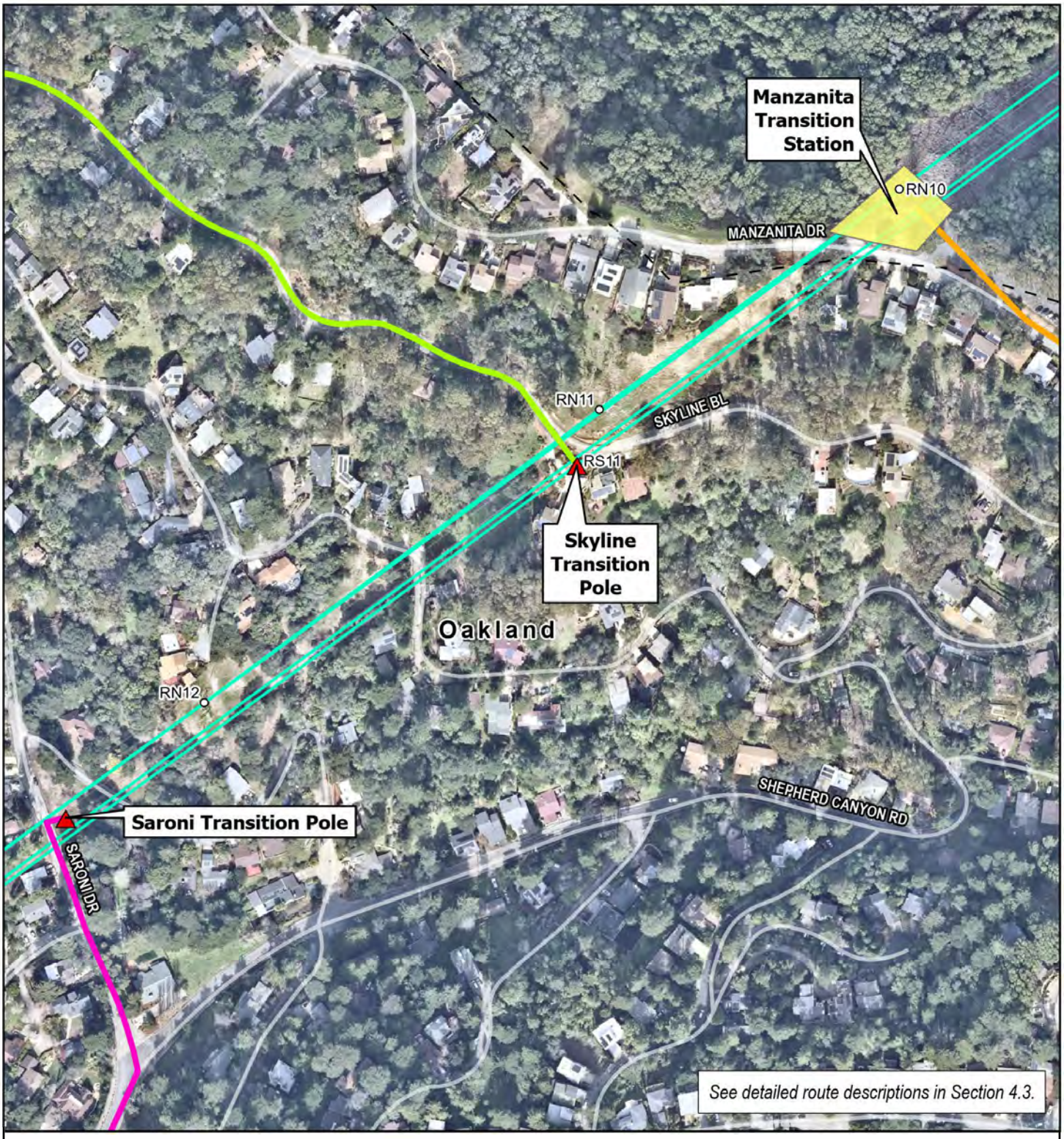
500 0 1,000 Feet

Projection: NAD83 UTM Zone 10N
Sources: PG&E, 2025; Esri, 2023.

Source: PG&E

Figure 4.3-2

Transition Station Examples



Alternative 2: Skyline-Colton-Snake Underground Alternative

Alternative 3: Shepherd Canyon Underground Alternative

Alternative 4: Skyline-Ascot Underground Alternative

Transition Station

Transition Pole

Proposed Pole

Proposed Project Overhead

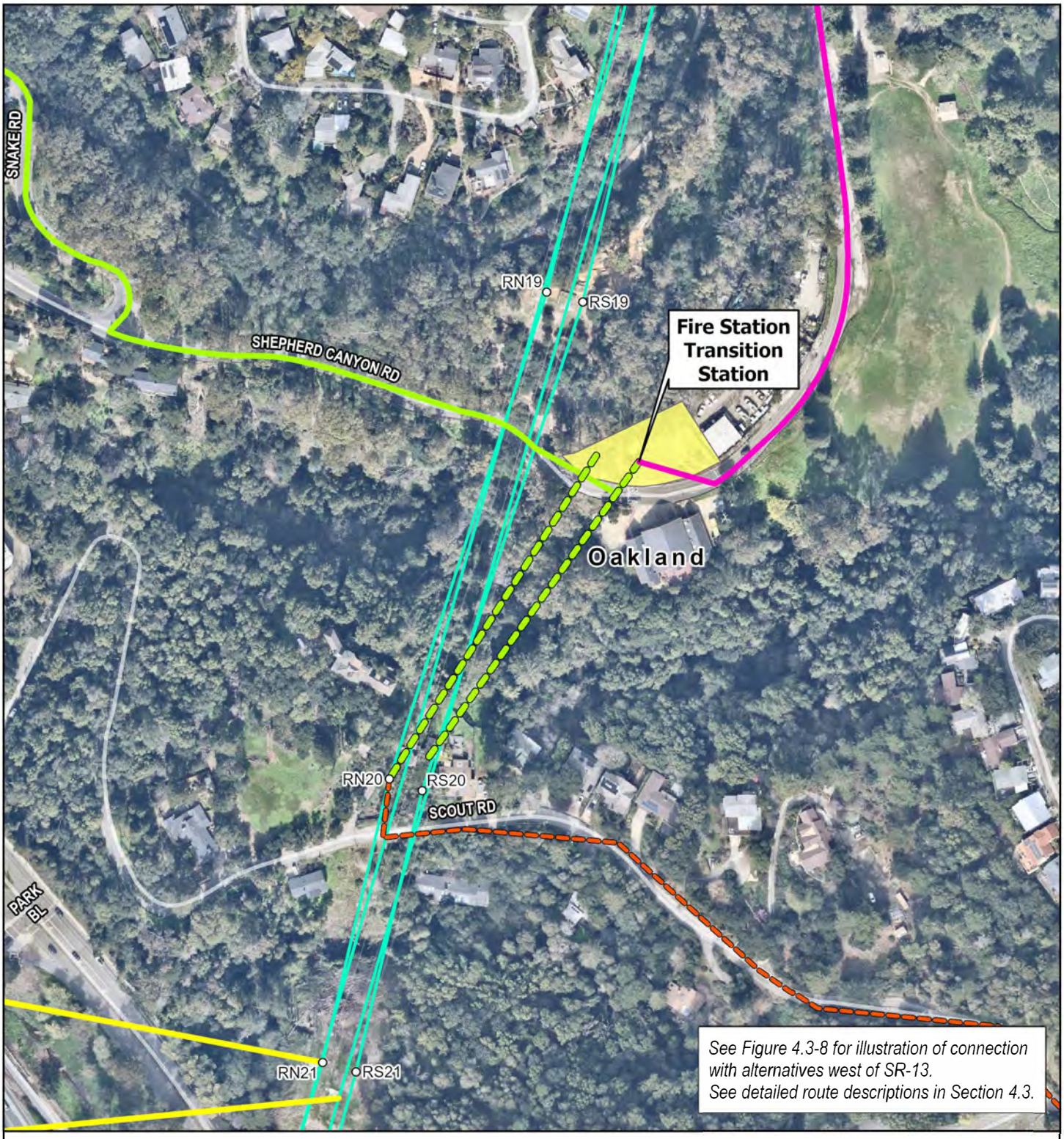
Municipal Boundaries

Figure 4.3-3.
Overhead-Underground Transitions for Alternatives: Eastern End

N

100 0 200
Feet

Projection: NAD83 UTM Zone 10N
Sources: PG&E, 2025; Nearmap, 2025.



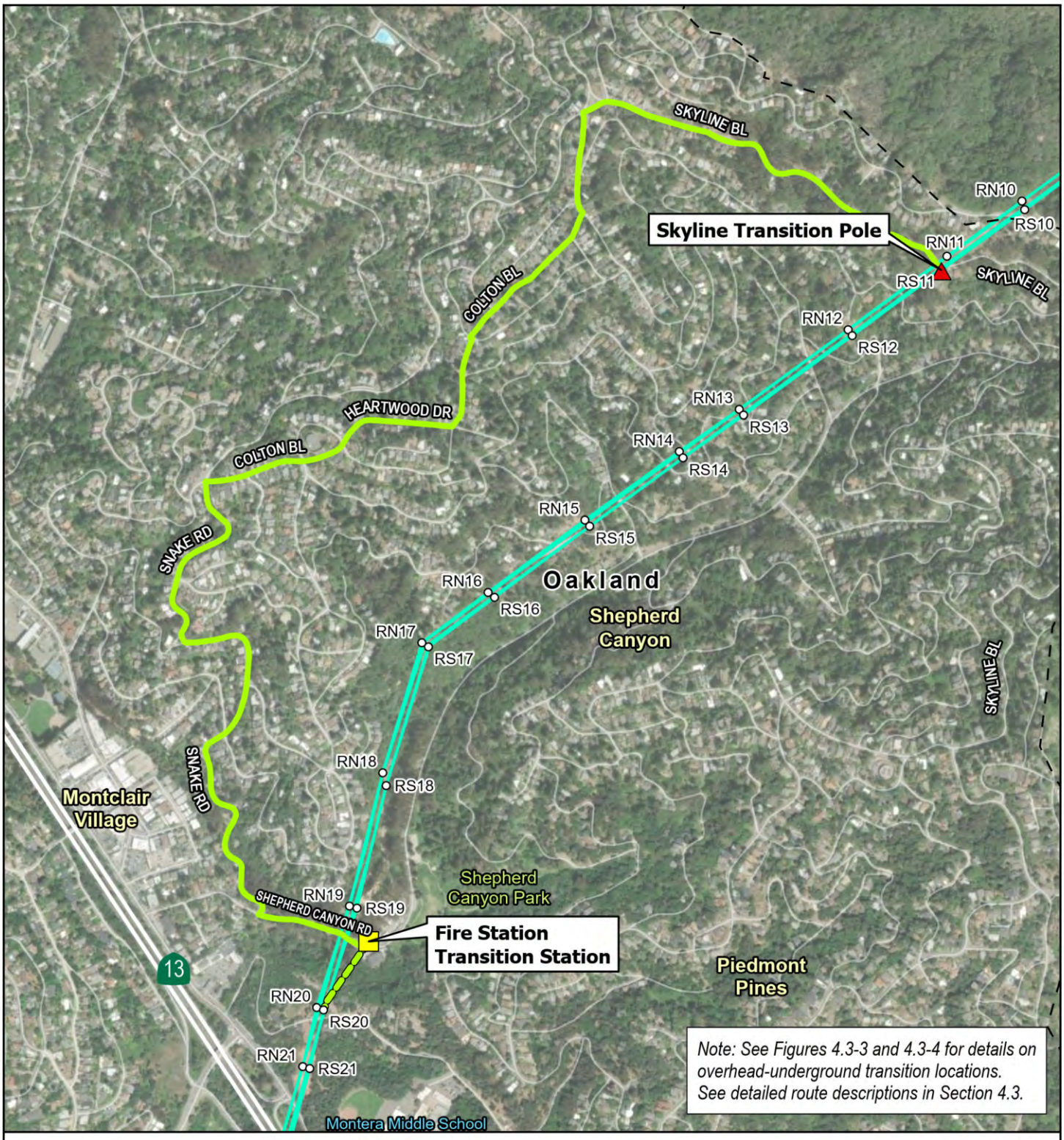
Alternative 2: Skyline-Colton-Snake Underground Alternative
Alternative 2 & 3: Overhead Lines from Fire Station to RS/RN 20
Alternative 3: Shepherd Canyon Underground Alternative
Alternative 4: Option 1 Overhead Connection
Overhead Alternative Component
Transition Station
Proposed Project Overhead
Proposed Pole

Figure 4.3-4.
Overhead-Underground Transition at Shepherd Canyon

N

100 0 200
Feet

Projection: NAD83 UTM Zone 10N
Sources: PG&E, 2025; Nearmap, 2025.



Alternative 2: Skyline-Colton-Snake Underground Alternative

Alternative 2: Overhead Connection

Transition Pole

Transition Station

Proposed Pole

Proposed Project Overhead

Municipal Boundaries

Figure 4.3-5.
Alternative 2:
Skyline-Colton-Snake Underground Alternative

N

500 0 1,000 Feet

Projection: NAD83 UTM Zone 10N
Sources: PG&E, 2025; Esri, 2023.

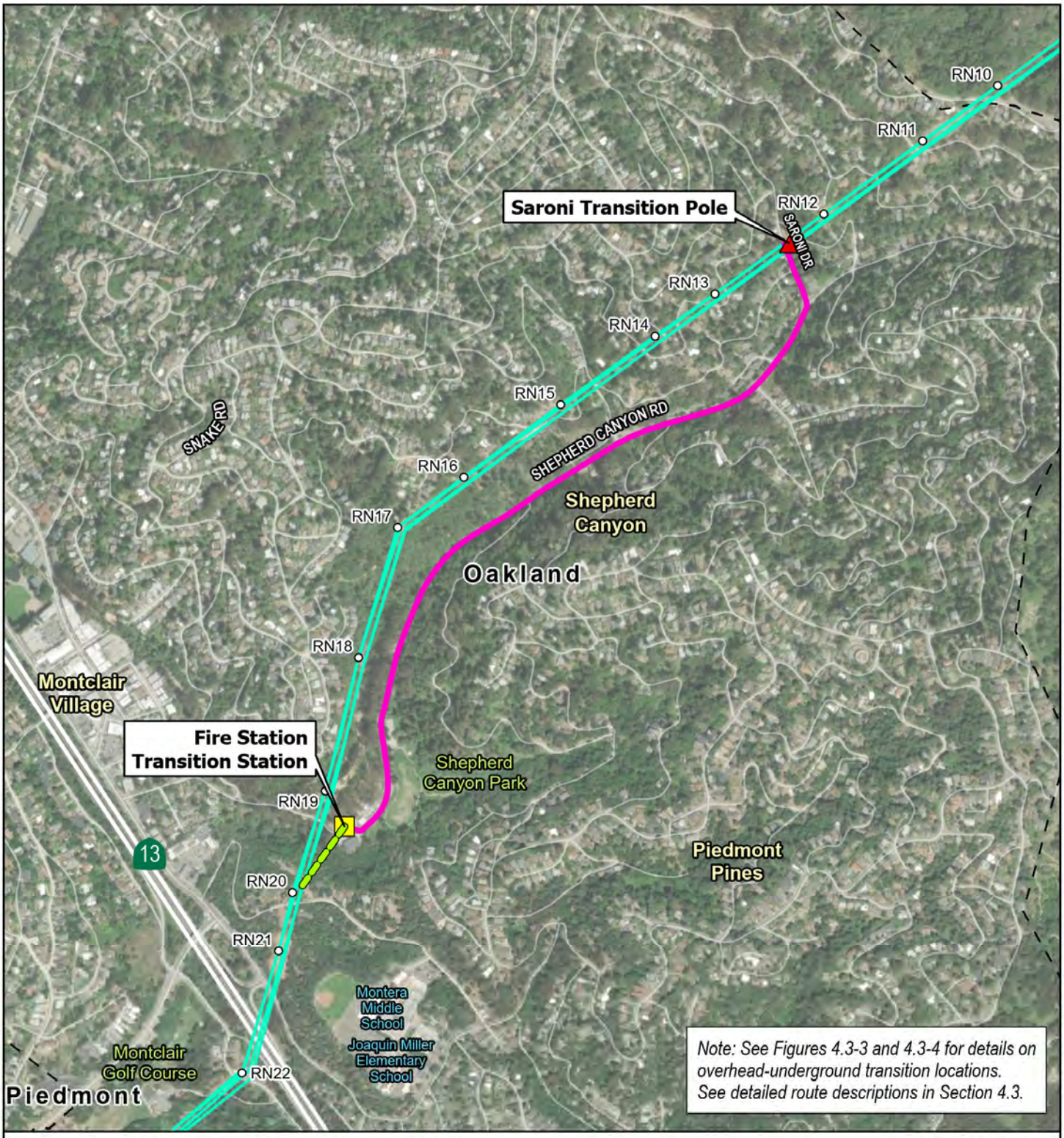


Figure 4.3-6.
Alternative 3:
Shepherd Canyon Underground Alternative

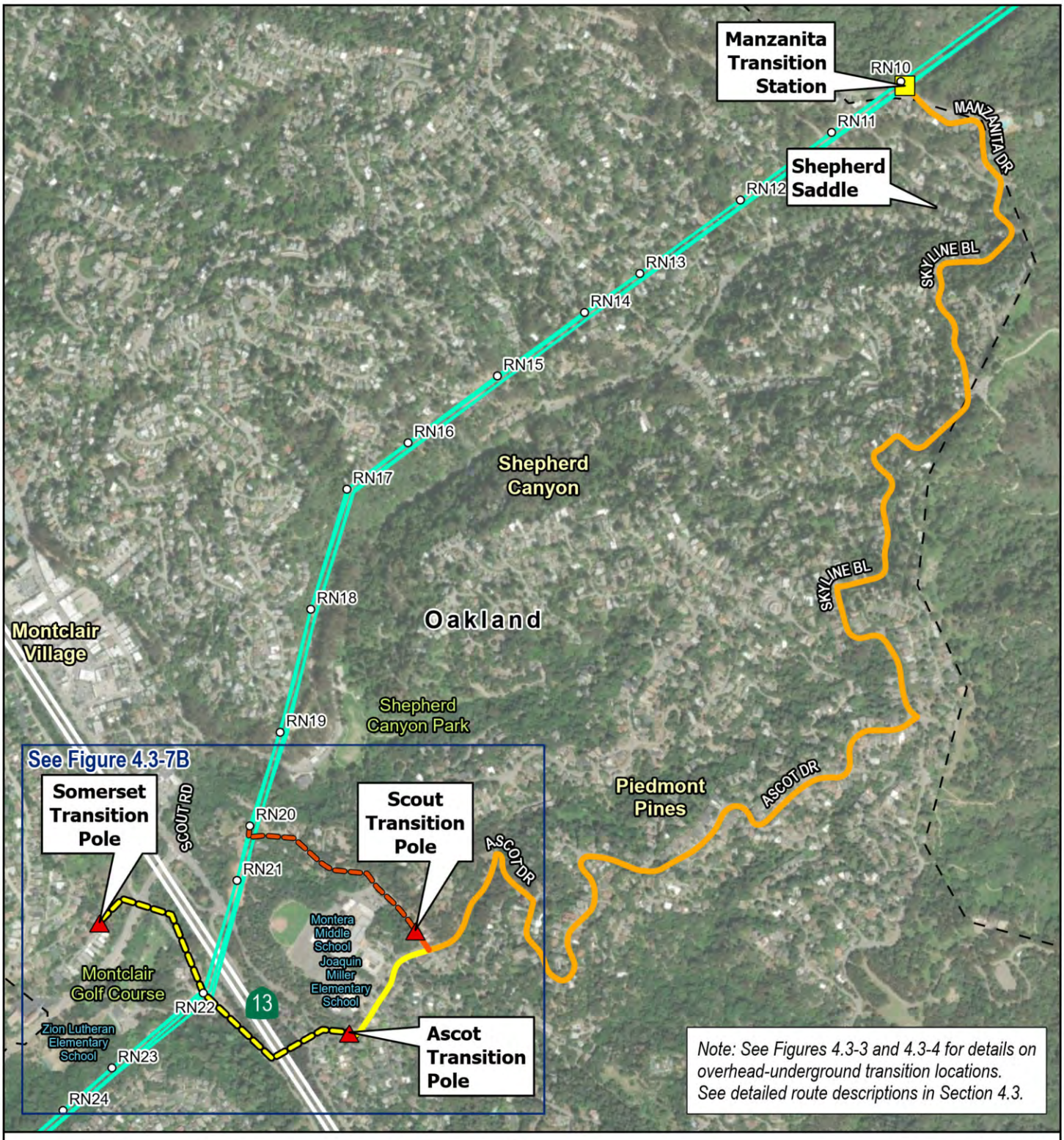


Figure 4.3-7A.
Alternative 4:
Skyline-Ascot Underground Alternative

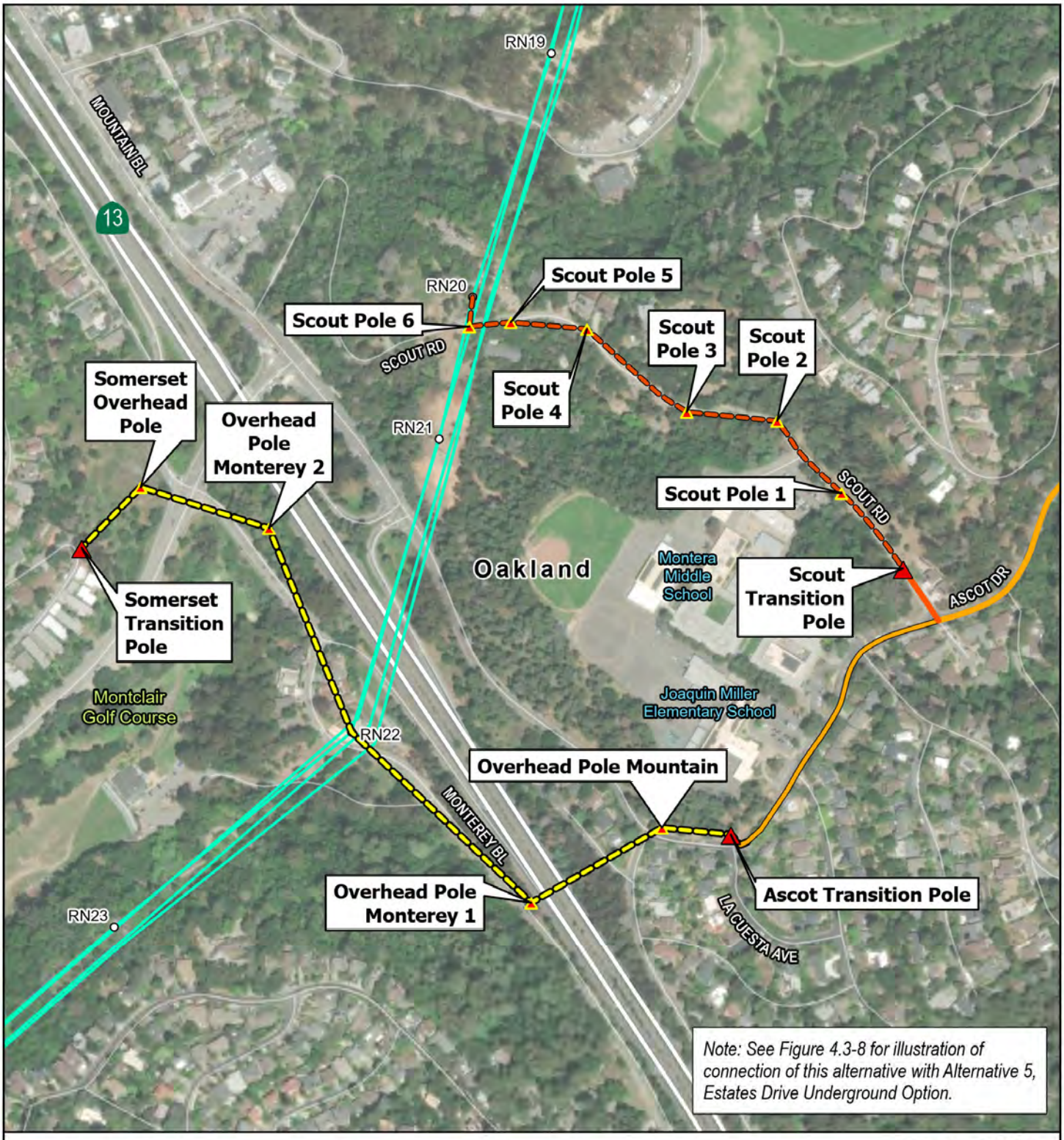
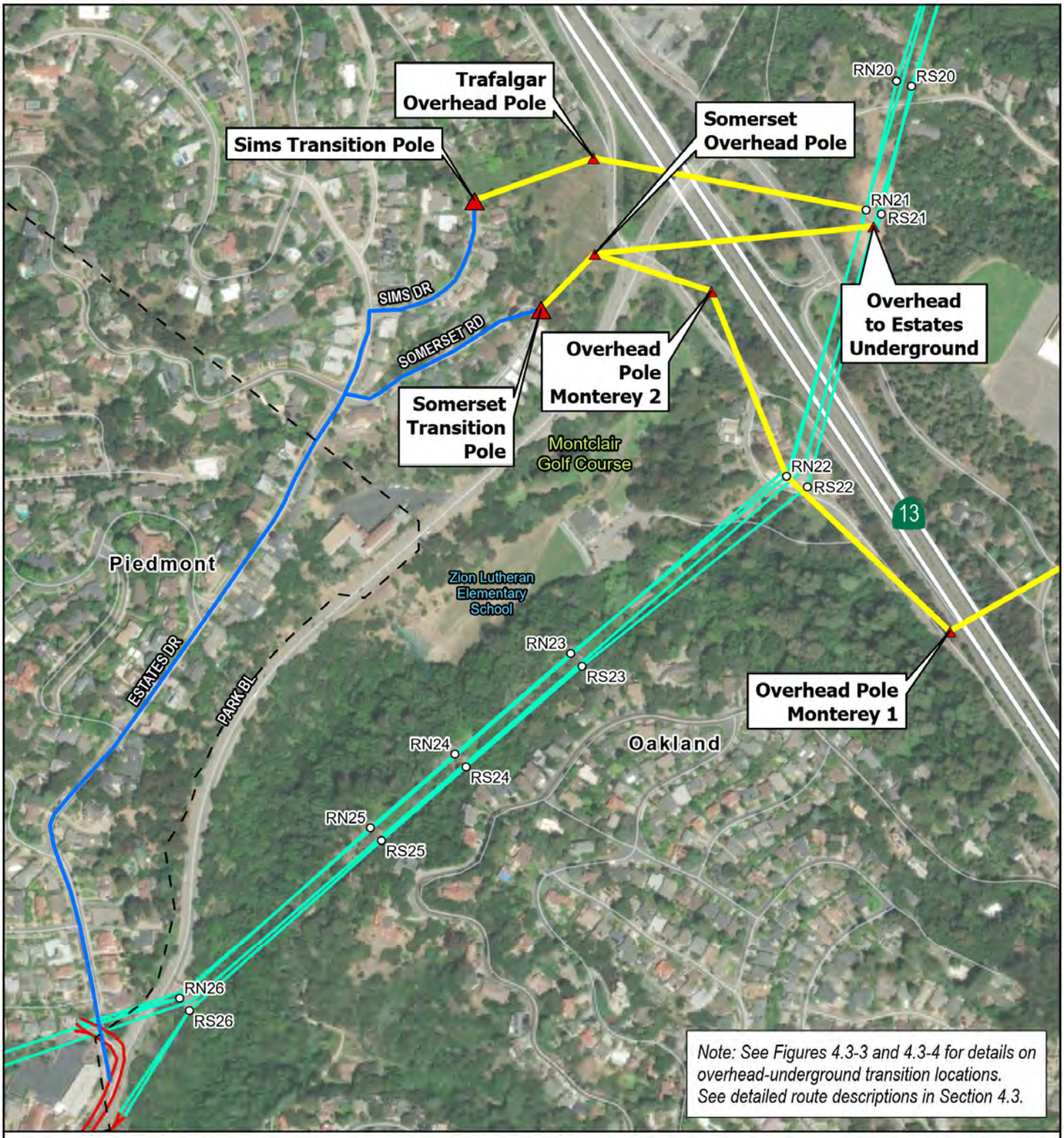
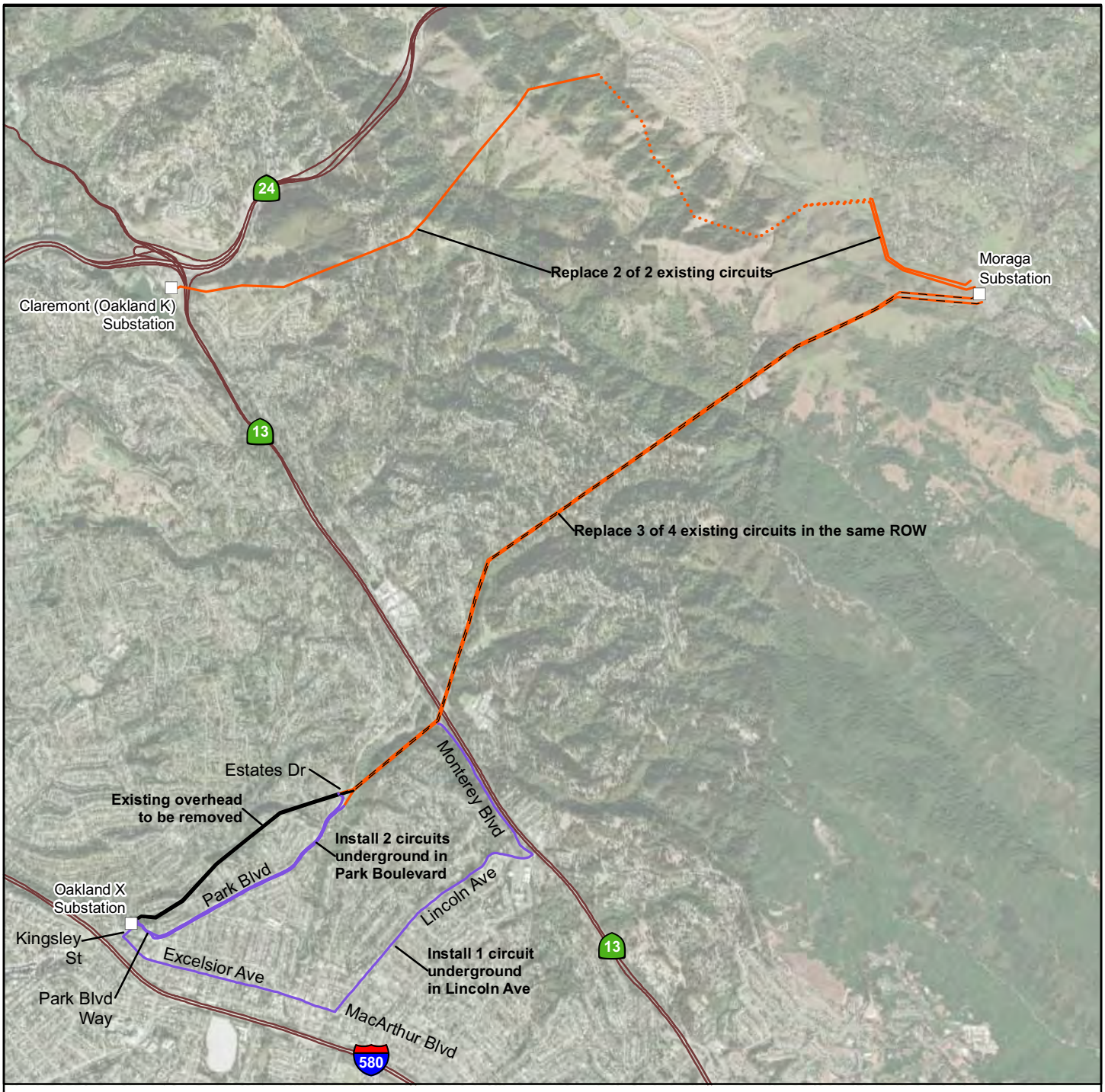


Figure 4.3-7B.
Skyline-Ascot Underground Alternative Options


Trafalgar Overhead Pole
Sims Transition Pole
Somerset Overhead Pole
RN20
RS20
RN21
RS21
Overhead to Estates Underground
SIMS DR
SOMERSET RD
Overhead Pole Monterey 2
Somerset Transition Pole
Montclair Golf Course
RN22
RS22
13
Piedmont
Zion Lutheran Elementary School
RN23
RS23
ESTATES DR
PARK BL
Overhead Pole Monterey 1
Oakland
RN24
RS24
RN25
RS25
RN26
RS26
Note: See Figures 4.3-3 and 4.3-4 for details on overhead-underground transition locations. See detailed route descriptions in Section 4.3.
Alternative 5: Estates Drive Underground Alternative
Overhead Line
Transition Pole
Overhead Pole
Proposed Pole
Proposed Project Overhead
Proposed Project Underground
Municipal Boundaries
Figure 4.3-8.
Alternative 5:
Estates Drive Underground Alternative
N
500
0
500
Feet
Projection: NAD83 UTM Zone 10N
Sources: PG&E, 2025; Esri, 2023.



Source: PG&E

Substation

Existing Overhead Route

Alternative A: Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground

Overhead Reconductor

Existing Overhead to be Removed

Underground

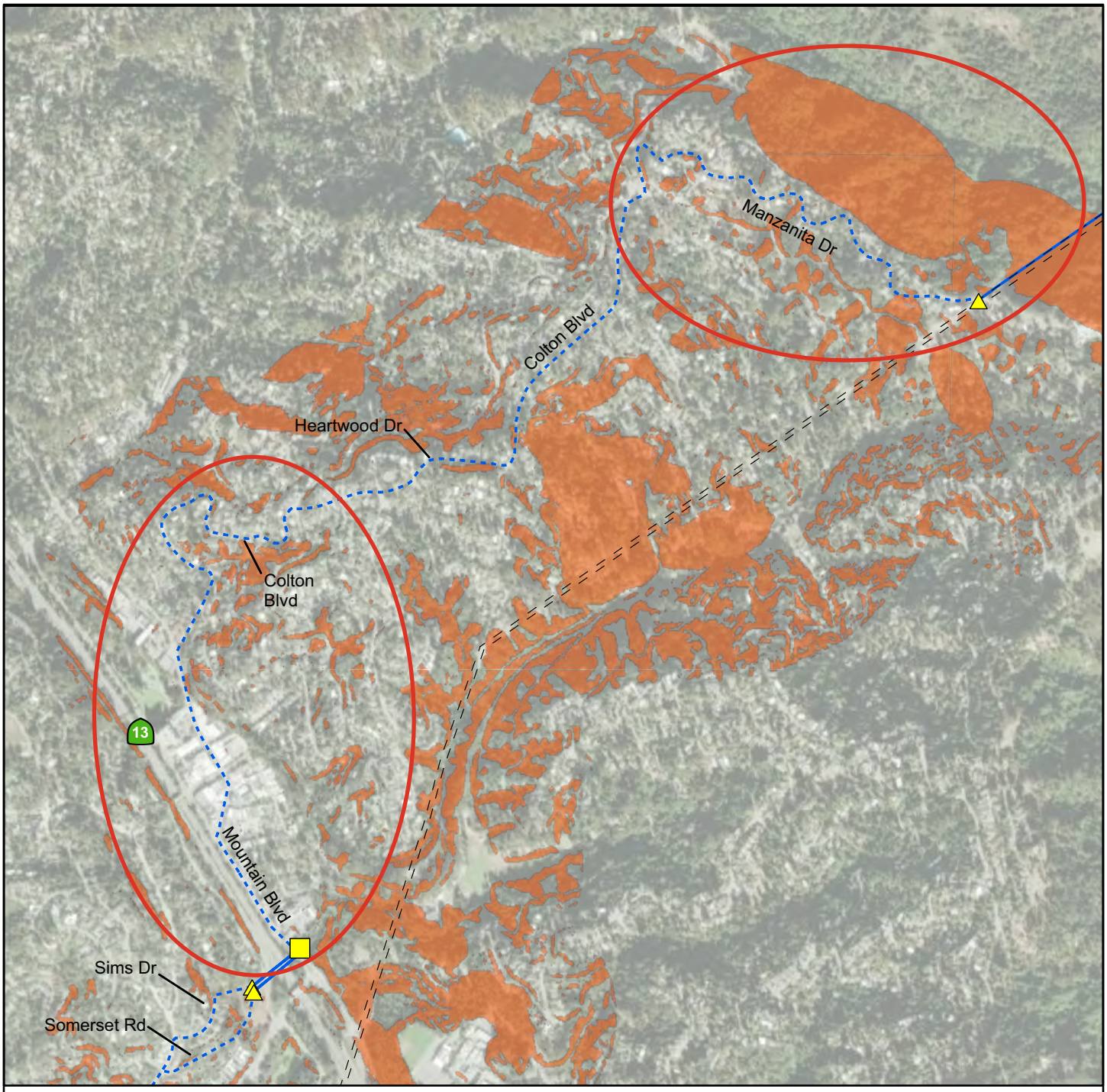
Overhead (no work)

0 0.5 1 Miles

N

Figure 4.4-1. Alternatives Eliminated

PG&E Alternative A: Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground



Source: PG&E

- Substation
- Existing Overhead Route
- Locations with greater than 50% probability of underground duct bank failure due to landslide potential (PG&E 2024)
- Portion of Alternative Eliminated

Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground

- Overhead
- Underground
- Transition Station (approximate location)
- Transition Poles

0 0.25 0.5
Miles

N

Figure 4.4-2

Alternative B: Manzanita Drive-Colton Boulevard-Estates Drive Underground - Central Section

Source: PG&E

Substation

Existing Overhead Route

Alternative D: All Overhead Replacement in Existing Alignment

Overhead

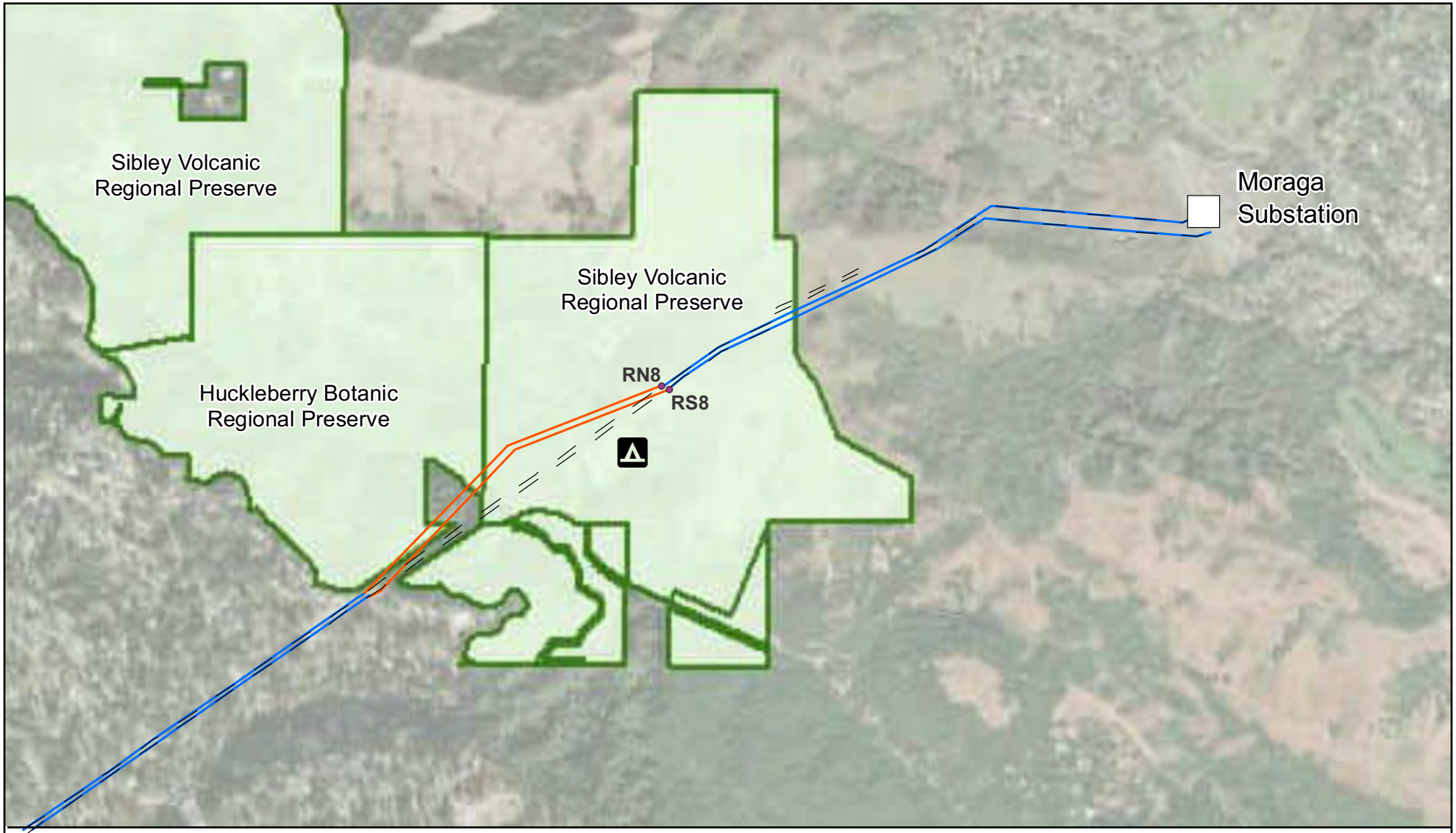
0 0.5 1

Miles

N

Figure 4.4-3. Alternatives Eliminated

Alternative D: All Overhead Replacement in Existing Alignment



Source: PG&E

Substation

Existing Overhead Route

East Bay Regional Park District (EBRPD): Huckleberry Botanic Regional Preserve and Sibley Volcanic Regional Preserve

Planned Campground

Alternative E: Proposed Project with Campground Overhead Option

Overhead - Campground

Overhead

RS8/RN8 Proposed Power Line Pole

0 0.25 0.5

Miles

N

Figure 4.4-4. Alternatives Eliminated

PG&E Alternative E: Proposed Project with Campground Overhead Option

Source: PG&E

Substation

Existing Overhead Route

Alternative F: Conceptual South Overhead Alignment

Overhead

Underground

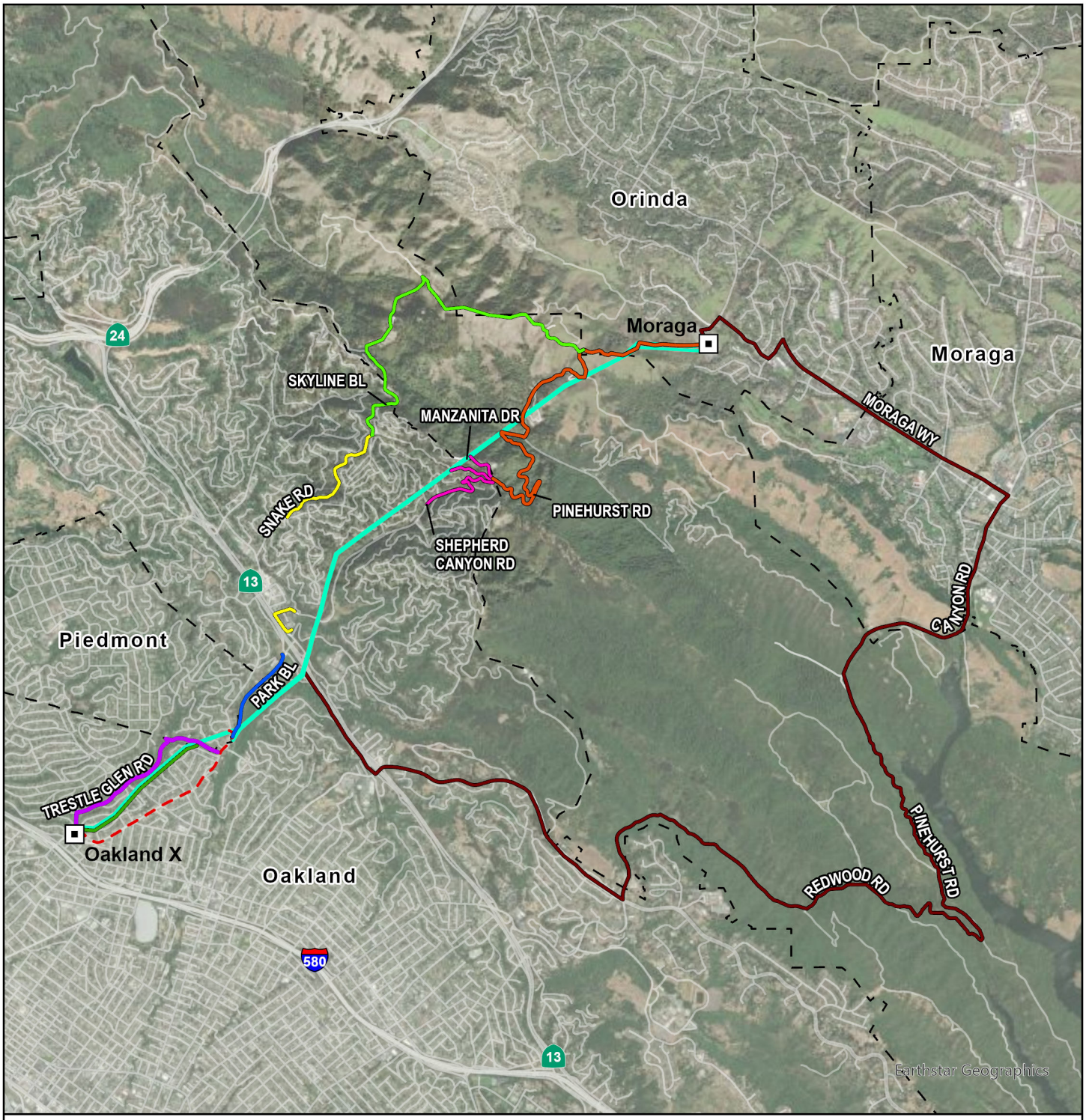
0 0.5 1

Miles

N

Figure 4.4-5. Alternatives Eliminated

PG&E Alternative F: Conceptual South Overhead Alignment



Alternatives Eliminated

- Snake Road Underground
- Redwood Canyon Underground
- Park Boulevard Underground between SR-13 and Estates Drive
- Shepherd Canyon Underground Alternative East of Saroni Drive
- Pinehurst Underground
- Trestle Glen Road Underground
- Watertank Underground
- Western Overhead Replacement

- Substation
- Proposed Project Overhead
- Proposed Project Underground
- Municipal Boundaries

Figure 4.4-6
Alternatives Eliminated

N

5,000 0 5,000 Feet

Projection: NAD83 UTM Zone 10N
Sources: PG&E, 2025; Esri, 2023.

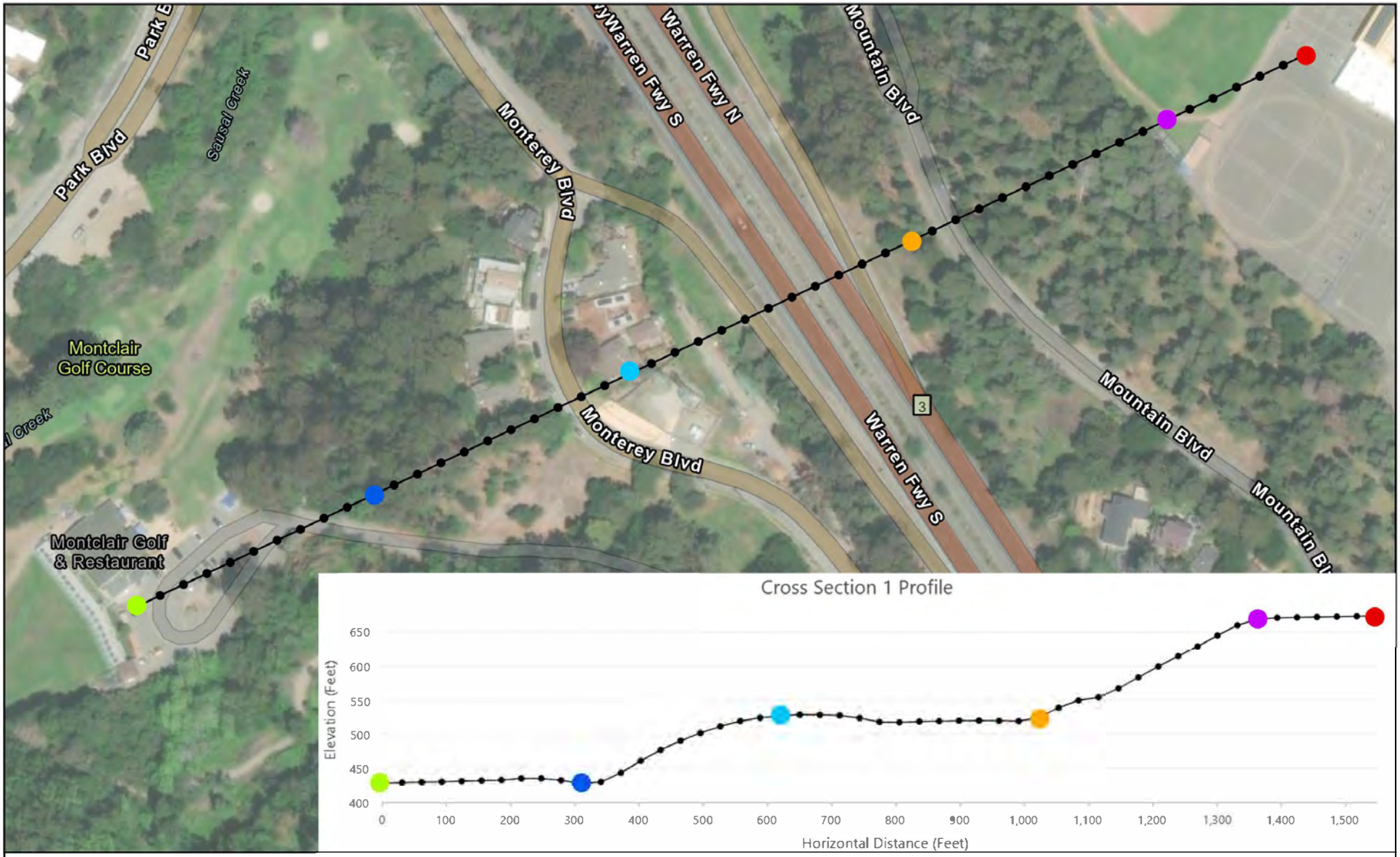
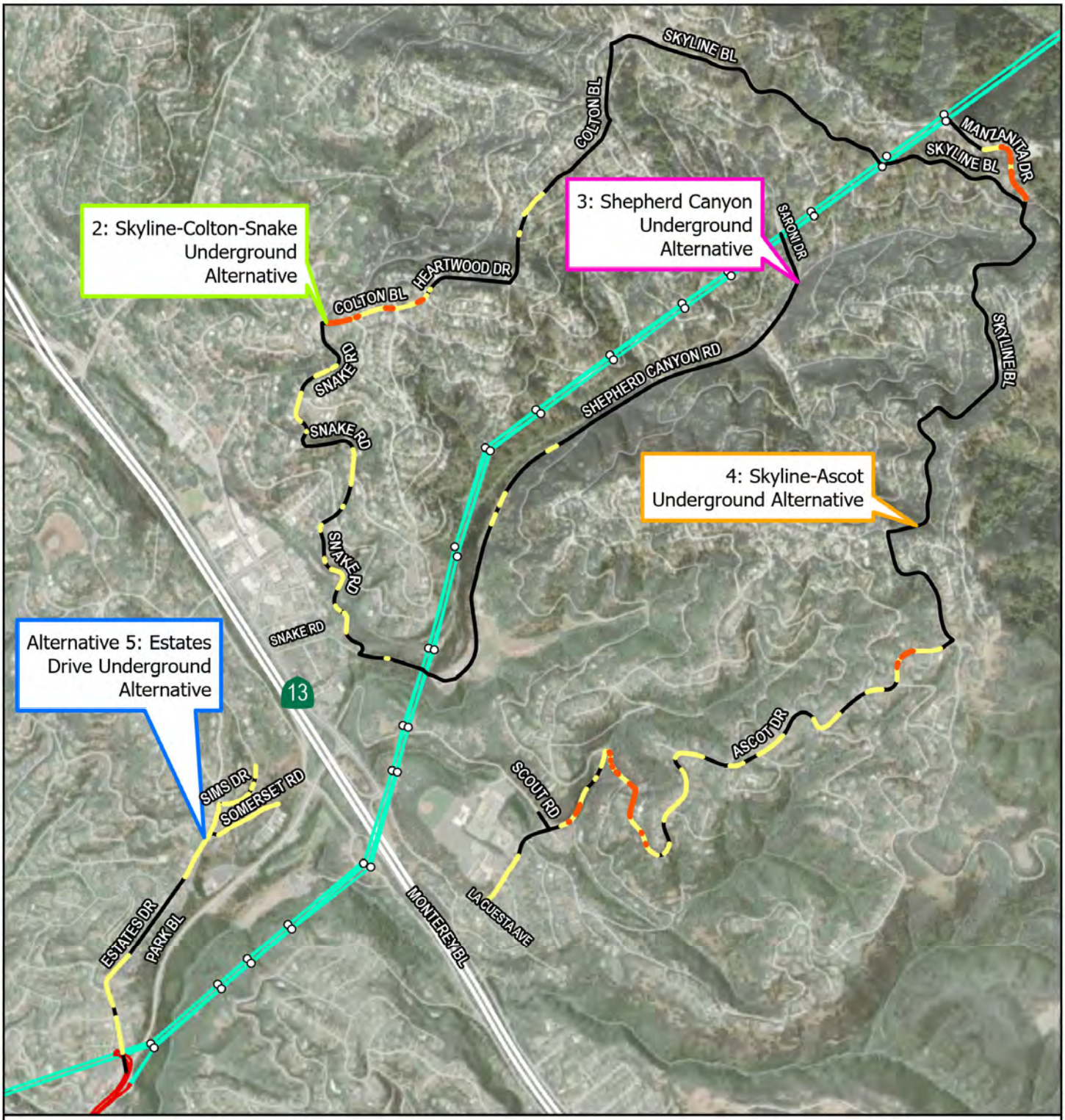


Figure 4.4-7
Cross Section 1 Profile: Underground Crossing of Hayward Fault



Proposed Pole
Proposed Project Overhead
Proposed Project Underground

Slope (Percent Rise)
Modeled on 1/9th Arc DEM
0-10%
10-15%
15-20%

Figure 4.5-1
Slope of Underground Alternatives

N

500 0 1,000
Feet

Projection: NAD83 UTM Zone 10N
Sources: Aspen, 2025; PG&E, 2025; Esri, 2023..

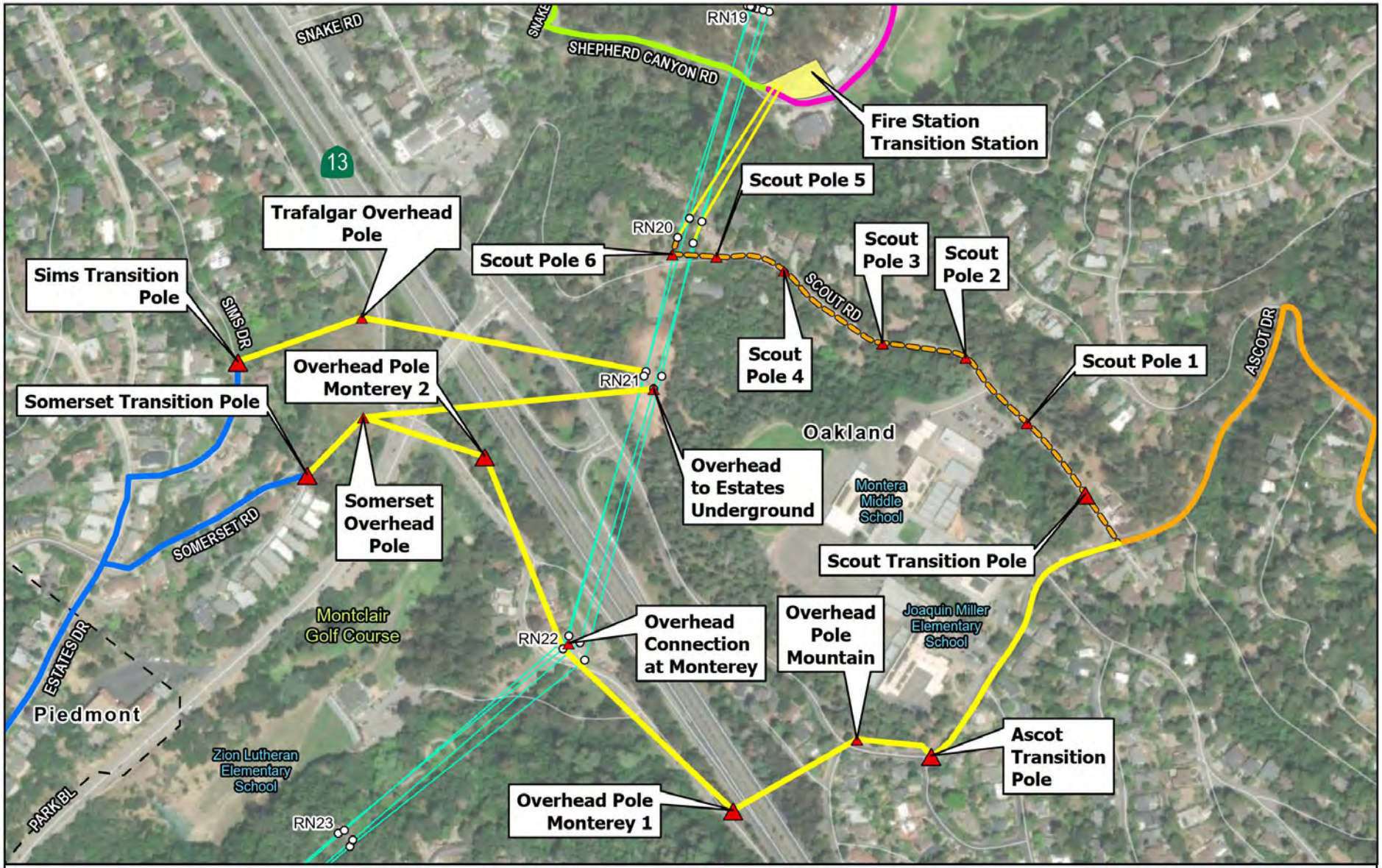
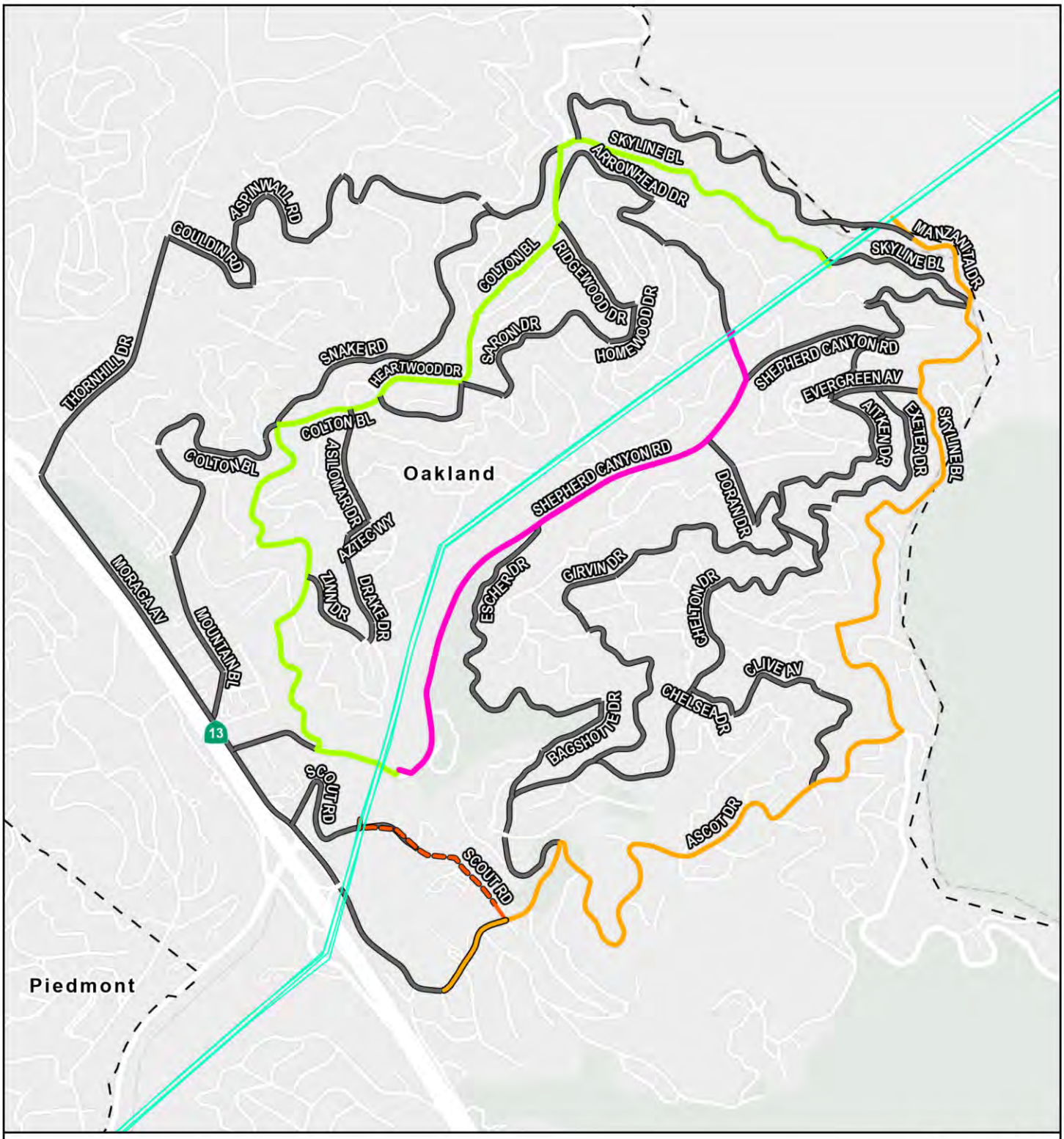


Figure 4.5-2
Overhead Crossings of SR-13: Alternatives



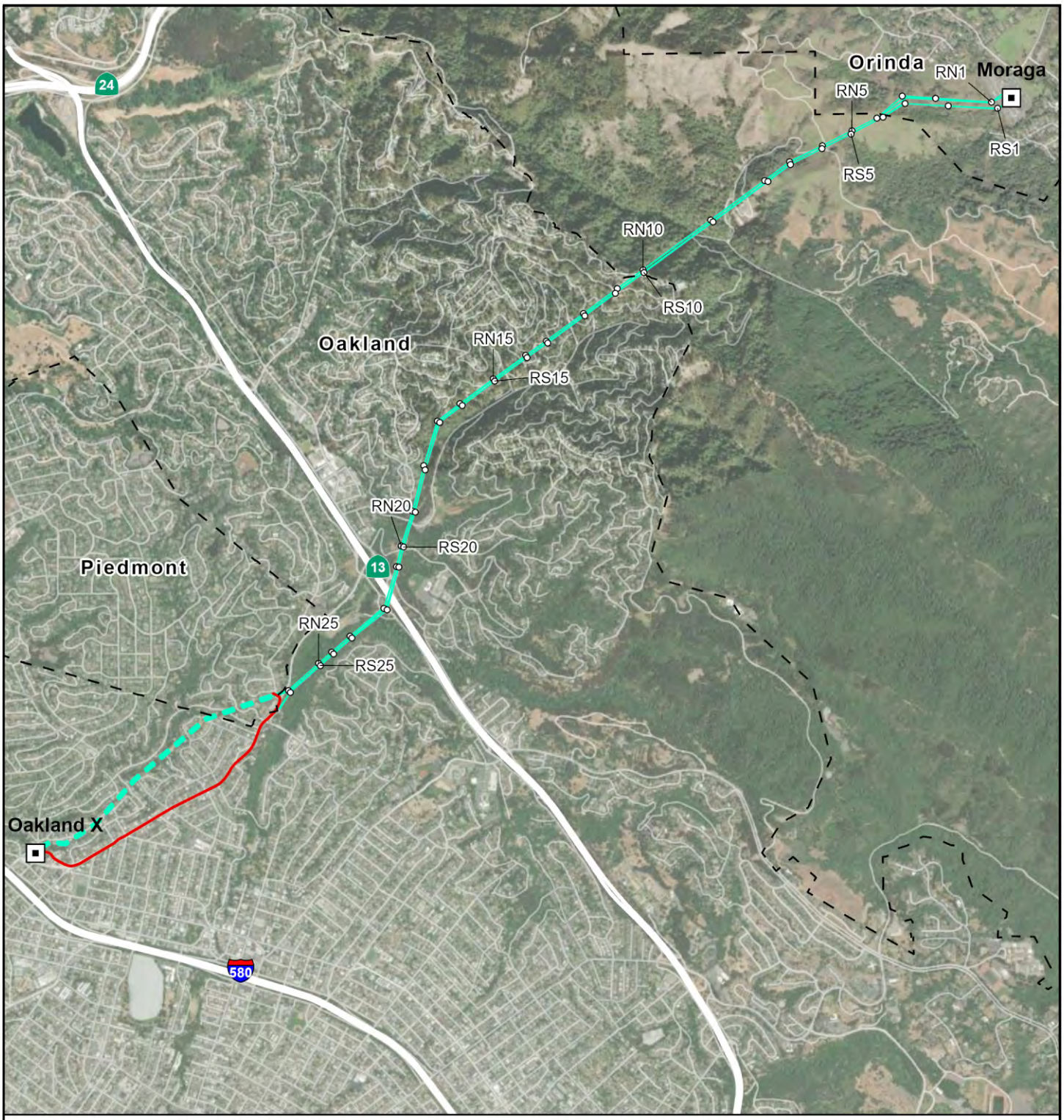
Potential Evacuation Routes
Alternative 2: Skyline-Colton-Snake Underground Alternative
Alternative 3: Shepherd Canyon Underground Alternative
Alternative 4: Skyline-Ascot Underground Alternative
Alternative 4: Option 1 Overhead Connection
Alternative 4: Option 1 Underground
Alternative 4: Option 2 Underground
Proposed Project Overhead
Municipal Boundaries

Figure 4.5-3.
Potential Evacuation Routes During Construction of Underground Alternatives

N

1,000 0 1,000 Feet

Projection: NAD83 UTM Zone 10N
Sources: PG&E, 2025; Esri, 2025.



Proposed Project: Four Existing Overhead 115 kV Lines to be Rebuilt in Same Overhead Configuration

Proposed Project: Four Existing Overhead 115 kV Lines to be Removed

Proposed Project: Four New Underground 115 kV Lines

Proposed Pole

Substation

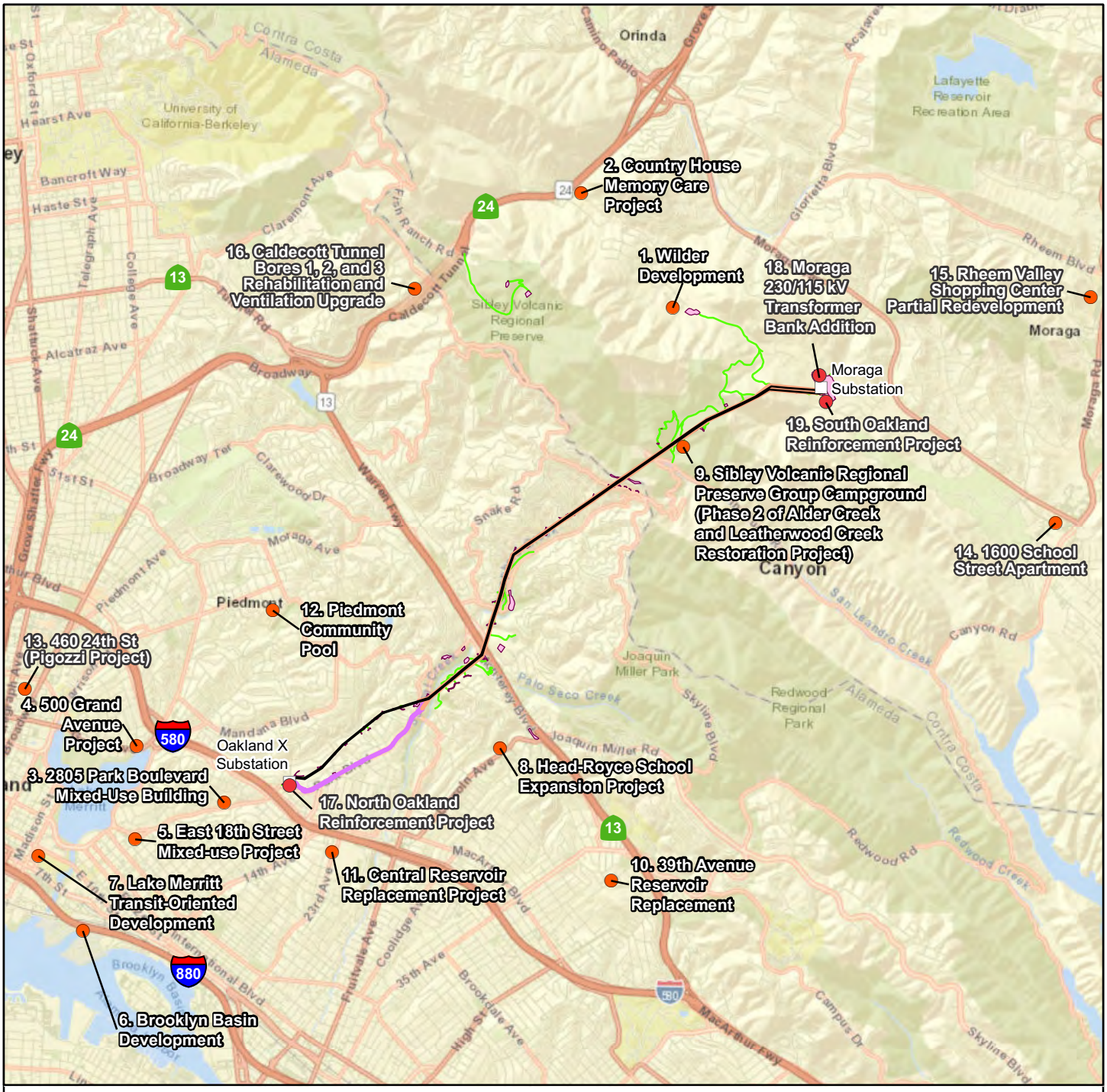
Municipal Boundaries

Figure 4.8-1
Environmentally Superior Alternative

N

0 1 Miles

Projection: NAD83 UTM Zone 10N
Sources: PG&E, 2025; Esri, 2023.



Source: PG&E

Legend

- Cumulative Project Location
- Substation
- Project Access
- Temporary Work Area

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed

N

0 1 2

Miles

Figure 5-1

Cumulative Projects

Appendix B

PROJECT DESCRIPTION SUPPORTING TABLES

Table 2.1-1. Double-Circuit Line Structure Components Upgrade, Approximate Metrics

Existing Number	New Number	Existing Type	Proposed Structure, Foundation[a] Type	Existing Height (feet)	Proposed Height (feet)	Structure Height Change (feet)	EMF Residential Mitigation (feet)	Adjacent Removal Increased Structure Height	Structure Elevation Change (feet)	Net Height Change[b] (feet)	Net Percent Height Change[c]
Circuits 1 & 2 Northern Line											
EN1	RN1	LST CH-DE	LST 2D-DE, 4-CP	84	88	4	None	No	2	5	6%
EN2	RN2	LST AH	LST 2B-SUSP, 4-CP	94	112	18	None	No	0	18	19%
EN3	RN3	LST CH-DE	LST 2D-DE, 4-CP	102	93	-9	None	No	-16	-24	-24%
EN4	RN4	LST 2D-DE	Use Existing	111	-	-	-	-	-	-	-
EN5	RN5	LST 2B-SUSP	Use Existing	90	-	-	-	-	-	-	-
EN6	RN6	LST 2D-DE	Use Existing	80	-	-	-	-	-	-	-
EN7	RN7	LST SP ANG DE	LST 2D-DE, 4-CP	73	80	7	n/a	No	3	10	13%
EN8	RN8	LST 37 DEG ANG	TSP V2S-G, CP	75	86	11	n/a	No	-8	4	5%
EN9	RN9	LST ANCHOR	LST 2D-DE, MP	70	79	10	n/a	No	2	12	17%
EN10	RN10	LST SP. ANG.	TSP V2D-G, CP	74	136	62	10	Yes	-4	59	80%
EN11	-	TSP V2D-G	Remove	61	-	-	-	-	-	-	-
EN11A	-	LSP	Remove	71	-	-	-	-	-	-	-
EN12	RN11	LST STD	LSP-SUSP, MP	72	133	61	10	Yes	4	64	89%
EN13	RN12	LST TRANSP DE	TSP V2D-G, MP	67	81	14	10	No	-5	9	14%
EN14	RN13	LST STD	TSP V2S-G, MP	74	86	12	10	No	-2	10	13%
EN15	RN14	LST STD	TSP V2S-G, MP	71	86	15	10	No	2	17	24%
EN16	RN15	LST STD	LSP-DE, MP	73	98	25	10	No	-6	19	26%
EN17	RN16	LST STD	LSP-SUSP, MP	72	93	21	10	Yes	-4	18	25%
EN17A	-	LSP	Remove	75	-	-	-	-	-	-	-
EN18	RN17	LST SP ANG DE	TSP V2D-G, MP	72	112	41	10	Yes	14	54	29%
EN19	RN18	TSP V2D-G	Use Existing[d]	134	168	34	10	Yes	0	34	25%
EN20	-	LSP	Remove	77	-	-	-	-	-	-	-
EN21	RN19	LST STD	LSP-SUSP, MP	98	133	35	10	Yes	1	36	36%
EN22	RN20	LST STD	TSP V2D-G, MP	75	81	6	10	No	7	12	16%
EN23	RN21	LST STD	TSP V2D-G, CP	72	91	19	10	No	1	20	27%

Existing Number	New Number	Existing Type	Proposed Structure, Foundation[a] Type	Existing Height (feet)	Proposed Height (feet)	Structure Height Change (feet)	EMF Residential Mitigation (feet)	Adjacent Removal Increased Structure Height	Structure Elevation Change (feet)	Net Height Change[b] (feet)	Net Percent Height Change[c]
EN24	RN22	LST 37 DEG ANG	TSP V2D-G-C, CP	77	96	19	10	No	-1	19	11%
EN25	RN23	LST STD	LSP-SUSP, MP	78	93	15	10	No	8	23	30%
EN26	RN24	LST STD	LSP-SUSP, MP	78	83	5	10	No	2	7	9%
EN27	RN25	LST STD	LSP-SUSP, MP	77	83	6	10	No	2	8	10%
EN28	RN26	LST SP ANG DE	TSP V2D-G, MP	122	122	0	10	No	-4	-4	-3%
EN29[e]	TN27A	LST STD	TSP SC-RISER, CP	76	96	20	10	No	2	22	29%
ES31[f]	TN27B	LST STD	TSP SC-RISER, CP	75	96	20	10	No	1	23	27%
EN30	NA	LST STD	Remove	74	-	-	-	-	-	-74	-
EN31	NA	LST SP ANG DE	Remove	85	-	-	-	-	-	-85	-
EN32	NA	LST STD	Remove	74	-	-	-	-	-	-74	-
EN33	NA	LST STD	Remove	71	-	-	-	-	-	-71	-
EN34	NA	LST 37 DEG ANG DE	Remove	73	-	-	-	-	-	-73	-
EN35	NA	LST 37 DEG ANG DE	Remove	72	-	-	-	-	-	-72	-
EN36	NA	LST 37 DEG ANG DE	Remove	71	-	-	-	-	-	-71	-
EN37	NA	LST 37 DEG ANG DE	Remove	72	-	-	-	-	-	-72	-
-	TN28	-	Double-Circuit H-Frame TSP, CP	-	63	-	-	-	-	63	-
	TN29	-	Double-Circuit H-Frame TSP, CP	-	68	-	-	-	-	68	-
Circuits 3 & 4 Southern Line											
ES1	RS1	LST 2C-DE	LST 2D-DE, 4-CP	85	90	5	No	No	0	5	6%
ES2	RS2	LST 2B-SUSP	LST 2B-SUSP, 4-CP	111	110	-1	No	No	-7	-8	-7%
ES3	RS3	LST 2C-DE	LST 2D-DE, 4-CP	80	85	5	No	No	6	11	14%
ES5[g]	RS4	LST 2D-DE	Use Existing	114	-	-	-	-	-	-	-
ES6	RS5	LST 2B-SUSP	Use Existing	112	-	-	-	-	-	-	-
ES7	RS6	LST 2D-DE	Use Existing	82	-	-	-	-	-	-	-
ES8	RS7	LST 37 DEG ANG	LST 2D-DE, 4-CP	74	78	4	No	No	-1	3	4%
ES8A&B	-	3HP	Remove	53	-	-	-	-	-	-	-
ES9	RS8	LST STD	TSP V2S-G, CP	72	101	29	No	Yes	2	31	42%

Existing Number	New Number	Existing Type	Proposed Structure, Foundation[a] Type	Existing Height (feet)	Proposed Height (feet)	Structure Height Change (feet)	EMF Residential Mitigation (feet)	Adjacent Removal Increased Structure Height	Structure Elevation Change (feet)	Net Height Change[b] (feet)	Net Percent Height Change[c]
ES10	RS9	LST STD	LST 2D-DE, MP	71	77	6	No	No	2	8	11%
ES11	RS10	LST STD	TSP V2D-G, CP	75	126	51	10	Yes	-1	50	67%
ES12	-	LST SP ANG DE	Remove	73	-	-	-	-	-	-	-
ES13[g]	RS11	LSP	LSP-SUSP, MP	77	118	42	10	Yes	-7	35	45%
ES15	RS12	STD-DE	TSP V2D-G, MP	68	81	13	10	No	2	15	21%
ES16	RS13	LST STD	TSP V2S-G, MP	75	91	16	10	No	3	20	26%
ES17	RS14	LST STD	TSP V2S-G, MP	75	86	11	10	No	3	14	18%
ES18	RS15	LST STD	LSP-SUSP, MP	73	98	25	10	No	1	26	36%
ES19	RS16	LST STD	LSP-SUSP, MP	73	93	20	10	No	3	23	32%
ES20	RS17	LST SP ANG DE	TSP V2D-G, MP	72	91	19	10	No	6	26	6%
ES21	RS18	TSP V2D-G	Use Existing[g]	109	158	50	10	Yes	0	49	46%
ES22	-	LSP	Remove	72	-	-	-	-	-	-	-
ES23	RS19	LST STD	LSP-SUSP, MP	100	118	19	10	Yes	-1	18	18%
ES24	RS20	LST STD	TSP V2D-G, MP	75	81	6	10	No	6	12	16%
ES25	RS21	LST STD	TSP V2D-G, CP	75	86	11	10	No	1	12	16%
ES26[e]	RS22	LST 37 DEG ANG DE	TSP V2D-G, CP	84	116	32	10	No	4	37	44%
ES27	RS23	LST STD	LSP-SUSP, MP	78	93	16	10	No	-1	15	19%
ES28	RS24	LST STD	LSP-SUSP, MP	78	83	5	10	No	-2	3	4%
ES29	RS25	LST STD	LSP-SUSP, MP	77	88	11	10	No	-3	8	10%
ES30	RS26	LST SP ANG DE	TSP V2D-G, MP	142	92	-50	10	No	6	-44	-31%
ES31	TN27B[h]	LST STD	Refer to Table 2.3-4	75	-	-	-	-	-	-	-
-	TS27A	LST STD	TSP SC-RISER, CP	-	81	New	10	No	-	84	38%
-	TS27B	LST STD	TSP SC-RISER, CP	-	81	New	10	No	-	81	38%
ES32	NA	LST STD	Remove	76	-	-	-		-	-	-
ES33	NA	LST SP ANG DE	Remove	84	-	-	-		-	-	-
ES34	NA	LST STD	Remove	71.5	-	-	-		-	-	-
ES35	NA	LST SP ANG DE	Remove	84	-	-	-		-	-	-

Existing Number	New Number	Existing Type	Proposed Structure, Foundation[a] Type	Existing Height (feet)	Proposed Height (feet)	Structure Height Change (feet)	EMF Residential Mitigation (feet)	Adjacent Removal Increased Structure Height	Structure Elevation Change (feet)	Net Height Change[b] (feet)	Net Percent Height Change[c]
ES36	NA	LST SP ANG DE	Remove	75	-	-	-		-	-	-
ES37	NA	LST SP ANG DE	Remove	71	-	-	-		-	-	-
ES38	NA	LST SP ANG DE	Remove	74	-	-	-		-	-	-
-	TS28	-	Vertical Double-Circuit TSP, CP	-	66	New	10	No	-	66	

[a] Foundation types: CP = Concrete Pier - Pole; 4-CP = Concrete Pier - Tower; MP = Micropile

[b] Net Height Change calculates the difference between the elevation and height of the existing structure and the elevation and height of the proposed structure. It is determined by adding the change in structure height and the change in structure elevation. Structure heights, elevations, and net changes shown in the table have been rounded to the nearest whole number. As a result, the number shown in the net change column may be 1 foot more or less than the sum of the changes in structure height and elevation show in each row.

[c] Net Percent Height Change calculates the difference between both the proposed structure height with any elevation change and existing structure height. The difference is divided by the existing structure height.

[d] Existing foundation and lower portion of structure to remain in place with modification to upper portion. Top section of steel pole to be replaced to increase height and add OPGW/shield wire crossarms.

[e] Existing AT&T antennas would be relocated by AT&T.

[f] Structure TS27B would effectively replace ES31 in location but would support Circuit 2 instead of Circuits 3 and 4. ES31 is also listed as part of the southern line.

[g] There is no existing structure ES4 or existing structure ES14.

[h] TN27B is a structure support for Circuit 2.

2B = tangent structure type
2D = two double circuits on a D type tower
AH = a type of structure identified by AH
ANCHOR = a structure with more anchoring function in its foundation
ANG = angle
CH = a type of structure identified by CH
D or DE = deadend
DEG = degree
EN = existing structure northern line
ES = existing structure southern line
HP = horizontal post
LDSP = light duty steel pole
LSP = lattice steel pole
LST = lattice steel tower
NA = not applicable
RN = replaced structure northern line
RS = replaced structure southern line
SC = single circuit
SP = special
STD = standard
SUSP = suspension
TN = new transition (riser) structure northern line
TRANSP = transposition
TS = new transition (riser) structure southern line
TSP = tubular steel pole
V2D-G = vertically framed, double circuit, deadend steel pole with gull arms

Table 2.2-1. Existing, Modified and New Land Rights or Easements, Approximate Dimensions

Project Mile Points	Assessor Parcel Number(s) (APN)	Existing Length x Width (Feet)	Expected New or Modified Easement Length x Width (Feet) Description
Existing Alignment			
0.00-0.36	271-010-004-07	PG&E parcel	No change
0.36-0.38	273-290-004-4 273-290-005-1	106 x 40 – each line 106 x 40 – each line	Modified: 106 x 160 – both lines
0.36-0.50	273-290-004-5 273-290-005-1	739 x 100	Modified: 739 x 92
0.50-0.77	257-010-007-9	1426 x 75	Modified: 1426 x 128
0.77-1.00	257-010-006-1	1214 x 100	Modified: 1224 x 115
1.00-1.07	257-010-006-1	370 x 75	Modified: 370 x 244
1.07-1.38	257-010-006-1	1637 x 100	Modified: 1637 x 340
1.38-1.43	State of California	264 x 100	Modified: 264 x 86 (Pinehurst Road crossing)
1.43-1.63	257-020-005	PG&E	No change
1.63-1.65	Contra Costa County	106 x 60	Modified: 106 x 86 (Manzanita Drive crossing)
1.64-1.65	048E-7320-085-01	53 x 60	Modified: 53 x 89
1.65-1.74	048E-7320-087	PG&E	no change
1.74-1.75	City of Oakland	53 x 60	Modified: 53 x 86 (Skyline Boulevard crossing)
1.75-1.81	048E-7321-048-03	317 x metes & bounds	Modified: 317 x 86
1.81-1.82	City of Oakland	53 x 60	Modified: 53 x 134 (Arrowhead Drive crossing)
1.82-1.94	048E-7325-095 048E-7325-096	PG&E	no change
1.90-1.95	City of Oakland	211 x 60	Modified: 211 x 144 (Pathway from East Circle to Gunn Drive and Gunn Drive crossing)
1.95-1.96	048E-7326-029	PG&E	no change
1.96-1.97	City of Oakland	53 x 60	Modified: 53 x 144 (Saroni Drive crossing)
1.97-2.06	048E-7328-6-1 048E-7328-54 048E-7328-51 048E-7348-13 048E-7328-12 048E-7328-8-1	475 x 60	Modified: 475 x 144
2.08	City of Oakland	53 x 60	Modified: 53 x 96 (Sayre Drive crossing)
2.08	048E-7330-081	PG&E	no change
2.09	City of Oakland	53 x 60	Modified: 53 x 96 (Pathway from Azalea Lane to Sayre Drive crossing)
2.09-2.10	048E-7330-082	PG&E	no change
2.10-2.11	City of Oakland	53 x 60	Modified: 53 x 96 (Sayre Drive crossing)
2.11-2.14	048E-7328-070 048E-7325-095	PG&E	no change
2.14-2.15	City of Oakland 048E-7330-26	53 x 60	Modified: 53 x 96 (Sayre Drive crossing)
2.15-2.17	048E-7330-083-03	Metes & Bounds	Modified: 105 x 96
2.17-2.28	048E-7330-083-02	422 x 110	Modified: 580 x 141

Project Mile Points	Assessor Parcel Number(s) (APN)	Existing Length x Width (Feet)	Expected New or Modified Easement Length x Width (Feet) Description
2.21-2.28	048E-7328-068 048E-7328-069	PG&E	no change
2.28-2.29	City of Oakland	53 x 60	Modified: 53 x 141 (Pathway from Sayre Drive to Paso Robles Drive crossing)
2.28-2.29	City of Oakland	53 x 60	Modified: 53 x 141 (Paso Robles Drive crossing)
2.29-2.31	048E-7348-077	PG&E	no change
2.31-2.32	City of Oakland	53 x 60	Modified: 53 x 141 (Balboa Drive crossing)
2.32-2.38	048E-7347-042	PG&E	317 x 141
2.35-2.44	048E-7348-034 048E-7348-039 048E-7348-042-4 048E-7348-043 048E-7347-012	475 x 60	Modified: 475 x 143
2.45-2.46	City of Oakland	53 x 60	Modified: 53 x 141 (Balboa Drive crossing)
2.40-2.42	048E-7348-071	Metes & Bounds	Modified: 106 x 143
2.42-2.48	City of Oakland 048E-7348-090	317 x 60	Modified: 317 x 143 (West Circle crossing and non-franchise parcel)
2.48-2.72	048E-7348-075	PG&E	No change
2.70-2.88	City of Oakland	950 x 60	Modified: 950 x 100 (Montclair Railroad Trail)
2.85-2.87	048E-7348-074	106 x 15	Modified: 106 x 43
2.88-2.92	048E-7348-072-1	211 x lot description	Modified: 211 x 90
2.87-2.88	048E-7348-063	53 x 60	Modified: 53 x 60 with additional 325 square feet
2.70-2.91	048E-7348-067 048E-7350-008	1109 x up to 60 or 132 with 78 west of, and 54 east of, centerline	Modified: Existing easement with an additional 12 feet
2.84-2.85	048E-7348-062	53 x at least 60	Modified: 53 x 90
2.83-2.84	048E-7348-061	53 x at least 60	Modified: 53 x at least 60
2.81-2.82	048E-7348-059	53 x at least 60	Modified: 53 x at least 60
2.80-2.81	048E-7348-058-02	53 x at least 60	Modified: 53 x at least 60
2.79-2.80	048E-7348-057-01	53 x at least 60	Modified: 53 x at least 60
2.78-2.79	048E-7348-055	53 x at least 60	Modified: 53 x at least 60
2.74-2.75	048E-7348-053	53 x at least 60	Modified: 53 x at least 60
2.73-2.74	048E-7348-052	53 x at least 60	Modified: 53 x at least 60
2.71-2.73	048E-7348-050 048E-7348-051	106 x at least 60	Modified: 53 x at least 60
2.81-2.82	048E-7348-060	53 x at least 60	Modified: 53 x at least 60
2.91-2.97	City of Oakland	317 x 60	Modified: 317 x 122 (Montclair Railroad Trail crossing)
2.97-3.01	048E-7350-011	PG&E property	No change
3.01-3.02	City of Oakland	53 x 60	Modified: 53 x 122 (Shepherd Canyon Road crossing)

Project Mile Points	Assessor Parcel Number(s) (APN)	Existing Length x Width (Feet)	Expected New or Modified Easement Length x Width (Feet) Description
3.02-3.17	048D-7244-012-3 048D-7244-30 048D-7244-12-4 City of Oakland 048D-7244-29	792 x 60	Modified: 792 x 105 (includes Scout Road crossing)
3.17-3.24	048D-7234-013	PG&E	No change
3.24-3.35	City of Oakland Caltrans	581 x 60	Modified: 581 x 134 Mountain Blvd and SR 13 crossings
3.35-3.37	029A-1330-030	PG&E	No change
3.37-3.38	City of Oakland	53 x 60	Modified: 53 x 134 (Monterey Blvd crossing)
3.38-3.86	029A-1300-033	PG&E	No change
3.38-3.40	City of Oakland 029A-1330-027-06	106 x Metes & Bounds	Modified: 106 x 79 (Park Boulevard crossing)
3.91-3.93	051-4812-017	PG&E	No change
3.86-3.91	Multiple parcels	264 x 60	No change: overhead removal proposed
3.91-3.93	Multiple parcels 051-4812-011-10	106 x 60	No change: overhead removal proposed
3.93-4.17	Multiple parcels	1267 x 60	No change: overhead removal proposed
4.17-4.28	024-0607-052 024-0607-053	PG&E	No change: overhead removal proposed
4.28-4.30	Multiple parcels	106 x 60	No change: overhead removal proposed
4.30-4.31	024-0608-020-01	PG&E	No change: overhead removal proposed
4.31-4.32	024-0608-061-01	53 x 60	No change: overhead removal proposed
4.32-4.38	024-0608-020-01	PG&E	No change: overhead removal proposed
4.38-4.53	Multiple parcels	792 x 60	No change: overhead removal proposed
4.53-4.54	024-0608-055	PG&E	No change: overhead removal proposed
4.54-5.00	Multiple parcels	2429 x 60	No change: overhead removal proposed
5.00-5.04	Multiple parcels	211 x 50	No change: overhead removal proposed
New Alignment – New Span			
Near 3.38 RN26-TS27A & 27B	029A-1330-12-5	New	New: 100 x 70
	029A-1330-013-01	New	New: 430 x 100

Table 2.3-5. Estimated Vegetation Management including Tree Trimming or Removal

Common Name, Species (sp.), Native or Non-Native if known	General Project Location and Work Area or Access Type	Expected Activity	Approximate Quantity, dbh[a]
Grass			
Grasses (unknown sp.)	EN1 Work Area	Mow	Not applicable
Grasses (unknown sp.)	ES1 Work Area	Mow	Not applicable
Grasses (unknown sp.)	EN3 Access Road	Mow	Not applicable
Grasses (unknown sp.)	ES3 Access Road	Mow	Not applicable
Grasses (unknown sp.)	EN7-ES7 Work Area	Mow	Not applicable
Brush			
Brush (unknown sp.)	EN9-ES10 Access road	Remove	1, 2 dbh
Brush (unknown sp.)	EN10-ES11 Access road	Remove	1, 2 dbh
Brush (unknown sp.)	EN15-ES17 Guard structure	Remove	1, 1 to 3 dbh
Brush (unknown sp.)	EN19-ES21 Access road	Remove	1, 1 to 3 dbh
Brush (unknown sp.)	EN19-ES21 Access road	Remove	1, 1 to 3 dbh
Brush (unknown sp.)	EN21-ES23 Foot path	Remove	1, 1 to 3 dbh
Brush (unknown sp.)	EN21 Work area	Remove	1, 1 to 3 dbh
Brush (unknown sp.)	EN23-ES25 Access road	Remove	1, 1 to 3 dbh
Brush (unknown sp.)	EN27-ES29 Work area	Remove	1, 2 dbh
Brush (unknown sp.)	EN26-ES28 Work area	Remove	1, 2 dbh
Brush (unknown sp.)	EN25-ES27 Work area	Remove	1, 2 dbh
Brush (unknown sp.)	EN28-ES30 Guard structure	Remove	1, 2 dbh
Brush (unknown sp.)	Oakland Substation parcel work area	Remove	1, 2 dbh
Brush (unknown sp.)	Underground Portion, Park Blvd center median Glenfield Ave to Hampel St	Remove	3, 2 dbh
Shrub			
Coyote Brush *(Baccharis pilularis)*	ES1-ES2 Access road	Remove	1, 1 to 4 dbh
Coyote Brush *(Baccharis pilularis)*	RS2 Work area	Remove	1, 1 to 4 dbh
Elderberry *(Sambucus* sp.*)*	RS2 Work area	Remove	1, 10 dbh
Coyote Brush *(Baccharis pilularis)*	RN2 Work area	Remove	1, 4 dbh
Coyote Brush *(Baccharis pilularis)*	EN3 Access road	Remove	1, 3 dbh
Coyote Brush *(Baccharis pilularis)*	ES3 Access road	Remove	1, 3 dbh
Beaked hazelnut *(Corylus cornuta)*	EN9-ES10 Access road	Remove	1, 12 (multistem) dbh
Toyon *(Heteromeles arbutifolia)*	EN9-ES10 Access road	Remove	1, 8 dbh
Toyon *(Heteromeles arbutifolia)*	EN27-ES29 Foot path	Remove	2, 10 dbh
Elderberry *(Sambucus* sp.*)*	ES30 Work area	Remove	1, 5 dbh
Tree			
Coast Live Oak *(Quercus agrifolia)*, Native	RS2 Work area	Remove	1, 9 dbh
Apple *(Malus pumila)*, Non-native	RS2 Work area	Remove	1, 5 dbh
California bay laurel *(Umbellularia californica)*, Native	RS2 Work area	Trim	1, 20 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	RN2 Work area	Remove	1, 13 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	RN2 Work area	Remove	1, 12 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	RN2 Work area	Remove	1, 17 dbh

Common Name, Species (sp.), Native or Non-Native if known	General Project Location and Work Area or Access Type	Expected Activity	Approximate Quantity, dbh[a]
Coast Live Oak *(Quercus agrifolia)*, Native	RN2 Work area	Remove	1, 10 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	RN2 Work area	Remove	1, 28 (2 stem) dbh
Coast Live Oak *(Quercus agrifolia)*, Native	RN2 Work area	Remove	1, 37 (3 stem) dbh
California bay laurel *(Umbellularia californica)*, Native	RN2 Work area	Remove	1, 16 (4 stem) dbh
California bay laurel *(Umbellularia californica)*, Native	RN2 Work area	Remove	1, 2 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN3 Access road	Remove	1, 4 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN3 Access road	Trim	1, 16 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	ES3 Access road	Remove	1, 3 dbh
California bay laurel *(Umbellularia californica)*, Native	ES3 Access road	Remove	1, 3 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	ES3 Access road	Remove	1, 8 dbh
Willow *(Salix* sp.*)*, Native	EN3-ES3 Access road	Remove	1, 4 dbh
California bay laurel *(Umbellularia californica)*, Native	EN3-ES3 Access road	Remove	1, 6 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN7-ES7 Access road	Trim	1, 20 dbh
California bay laurel *(Umbellularia californica)*, Native	ES8A&B Landing zone	Remove	1, 23 dbh
California bay laurel *(Umbellularia californica)*, Native	EN9-ES10 Access road	Trim	4, 4 to 20 dbh
California bay laurel *(Umbellularia californica)*, Native	EN9-ES10 Access road	Remove	1, 8 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN9-ES10 Access road	Remove	12, 4 to 20 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN9-ES10 Access road	Remove	4, 14 to 16 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN9-ES10 Access road	Remove - dead wood	3, 14 to 16 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN10-ES11 Access road	Remove	1, 18 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN10-ES11 Access road	Remove	1, 42 (2 stem) dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN10-ES11 Access road	Remove	1, 15 dbh
California bay laurel *(Umbellularia californica)*, Native	EN10-ES11 Access road	Remove	2, 14 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN10-ES11 Access road	Remove	4, 7 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN10-ES11 Access road	Remove	2, 24 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN10-ES11 Access road	Trim	2, 26 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN13 Work area	Trim	1, 27 dbh
Ornamentals and Fruit trees, Non-native	ES17 Work area	Remove	8, 5 to 10 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN15-ES17 Guard structure	Remove	3, 8 to 10 dbh
California bay laurel *(Umbellularia californica)*, Native	EN15-ES17 Guard structure	Remove	1, 12 dbh
Monterey Cypress *(Hesperocyparis macrocarpa)*, Native *(ornamental)*	EN15-ES17 Guard structure	Remove	1, 14 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN15-ES17 Guard structure	Remove	3, 8 and 14 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN16-ES18 Work area	Trim	1, 22 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN16-ES18 Guard structure	Remove	1, 15 dbh
Madrone *(Arbutus menziesii)*, Native	EN16-ES18 Guard structure	Remove	1, 14 dbh

Common Name, Species (sp.), Native or Non-Native if known	General Project Location and Work Area or Access Type	Expected Activity	Approximate Quantity, dbh[a]
Coast Live Oak *(Quercus agrifolia)*, Native	ES18 Work area	Remove	1, 30 dbh
Monterey Pine *(Pinus radiata)*, Native *(ornamental)*	ES18 Work area	Remove	1, 20 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	ES19 Work area	Trim	1, 26 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN18-ES20 Work area	Remove	2, 8 and 15 dbh
Monterey Cypress *(Hesperocyparis macrocarpa)*, Native *(ornamental)*	EN18-ES20 Work area	Remove	1, 26 dbh
Coast redwood *(Sequoia sempervirens)*, Native	EN18-ES20 Work area	Remove	2, 10 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN19-ES21 Access road	Trim	32, 4 to 20 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN21-ES23 Access road	Trim	4, 28 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN21-ES23 Work area	Remove	17, 6 to 12 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN21-ES23 Work area	Remove	10, 12 to 15 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN21-ES23 Work area	Remove	4, 25 to 28 dbh
Eucalyptus *(Eucalyptus* sp.*)*, Non-native	EN21 Work area	Remove	1, 4 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN21 Work area	Remove	1, 7 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	ES24 Work area	Remove	1, 9 to 12 dbh
Madrone *(Arbutus menziesii)*, Native	ES24 Work area	Remove	1, 14 (2 stem) dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN22 Work area	Remove	2, 12 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN22 Work area	Remove	3, 3 dbh
Acacia *(Acacia* sp.*)*, Non-native	EN22 Work area	Remove	1, 13 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN22 Work area	Remove	2, 10 dbh
Catalina Cherry *(Prunus ilicifolia Lyonii)*, Non-native	EN22-ES24 Guard structure	Remove	12, 8 to 15 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN23-ES25 Access road	Remove	2, 12 and 13 dbh
Acacia *(Acacia* sp.*)*, Non-native	EN23-ES25 Access road	Remove	3, 3 to 9 dbh
California bay laurel *(Umbellularia californica)*, Native	EN23-ES25 Access road	Trim	1, 26 dbh
Acacia *(Acacia* sp.*)*, Non-native	EN23-ES25 Access road	Remove	2, 10 to 25 dbh
Plum *(Prunus* sp.*)*, Non-native	EN23-ES25 Access road	Remove	1, 4 dbh
Acacia *(Acacia* sp.*)*, Non-native	EN23-ES25 Access road	Remove	1, 20 dbh
Monterey Cypress *(Hesperocyparis macrocarpa)*, Native *(ornamental)*	EN23-ES25 Access road	Trim	1, 22 dbh
Acacia *(Acacia* sp.*)*, Non-native	EN23-ES25 Access road	Remove	4, 5 to 18 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN25-ES27 Work area	Remove	1, 28 dbh
Monterey Pine *(Pinus radiata)*, Native *(ornamental)*	EN26-ES28 Work area	Remove	6, 4 to 14 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN26-ES28 Work area	Remove	2, 3 dbh
Acacia *(Acacia* sp.*)*, Non-native	EN26-ES28 Work area	Remove	2, 3 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN27-ES29 Foot path	Trim	8, 15 to 25 dbh
American Elm *(Ulmus americana)*, Non-native	EN27-ES29 Foot path	Remove	9, 6 to9 dbh
California bay laurel *(Umbellularia californica)*, Native	EN27-ES29 Foot path	Remove	1, 7 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	ES30 Work area	Remove	4, 4 to 14 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN28-ES30 Guard structure	Remove	1, 6 dbh

Common Name, Species (sp.), Native or Non-Native if known	General Project Location and Work Area or Access Type	Expected Activity	Approximate Quantity, dbh[a]
Coast Live Oak *(Quercus agrifolia)*, Native	EN29-ES31 Guard structure	Remove	7, 6 to 15 dbh
California bay laurel *(Umbellularia californica)*, Native	ES31/RS26 Work area and new span to TS27A and TS27B	Remove	1, 82- multistem dbh
Coast Live Oak *(Quercus agrifolia)*, Native	ES31/RS26 Work area and new span to TS27A and TS27B	Remove	2, 25 (3xstems) dbh
California bay laurel *(Umbellularia californica)*, Native	ES31/RS26 Work area and new span to TS27A and TS27B	Remove	1, 55 (3xstem) dbh
Coast Live Oak *(Quercus agrifolia)*, Native	ES31/RS26 Work area and new span to TS27A and TS27B	Remove	3, 40 (2xstems) dbh
California bay laurel *(Umbellularia californica)*, Native	ES31/RS26 Work area and new span to TS27A and TS27B	Remove	1, 16 (2xstems) dbh
Coast Live Oak *(Quercus agrifolia)*, Native	ES31/RS26 Work area and new span to TS27A and TS27B	Remove	1, 14 dbh
California bay laurel *(Umbellularia californica)*, Native	ES31/RS26 Work area and new span to TS27A and TS27B	Remove	2, 12 (2xstems) dbh
Coast Live Oak *(Quercus agrifolia)*, Native	ES31/RS26 Work area and new span to TS27A and TS27B	Remove	1, 18 dbh
California bay laurel *(Umbellularia californica)*, Native	ES31/RS26 Work area and new span to TS27A and TS27B	Remove	5, 9 (2+3 stems) dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN30-ES32 Work area	Remove	3, 8 to 25 dbh
Sweetgum *(Liquidambar styraciflua)*, Non-native	EN30-ES32 Work area	Remove	4, 14 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	EN30-ES32 Work area	Remove	6, 10 to 14 dbh
California bay laurel *(Umbellularia californica)*, Native	EN30-ES32 Work area	Remove	1, 8 dbh
Acacia *(Acacia* sp.*)*, Non-native	EN30-ES32 Work area	Remove	3, 4 to 13 dbh
Alder *(Alnus* sp.*)*, Native	EN37 Work area	Remove	1, 22 dbh
Coast Live Oak *(Quercus agrifolia)*, Native	East side of Oakland Substation parcel Work area	Remove	2, 26 dbh
London plane tree *(Platanus x acerifolia)*, Non-native	Underground Line, Park Blvd median Estates Dr to St. James Dr	Remove	2, 4 to 8 dbh
Coast redwood *(Sequoia sempervirens)*, Native	Underground Line, Park Blvd median Estates Dr to St. James Dr	Remove	1, 32 dbh
London plane tree *(Platanus x acerifolia)*, Non-native	Underground Line, Park Blvd median St. James Dr to Trestle Glen Rd	Remove	2, 3 to 6 dbh
London plane tree *(Platanus x acerifolia)*, Non-native	Underground Line, Park Blvd median Trestle Glen Rd to Cavendish Ln	Remove	2, 7 dbh
Dwarf date palm *(Phoenix roebelenii)*, Non-native	Underground Line, Park Blvd median Trestle Glen Rd to Cavendish Ln	Remove	1, 7 dbh
London plane tree *(Platanus x acerifolia)*, Non-native	Underground Line, Park Blvd median Hollywood Ave to El Centro Ave	Remove	12, 3 to 14 dbh
Dwarf date palm *(Phoenix roebelenii)*, Non-native	Underground Line, Park Blvd median Hollywood Ave to El Centro Ave	Remove	4, 6 to 8 dbh
London plane tree *(Platanus x acerifolia)*, Non-native	Underground Line, Park Blvd median El Centro Ave to Everett Ave	Remove	2, 5 to 10 dbh

Common Name, Species (sp.), Native or Non-Native if known	General Project Location and Work Area or Access Type	Expected Activity	Approximate Quantity, dbh[a]
London plane tree *(Platanus x acerifolia)*, Non-native	Underground Line, Park Blvd median Everett Ave to Wellington St	Remove	10, 5 to 13 dbh
Dwarf date palm *(Phoenix roebelenii)*, Non-native	Underground Line, Park Blvd median Everett Ave to Wellington St	Remove	1, 8 dbh
London plane tree *(Platanus x acerifolia)*, Non-native	Underground Line, Park Blvd median Wellington St to Glenfield Ave	Remove	3, 6 to 8 dbh
London plane tree *(Platanus x acerifolia)*, Non-native	Underground Line, Park Blvd median Glenfield Ave to Hampel St	Remove	13, 5 to 12 dbh
London plane tree *(Platanus x acerifolia)*, Non-native	Underground Line, Park Blvd median Hampel St to Brighton Ave	Remove	3, 3 to 8 dbh
London plane tree *(Platanus x acerifolia)*, Non-native	Underground Line, Park Blvd median Brighton Ave to Beaumont Ave	Remove	5, 3 to 8 dbh
London plane tree *(Platanus x acerifolia)*, Non-native	Underground Line, Park Blvd median Beaumont Ave to Park Blvd Way	Remove	2, 8 dbh
London plane tree *(Platanus x acerifolia)*, Non-native	Underground Line, along Park Blvd Way	Remove	7, 6 to 10 dbh
Dwarf date palm *(Phoenix roebelenii)*, Non-native	Underground Line, along Park Blvd Way	Remove	1, 7 dbh

[a] dbh = diameter at breast

Table 2.4-1. Anticipated Construction Equipment and Workforce

			Approximate Estimated or Potential						
Equipment	**Horsepower**	**Fuel Type**	**Quantity**	**Workforce**	**Start Date**	**End Date**	**Daily Use (Hours)**	**Miles/Day**	**Total Days**
PG&E Rebuild Lines Overhead and Remove Existing East of Estates Dr									
Alignment Clearing				**2**					
10-Cu Dump Truck	NA	Diesel	3		Jun 2029	Jul 2029	NA	60	30
Boom Truck	NA	Diesel	5		Jun 2029	Jul 2029	NA	60	30
Chain Saws	1.9	Diesel	10		Jun 2029	Jul 2029	4	NA	30
Large Chipper	4.9	Diesel	5		Jun 2029	Jul 2029	4	NA	30
Blowers	1.8	Diesel	5		Jun 2029	Jul 2029	4	NA	30
Weed Wacker	1.7	Diesel	5		Jun 2029	Jul 2029	4	NA	30
Worker Commutes	NA	Gas	2		Jun 2029	Jul 2029	NA	60	30
Roads and Access				**4**					
10-Cu Dump Truck	NA	Diesel	1		Jul 2029	Jul 2029	NA	45	10
4,000 Gallon Water Truck	NA	Diesel	2		Jul 2029	Jul 2029	NA	50	25
¾-Ton Pickup Truck, 4 × 4	NA	Diesel	1		Jul 2029	Jul 2029	NA	30	10
Lowboy Truck/Trailer	NA	Diesel	2		Jul 2029	Jul 2029	NA	30	4
Skid Steer	71	Diesel	1		Jul 2029	Jul 2029	5	25	10
325 Excavator	36	Diesel	1		Jul 2029	Jul 2029	5	45	10
Skip Loader	150	Diesel	1		Jul 2029	Jul 2029	5	NA	15
D6 Dozer	84	Diesel	1		Jul 2029	Jul 2029	5	NA	10
Fugitive Dust	NA	NA	NA		Jul 2029	Jul 2029	NA	NA	25
Worker Commutes (¾-Ton Pickup Truck)	NA	Gas	4		Jul 2029	Jul 2029	NA	50	25
Light Duty Truck	NA	Gas	1		Jul 2029	Jul 2029	NA	50	12
Guard Structures				**18**					
Digger Derrick Line Truck	NA	Diesel	2		Aug 2029	Feb 2030	NA	30	47
55-foot Bucket Truck	376	Diesel	1		Aug 2029	Feb 2030	8	NA	47
20,000 Pound Capacity Forklift	82	Diesel	1		Aug 2029	Feb 2030	8	NA	47
Super Framer 10 Wheel Flat Bed	NA	Diesel	1		Aug 2029	Feb 2030	NA	1	47
Heavy-Duty Vac Truck	NA	Diesel	2		Aug 2029	Feb 2030	NA	1	47
Generator	14	Diesel	1		Aug 2029	Feb 2030	8	NA	47
Flasher Board for Traffic Control	6	Diesel	2		Aug 2029	Feb 2030	8	NA	47

	Approximate Estimated or Potential								
Equipment	**Horsepower**	**Fuel Type**	**Quantity**	**Workforce**	**Start Date**	**End Date**	**Daily Use (Hours)**	**Miles/Day**	**Total Days**
Worker Commutes (Light-duty Auto)	NA	Gas	6		Aug 2029	Feb 2030	NA	50	47
Worker Commutes (Medium-duty)	NA	Diesel	8		Aug 2029	Feb 2030	NA	50	47
Worker Commutes (Light-duty)	NA	Gas	4		Aug 2029	Feb 2030	NA	50	47
¾-Ton Pickup Truck, 4 × 4	NA	Diesel	6		Aug 2029	Feb 2030	NA	30	47
1-Ton Crew Cab Pickup	NA	Diesel	4		Aug 2029	Feb 2030	NA	30	47
Foundations				**7**					
10-Cu Dump Truck	NA	Diesel	1		Aug 2029	Feb 2030	NA	45	135
Auger Truck	83	Diesel	1		Aug 2029	Feb 2030	8	NA	15
10-Cu Concrete Mixer Truck	NA	Diesel	2		Aug 2029	Feb 2030	NA	75	15
¾-Ton Pickup Truck, 4 × 4	NA	Diesel	2		Aug 2029	Feb 2030	NA	30	135
Lowboy Truck/Trailer	NA	Diesel	1		Aug 2029	Feb 2030	NA	30	135
Skid Steer/Front Loader	71	Diesel	1		Aug 2029	Feb 2030	8	NA	135
Boom Truck	NA	Diesel	1		Aug 2029	Feb 2030	NA	15	135
Backhoe/Front Loader	84	Diesel	1		Aug 2029	Feb 2030	8	NA	135
Worker Commutes (Light-duty Auto)	NA	Gas	3		Aug 2029	Feb 2030	NA	10	135
Worker Commutes (Light-duty Auto)	NA	Gas	2		Aug 2029	Feb 2030	NA	10	135
Worker Commutes (Light-duty)	NA	Gas	2		Aug 2029	Feb 2030	NA	10	135
Structures Replacement				**7**					
Lowboy Truck/Trailer	NA	Diesel	3		Aug 2029	Feb 2030	NA	30	135
Truck - Framer (Crew Pick Up)	NA	Diesel	2		Aug 2029	Feb 2030	NA	25	135
F250 4X4 Crewcab (3/4 T) Foreman	NA	Diesel	2		Aug 2029	Feb 2030	NA	25	135
¾-Ton Pickup Truck, 4 × 4	NA	Diesel	2		Aug 2029	Feb 2030	NA	25	135
Hydro Seed Truck	NA	Diesel	1		Aug 2029	Feb 2030	NA	60	20
Truck Cranes - 20 - 30 Ton	367	Diesel	2		Aug 2029	Feb 2030	5	NA	135
100 - 280 Ton Crane	367	Diesel	3		Aug 2029	Feb 2030	8	NA	135
Helicopter	NA	Diesel	3		Aug 2029	Feb 2030	5	NA	22
Worker Commutes (Light-duty Auto)	NA	Gas	3		Aug 2029	Feb 2030	NA	10	135
Worker Commutes (Light-duty Auto)	NA	Gas	2		Aug 2029	Feb 2030	NA	10	135
Worker Commutes (Light-duty Auto)	NA	Gas	2		Aug 2029	Feb 2030	NA	10	135

	Approximate Estimated or Potential								
Equipment	**Horsepower**	**Fuel Type**	**Quantity**	**Workforce**	**Start Date**	**End Date**	**Daily Use (Hours)**	**Miles/Day**	**Total Days**
Transition Structures Estates/Park – South of Park				**7**					
Lowboy Truck/Trailer	NA	Diesel	3		Feb 2030	Feb 2030	NA	30	10
Truck - Framer (Crew Pick Up)	NA	Diesel	2		Feb 2030	Feb 2030	NA	25	10
F250 4X4 Crewcab (3/4 T) Foreman	NA	Diesel	2		Feb 2030	Feb 2030	NA	25	10
¾-Ton Pickup Truck, 4 × 4	NA	Diesel	2		Feb 2030	Feb 2030	NA	25	10
Truck Cranes - 20 - 30 Ton	367	Diesel	1		Feb 2030	Feb 2030	5	NA	10
100 - 280 Ton Crane	367	Diesel	1		Feb 2030	Feb 2030	8	NA	10
Worker Commutes (Light-duty Auto)	NA	Gas	3		Feb 2030	Feb 2030	NA	10	10
Worker Commutes (Light-duty Auto)	NA	Gas	2		Feb 2030	Feb 2030	NA	10	10
Worker Commutes (Light-duty Auto)	NA	Gas	2		Feb 2030	Feb 2030	NA	10	10
Transition Structures Estates/Park – North of Park				**7**					
Lowboy Truck/Trailer	NA	Diesel	3		Mar 2030	Mar 2030	NA	30	10
Truck - Framer (Crew Pick Up)	NA	Diesel	2		Mar 2030	Mar 2030	NA	25	10
F250 4X4 Crewcab (3/4 T) Foreman	NA	Diesel	2		Mar 2030	Mar 2030	NA	25	10
¾-Ton Pickup Truck, 4 × 4	NA	Diesel	2		Mar 2030	Mar 2030	NA	25	10
Truck Cranes - 20 - 30 Ton	367	Diesel	1		Mar 2030	Mar 2030	5	NA	10
100 - 280 Ton Crane	367	Diesel	1		Mar 2030	Mar 2030	8	NA	10
Worker Commutes	NA	Gas	3		Mar 2030	Mar 2030	NA	10	10
Worker Commutes	NA	Gas	2		Mar 2030	Mar 2030	NA	10	10
Worker Commutes	NA	Gas	2		Mar 2030	Mar 2030	NA	10	10
Transition Structures at Oakland X				**7**					
Lowboy Truck/Trailer	NA	Diesel	3		Apr 2030	Apr 2030	NA	30	20
Truck - Framer (Crew Pick Up)	NA	Diesel	2		Apr 2030	Apr 2030	NA	25	20
F250 4X4 Crewcab (3/4 T) Foreman	NA	Diesel	2		Apr 2030	Apr 2030	NA	25	20
¾-Ton Pickup Truck, 4 × 4	NA	Diesel	2		Apr 2030	Apr 2030	NA	25	20
Truck Cranes - 20 - 30 Ton	367	Diesel	1		Apr 2030	Apr 2030	5	NA	20
100 - 280 Ton Crane	367	Diesel	1		Apr 2030	Apr 2030	8	NA	20
Worker Commutes	NA	Gas	3		Apr 2030	Apr 2030	NA	10	20
Worker Commutes	NA	Gas	2		Apr 2030	Apr 2030	NA	10	20
Worker Commutes	NA	Gas	2		Apr 2030	Apr 2030	NA	10	20

	Approximate Estimated or Potential								
Equipment	**Horsepower**	**Fuel Type**	**Quantity**	**Workforce**	**Start Date**	**End Date**	**Daily Use (Hours)**	**Miles/Day**	**Total Days**
Conductor Replacement				**28**					
Line Puller	82	Diesel	2		May 2030	Nov 2030	8	NA	133
Trailer-Mounted Tensioner	82	Diesel	2		May 2030	Nov 2030	8	NA	133
55-foot Bucket Truck	376	Diesel	4		May 2030	Nov 2030	7	NA	133
Transport of 55-foot Bucket Truck	NA	Diesel	4		May 2030	Nov 2030	NA	20	133
105-foot Bucket Truck	376	Diesel	2		May 2030	Nov 2030	7	NA	133
Transport of 105-foot Bucket Truck	NA	Diesel	2		May 2030	Nov 2030	NA	20	133
120-foot Crane Truck	376	Diesel	2		May 2030	Nov 2030	7	NA	133
Transport of 120-foot Crane Truck	NA	Diesel	2		May 2030	Nov 2030	NA	20	133
10,000 Pound Capacity Forklift	82	Diesel	1		May 2030	Nov 2030	7	NA	133
Transport of 10,000 Pound Capacity Forklift	NA	Diesel	1		May 2030	Nov 2030	NA	20	133
Generator	14	Diesel	2		May 2030	Nov 2030	7	NA	133
Transport of Generator	NA	Diesel	2		May 2030	Nov 2030	NA	20	133
Tractor Trailer (40-foot flatbed)	376	Diesel	1		May 2030	Nov 2030	5	NA	133
Transport of Tractor Trailer (40-foot flatbed)	NA	Diesel	1		May 2030	Nov 2030	NA	20	133
Light Ship Helicopter	NA	Diesel	3		May 2030	Nov 2030	6	NA	32
Medium-sized Ship Helicopter	NA	Diesel	3		May 2030	Nov 2030	6	NA	32
Worker Commutes	NA	Gas	10		May 2030	Nov 2030	NA	50	133
Worker Commutes	NA	Diesel	8		May 2030	Nov 2030	NA	50	133
Worker Commutes	NA	Gas	10		May 2030	Nov 2030	NA	50	133
Truck - Light Duty Pickup	NA	Gas	8		May 2030	Nov 2030	NA	30	133
Crew Cab Heavy-Duty Pickup	NA	Diesel	6		May 2030	Nov 2030	NA	30	133
Restoration				**2**					
Flat Bed (plants to install)	NA	Diesel	1		Dec 2030	Nov 2032	NA	60	20
Crew Trucks	NA	Diesel	2		Dec 2030	Nov 2032	NA	60	20
Water Truck	NA	Diesel	1		Dec 2030	Nov 2032	NA	60	24
Worker Commutes - Dry Weather Monthly Insp.	NA	Gas	1		Dec 2030	Nov 2032	NA	60	6
Worker Commutes - Wet Weather Monthly Insp.	NA	Gas	1		Dec 2030	Nov 2032	NA	60	26

	Approximate Estimated or Potential								
Equipment	**Horsepower**	**Fuel Type**	**Quantity**	**Workforce**	**Start Date**	**End Date**	**Daily Use (Hours)**	**Miles/Day**	**Total Days**
PG&E Rebuild Western Extent of Lines as Underground – West of Estates Dr									
Mobilization and Survey				**18**					
10-Cu Dump Truck (remove green waste from trees)	NA	Diesel	1		Aug 2028	Sep 2028	NA	60	3
Boom Truck (tree removal)	NA	Diesel	1		Aug 2028	Sep 2028	NA	60	3
Chain Saws	1.9	Diesel	2		Aug 2028	Sep 2028	4	NA	3
Large Chipper (12 inch diameter veg)	4.9	Diesel	1		Aug 2028	Sep 2028	4	NA	3
Utility Truck	NA	Diesel	1		Aug 2028	Sep 2028	NA	15	20
Delivery Vehicles	NA	Diesel	1		Aug 2028	Sep 2028	NA	15	20
Traffic Control Trucks	NA	Diesel	3		Aug 2028	Sep 2028	NA	50	10
¾-Ton Pickup Truck, 4 × 4	NA	Diesel	2		Aug 2028	Sep 2028	NA	15	10
1-Ton Crew Cab Flatbed, 4 × 4	NA	Diesel	2		Aug 2028	Sep 2028	NA	15	20
Lowboy Truck/Trailer	NA	Diesel	1		Aug 2028	Sep 2028	NA	2	10
Worker Commutes	NA	Gas	6		Aug 2028	Sep 2028	NA	50	30
Worker Commutes	NA	Gas	6		Aug 2028	Sep 2028	NA	50	30
Worker Commutes	NA	Gas	6		Aug 2028	Sep 2028	NA	50	30
Vaults	**6**								
CAT 328 Excavator	36	Diesel	1		Sep 2028	May 2029	5	NA	120
CAT 928 Loader	84	Diesel	1		Sep 2028	May 2029	5	NA	120
JD 225 Excavator	36	Diesel	1		Sep 2028	May 2029	5	NA	120
RT 100 - Terex Rough Terrain Crane	367	Diesel	1		Sep 2028	May 2029	5	NA	120
2500 Dodge Ram Pickup	NA	Diesel	2		Sep 2028	May 2029	NA	50	120
3500 Dodge Ram Pickup	NA	Diesel	2		Sep 2028	May 2029	NA	50	120
T 880 Kenworth Dump Truck	376	Diesel	1		Sep 2028	May 2029	5	NA	120
Concrete Truck	376	Diesel	2		Sep 2028	May 2029	8	NA	120
Lowboy Truck/Trailer	NA	Diesel	1		Sep 2028	May 2029	NA	50	120
Worker Commutes	NA	Gas	6		Sep 2028	May 2029	NA	50	120
Trenching and Duct Bank				**24**					
CAT 450 Backhoe	84	Diesel	3		Sep 2028	Aug 2029	5	NA	240
CAT 928 Loader	84	Diesel	3		Sep 2028	Aug 2029	5	NA	240
JD 225 Excavator	36	Diesel	3		Sep 2028	Aug 2029	5	NA	240

	Approximate Estimated or Potential								
Equipment	**Horsepower**	**Fuel Type**	**Quantity**	**Workforce**	**Start Date**	**End Date**	**Daily Use (Hours)**	**Miles/Day**	**Total Days**
Doosan Air Compressor 185 CFM	37	Diesel	3		Sep 2028	Aug 2029	5	NA	240
T 880 Kenworth Dump Truck	376	Diesel	3		Sep 2028	Aug 2029	10	NA	240
1500 Dodge Ram Pickup	NA	Diesel	3		Sep 2028	Aug 2029	NA	110	240
2500 Dodge Ram Pickup	NA	Diesel	3		Sep 2028	Aug 2029	NA	110	240
3500 Dodge Ram Pickup	NA	Diesel	3		Sep 2028	Aug 2029	NA	6	240
Ingersoll Rand DD 24 Roller	36	Diesel	1		Sep 2028	Aug 2029	10	NA	240
Volvo VNX 300 Tractor	376	Diesel	2		Sep 2028	Aug 2029	3	NA	240
350 kW Generator	14	Diesel	1		Sep 2028	Aug 2029	5	NA	60
3500 Dodge Ram Pickup	NA	Diesel	1		Sep 2028	Aug 2029	NA	6	60
Welding Machine	46	Diesel	1		Sep 2028	Aug 2029	4	NA	60
Boom Truck	NA	Diesel	1		Sep 2028	Aug 2029	NA	6	60
Concrete Truck	NA	Diesel	1		Sep 2028	Aug 2029	NA	60	90
Worker Commutes	NA	Gas	24		Sep 2028	Aug 2029	NA	50	240
Cable Installation and Splicing				**32**					
3500 Dodge Ram Pickup	NA	Diesel	2		Jun 2029	Jan 2030	NA	50	55
Semi Tractor	376	Diesel	1		Jun 2029	Jan 2030	5	NA	34
Cable Winch	82	Diesel	1		Jun 2029	Jan 2030	5	NA	55
1500 Dodge Ram Pickup	NA	Diesel	2		Jun 2029	Jan 2030	NA	50	90
Cable Reel Cart	82	Diesel	1		Jun 2029	Jan 2030	5	NA	55
2 kW Generator	14	Diesel	1		Jun 2029	Jan 2030	10	NA	90
Vacuum Truck	NA	Diesel	1		Jun 2029	Jan 2030	NA	35	4
Worker Commutes	NA	Gas	32		Jun 2029	Jan 2030	NA	50	90
Cable System Commissioning and Testing				**32**					
3500 Dodge Ram Pickup	NA	Diesel	2		Feb 2030	Feb 2030	NA	50	15
1500 Dodge Ram Pickup	NA	Diesel	2		Feb 2030	Feb 2030	NA	50	15
Worker Commutes	NA	Gas	32		Feb 2030	Feb 2030	NA	50	15
Restoration and Paving				**18**					
Utility Truck	NA	Diesel	1		Feb 2029	Aug 2029	NA	50	25
Traffic Control Trucks	NA	Diesel	3		Feb 2029	Aug 2029	NA	50	25
Delivery Vehicles	NA	Diesel	1		Feb 2029	Aug 2029	NA	50	25

	Approximate Estimated or Potential								
Equipment	**Horsepower**	**Fuel Type**	**Quantity**	**Workforce**	**Start Date**	**End Date**	**Daily Use (Hours)**	**Miles/Day**	**Total Days**
Drum Type Compactor	82	Diesel	1		Feb 2029	Aug 2029	5	NA	25
Road Grader	82	Diesel	1		Feb 2029	Aug 2029	5	NA	25
Street Sweeper	36	Diesel	1		Feb 2029	Aug 2029	5	NA	20
Road Paving Machine	82	Diesel	1		Feb 2029	Aug 2029	5	NA	20
Worker Commutes	NA	Gas	6		Feb 2029	Aug 2029	NA	50	25
Worker Commutes	NA	Gas	6		Feb 2029	Aug 2029	NA	50	25
Worker Commutes	NA	Gas	6		Feb 2029	Aug 2029	NA	50	25
Inspections				**2**					
Worker Commutes	NA	Gas	2		Sep 2028	Feb 2030	NA	50	25
Inspector Vehicles	NA	Gas	2		Sep 2028	Feb 2030	NA	50	317
Truck Drivers/Hauling				**14**					
Material Haul Trucks	NA	Diesel	14		Sep 2028	Aug 2029	NA	50	122
Long Haul Dump Truck	NA	Diesel	1		Sep 2028	Aug 2029	NA	50	106
Replant/Water Landscape Trees				**2**					
Flat Bed (plants to install)	NA	Diesel	1		Sep 2029	Aug 2029	NA	60	10
Crew Trucks	NA	Gas	2		Sep 2029	Aug 2031	NA	60	10
Water Truck	NA	Diesel	1		Sep 2029	Aug 2031	NA	60	24
PG&E Removing Existing Structures and Conductors West of Estates Dr									
Alignment Clearing				**2**					
10-Cu Dump Truck	NA	Diesel	1		Mar 2030	Mar 2030	NA	60	3
Boom Truck (remove green waste)	NA	Diesel	1		Mar 2030	Mar 2030	NA	60	3
Chain Saws	1.9	Diesel	1		Mar 2030	Mar 2030	4	NA	3
Large Chipper (12 inch diameter veg)	4.9	Diesel	1		Mar 2030	Mar 2030	4	NA	3
Blowers	1.8	Diesel	1		Mar 2030	Mar 2030	4	NA	3
Weed Wacker	1.7	Diesel	1		Mar 2030	Mar 2030	4	NA	3
Worker Commutes	NA	Gas	2		Mar 2030	Mar 2030	NA	60	3
Structure Removals (Poles and Towers)				**7**					
Lowboy Truck/Trailer	NA	Diesel	3		Mar 2030	Apr 2030	NA	30	40
Truck - Framer (Crew Pick Up)	NA	Diesel	2		Mar 2030	Apr 2030	NA	25	40
F250 4X4 Crewcab (3/4 T) Foreman	NA	Diesel	2		Mar 2030	Apr 2030	NA	25	40

	Approximate Estimated or Potential								
Equipment	**Horsepower**	**Fuel Type**	**Quantity**	**Workforce**	**Start Date**	**End Date**	**Daily Use (Hours)**	**Miles/Day**	**Total Days**
¾-Ton Pickup Truck, 4 × 4	NA	Diesel	2		Mar 2030	Apr 2030	NA	25	40
Truck Cranes - 20 - 30 Ton	367	Diesel	2		Mar 2030	Apr 2030	5	NA	40
100 - 280 Ton Crane	367	Diesel	3		Mar 2030	Apr 2030	8	NA	40
Worker Commutes	NA	Gas	3		Mar 2030	Apr 2030	NA	10	40
Worker Commutes	NA	Gas	2		Mar 2030	Apr 2030	NA	10	40
Worker Commutes	NA	Gas	2		Mar 2030	Apr 2030	NA	10	40
Restoration				**2**					
Worker Commutes - Inspection	NA	Gas	1		May 2030	May 2030	NA	60	2
Flat Bed (plants to install)	NA	Diesel	1		May 2030	May 2030	NA	60	2
Crew Trucks	NA	Gas	2		May 2030	May 2030	NA	60	5
PG&E Construction Activities at Moraga Substation									
Equipment Delivery and Setup				**1**					
1-Ton Crew Cab Pickup (delivery)	NA	Diesel	1		Sep 2029	Sep 2029	NA	50	1
Equipment Installation				**5**					
Worker Commutes	NA	Gas	2		Sep 2029	Oct 2029	NA	50	40
Worker Commutes	NA	Gas	1		Sep 2029	Oct 2029	NA	50	40
Worker Commutes	NA	Gas	1		Sep 2029	Oct 2029	NA	50	40
Dress/Test/Wire Equipment									
Worker Commutes	NA	Gas	2		Nov 2029	Dec 2029	NA	50	40
Worker Commutes	NA	Gas	1		Nov 2029	Dec 2029	NA	50	40
Worker Commutes	NA	Gas	1		Nov 2029	Dec 2029	NA	50	40
Equipment Removal				**1**					
1-Ton Crew Cab Pickup (delivery)	NA	Diesel	1		Dec 2029	Dec 2029	NA	50	1
Inspections				**1**					
Worker Commutes	NA	Gas	1		Sep 2029	Dec 2029	NA	50	20
PG&E Construction Activities at Oakland X Substation									
Equipment Delivery and Setup				**5**					
Forklift	82	Diesel	1		Sep 2029	Sep 2029	8	NA	1
1-Ton Crew Cab Pickup (delivery)	NA	Diesel	1		Sep 2029	Sep 2029	NA	50	1
Worker Commutes	NA	Gas	2		Sep 2029	Sep 2029	NA	50	1

	Approximate Estimated or Potential								
Equipment	**Horsepower**	**Fuel Type**	**Quantity**	**Workforce**	**Start Date**	**End Date**	**Daily Use (Hours)**	**Miles/Day**	**Total Days**
Worker Commutes	NA	Gas	1		Sep 2029	Sep 2029	NA	50	1
Worker Commutes	NA	Gas	1		Sep 2029	Sep 2029	NA	50	1
Equipment Installation	**5**								
Worker Commutes	NA	Gas	2		Sep 2029	Dec 2029	NA	50	80
Worker Commutes	NA	Gas	2		Sep 2029	Dec 2029	NA	50	80
Worker Commutes	NA	Gas	1		Sep 2029	Dec 2029	NA	50	80
Dress/Test/Wire Equipment				**5**					
Worker Commutes	NA	Gas	2		Dec 2029	Jan 2030	NA	50	40
Worker Commutes	NA	Gas	2		Dec 2029	Jan 2030	NA	50	40
Worker Commutes	NA	Gas	1		Dec 2029	Jan 2030	NA	50	40
Equipment Removal				**1**					
1-Ton Crew Cab Pickup (delivery)	NA	Diesel	1		Jan 2030	Jan 2030	NA	50	1
Inspections				**3**					
Pickup Truck	NA	Gas	3		Jan 2030	Feb 2030	NA	50	40

Appendix C

SCOPING REPORT

SCOPING REPORT

PG&E Moraga-Oakland X
115 Kilovolt Rebuild Project

Prepared for

California Public Utilities Commission

Submitted by

Aspen environmental group

April 2025

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1. INTRODUCTION

In its California Public Utilities Commission (CPUC) application (A.24-11-005), filed on November 15, 2024, Pacific Gas and Electric Company (PG&E) requests a Permit to Construct (PTC) for the Moraga-Oakland X 115 kV Transmission Line Rebuild Project (Project). The CPUC is the lead agency for the purposes of the California Environmental Quality Act (CEQA) review. Based on its review of the application and the Proponent's Environmental Assessment (PEA) submitted by PG&E, the CPUC is preparing an Environmental Impact Report (EIR), pursuant to CEQA, to evaluate potential effects of the Project.

On February 25, 2025, the CPUC issued a Notice of Preparation (NOP) of an EIR for the Project, which initiated agency consultation regarding the scope and content of information to be analyzed in the EIR (a process called "scoping") and invited early public input about potential environmental concerns (Pub. Res. Code § 21080.4(a); CEQA Guidelines §§ 15082(b), 15083). CEQA Guidelines Section 15083 provides that a "Lead Agency may…consult directly with any person…it believes will be concerned with the environmental effects of the project." Section 15083(a) states that scoping can be "helpful to agencies in identifying the range of actions, alternatives, mitigation measures, and significant effects to be analyzed in depth in an EIR and in eliminating from detailed study issues found not to be important." Scoping is an effective way to bring together and consider the concerns of affected State, regional, and local agencies, the project proponent, and other interested persons (CEQA Guidelines § 15083(b)).

This scoping report provides an overview and summary of the written and oral comments provided by agencies and individuals during the 30-day scoping period, which commenced February 25, 2025, and closed on March 27, 2025. The CPUC will use this scoping report to inform the preparation of a comprehensive EIR which will consider agency and community concerns. Pursuant to CEQA Guidelines Section 15082, all public comments within the scope of CEQA will be considered in the EIR process.

2. DESCRIPTION OF PROJECT

2.1. Project Summary

The Project would rebuild four overhead 115 kV power line circuits that span approximately 5-miles between PG&E's Moraga and Oakland X substations. The two existing parallel double-circuit lines would be rebuilt as hybrid power lines, meaning the two double-circuit lines between the two substations would have both overhead and underground segments. Existing towers, poles and conductors would be replaced either with overhead rebuild or underground components, and minor modifications would occur within the existing substations. Some recently replaced power line structures would be reused or reused with some modification. Single-circuit transition structures would support the connection between the overhead and underground portions of each circuit. Double-circuit transition structures would be used to connect the underground portion to existing overhead circuit terminals at Oakland X Substation. Additionally, the rebuild would include the installation of a static ground wire and an optical ground wire connecting to each aboveground structures with grounding and a telecommunication cable continuing in the underground segment.

2.2. Project Location

The Project would be located within the city of Orinda, unincorporated Contra Costa County, and the cities of Oakland and Piedmont. The existing land uses in the Project area include utility in the city of Orinda, open space and parks in unincorporated Contra Costa County, and residential, commercial, parks, places of worship and schools within the cities of Oakland and Piedmont in Alameda County.

3. SCOPING PROCESS

3.1. Notice of Preparation

On February 25, 2025, the CPUC issued an NOP consistent with CEQA Guidelines Section 15082. The NOP described the proposed Project, stated the CPUC's intention to prepare an EIR, and requested comments from interested parties. In addition to mailing the NOP to agencies and Native American tribes, a postcard notice was mailed to landowners along the Project route. Attachment A, Notices, presents the notices distributed for the Project.

NOPs and scoping notices were mailed to responsible, trustee, and interested agencies, tribal governments, and property owners/residents as noted below.

- 38 NOPs were distributed via U.S. Mail.
- 100 NOPs were distributed via email.
- 7,134 postcard notices were distributed by U.S. Mail.

The NOP was also filed at the State Clearinghouse and posted at the County Clerks' offices for Contra Costa and Alameda Counties.

3.2. Newspaper Advertisements

The public scoping period for the EIR was advertised in two newspapers, the Contra Costa Times (February 27, 2025) and the Oakland Tribune (February 28, 2025). The advertisements provided a synopsis of the proposed Project, a map of the Project route, information about the scoping period and the scoping meetings, the email address for submitting written comments on the Project, and the address of the Project website. Attachment B, Newspaper Advertisements, includes copies of the advertisements published in the two newspapers.

3.3. Public Scoping Meetings (Virtual)

The CPUC held two virtual public scoping meetings using the Zoom Meetings software, where attendees could access either meeting through an internet connection or by telephone (see Table 1). The purpose of the scoping meetings was to present information about the MOX Project and the CPUC's decision making processes, and to hear public comments. A copy of the scoping meeting presentation is presented in Attachment C, Scoping Meeting Presentation. All oral comments made at the scoping meetings were recorded and summaries of the comments are included in Section 4.

Table 1. Public Scoping Meetings

	Virtual Meeting #1	Virtual Meeting #2
Day & Date	Thursday, March 13, 2025	Thursday, March 13, 2025
Time	Afternoon: 2:30 to 4:00 p.m.	Evening: 5:30 to 7:00 p.m.
How to Participate	Attend by Zoom: https://us02web.zoom.us/j/84175864740 Attend by Phone: (669) 444-9171 then enter Webinar ID: 841 7586 4740	Attend by Zoom: https://us02web.zoom.us/j/82814611227 Attend by Phone: (669) 900-6833 then enter Webinar ID: 828 1461 1227

3.4. Other Public Outreach

In addition to the public scoping meetings, the CPUC provided additional opportunities for the public and agencies to ask questions or comment on the Project. A Project information phone line, email address, and website were established. Information on these outreach options are described below.

- **Other Avenues for Submitting Comments**. The CPUC provided an email address (MOX@aspeneg.com) for electronic submittal of comments.
- **Project Website.** The CPUC established a Project-specific website to house all Project-related documents during the CEQA process. During the scoping period, the website presented details on the scoping meetings, and described how comments could be submitted. This website will be updated throughout the review of the MOX Project to serve as a resource of Project reports and updates.

  https://ia.cpuc.ca.gov/environment/info/aspen/moraga-oakland/moraga-oakland.htm
- **Phone Line.** A Project phone line was set up to take questions from the public or requests for more information. This phone line (877-225-2127) provides another avenue for the public to obtain information about the Project. This phone line will continue to be used throughout the Project review process.
- **Project Contact List.** The CPUC has compiled a Project-specific mailing list with approximately 7,274 entries. This list includes responsible, trustee, and interested agencies, the State Clearinghouse, tribal governments, and property owners/residents.

The mailing list was updated based on contact information from the comment letters received during the scoping comment period. This mailing or distribution list will continue to be used throughout the environmental review process to distribute public notices and will be updated regularly to ensure all interested parties are notified of key project milestones.

3.5. Agency and Tribal Government Consultation

As part of scoping efforts, CPUC conducted early outreach to local agencies and officials and resource agencies to inform them about the upcoming Project and its scoping period. More than 11 agencies were contacted during this early outreach to identify issues of concern and to provide information on the Project. These agencies were also notified at the start of scoping and will continue to be noticed regarding Project review activities.

Additionally, the CPUC conducted consultation meetings with the following agencies. Input received related to significant environmental issues is briefly summarized below:

- **March 11, 2025: City of Oakland Department of Transportation (OakDOT)**
  - Note that Park Boulevard is concrete and would take longer to restore after construction.
  - Ensure communication with the community beforehand and notify residents of the circulation restriction in advance. Paper notices are recommended.
  - Concern with Park Boulevard, as it is a street of major importance.
  - Concern with the locations of the proposed cranes during construction. Ensure that cranes are non-obstructive during non-working hours.
  - Concern with obstructions during emergency response and maintaining circulation/access during the construction period. Ensure residents can get in and out of their neighborhoods and have at least a 12-foot-wide route.
  - Note that roads are 20 feet wide in some places and it would not be feasible to move the crane to allow access throughout the day in these areas.

- Avoid major disturbances.
- Concern with noise impacts, especially during nighttime construction and steel plates on roads that commonly result in noise complaints.

- **March 11, 2025: Oakland Fire Department**
  - In favor of undergrounding power lines.
  - Ensure communication of the construction schedule, phasing, and any electrical service interruptions.
  - No significant emergency access concerns occur along Park Boulevard.
  - While the area of underground construction in Oakland is not in a designated Fire Hazard Severity Zone (FHSZ), Park Blvd is a path from a Very High FHSZ.
  - Note that the highest fire risk and high winds occur from September to November and that the best construction window is April to June. However, there is no "good time" anymore due to changing wildfire behavior.
  - Ensure notification of construction to jurisdictions and establishment of emergency alternative routes, especially in areas with proposed temporary roadway closures.
  - Provide notification of construction timing to residents, as well as education about fire threats. Coordinate with PG&E on homeowner outreach.
  - Consider impacts to Corpus Christi School and completing construction outside of the school year, in June and July.
  - Hold community meetings prior to the start of construction.
  - Notify the Oakland Fire Department and mark hydrants if out of service and temporary blockage cannot be avoided.
  - Minimize residential cars parked along narrow roadways and/or only allow parking of construction vehicles.
  - Emphasize that the Project need involves aging infrastructure, safety, and reliability.
  - Be aware that roadways less than 20 feet wide present an emergency access issue.
  - Provide the fire department with visuals of the proposed crane trucks to assess potential obstructions.
  - Coordinate with the Oakland Department of Transportation on possible mitigation, such as parking signs during construction.

- **March 20, 2025: City of Piedmont**
  - Concern with hazardous materials during tower removal.
  - Concern with construction traffic at the intersection of Estates Drive and Park Boulevard due to proximity to the Corpus Christi School. Provide extensive traffic control at this location, as Park Boulevard is a major roadway connecting State Route (SR) 13 and I-580.
  - Pursue an Encroachment Permit from the City of Piedmont that would potentially include work hour restrictions to avoid impacts to school traffic.
  - Note that there is landslide activity on Park Boulevard near Zion Lutheran School.
  - Concern with potential issues associated with a tower in a residential lot. Provide information about what would happen to the communication facilities on that tower and generally about other tower removals in residential lots.
  - Describe what is proposed to happen to the auxiliary parking lot adjacent to the Corpus Christi School.
  - Concern with underground utilities that may need to be shut off during construction.

- **April 7, 2025: East Bay Municipal Utility District (EBMUD)**
  - Provide proposed tower heights for assessment and avoidance of additional vegetation maintenance.
  - Four towers would require replacement on EBMUD watershed lands.
  - Concern about California red-legged frog and Alameda whipsnake.

- Concern about impacts to nesting birds from helicopters. Ensure PG&E coordinates with EBMUD prior to construction and accesses the documented known nest locations.
- Consult with EBMUD if a helicopter landing zone is located on EBMUD lands to determine if it is an appropriate location.

- **April 10, 2025: City of Orinda**
  - Consider preexisting concerns regarding emergency/wildfire evacuation issues in the City of Orinda.
  - Concern with the proximity of the helicopter staging area to the Wilder Ranch community.
  - State and ensure that the Project would be constructed within the City's permitted construction hours.
  - Concern with the use of Dolores Way for tower access during construction and operation.

The CPUC has notified tribal government representatives regarding the start of scoping for the MOX Project. More than 70 tribal representatives received notice of the start of scoping for this Project; the NOP was distributed to tribal representatives through U.S. Mail or via email depending on the available contact information. The CPUC will continue to coordinate with tribal governments and tribal representatives consistent with CEQA and Assembly Bill 52 requirements.

Agencies and Tribes contacted are listed in Table 2 and 3, respectively

Table 2. Agency Coordination

Agencies	
■ Alameda County Fire Department	■ East Bay Regional Park District
■ CAL FIRE Santa Clara Unit	■ Moraga-Orinda Fire District
■ City of Piedmont	■ Oakland Department of Transportation
■ City of Orinda	■ Oakland Fire Marshal
■ Contra Costa County Fire Protection District	■ Oakland Planning Department
■ East Bay Municipal Utility District	

Table 3. Tribal Coordination

Tribal Governments	
■ Amah Mutsun Tribal Band	■ Ione Band of Miwok Indians
■ Amah Mutsun Tribal Band of Mission San Juan Bautista	■ Jackson Rancheria Band of Miwuk Indians
■ Buena Vista Rancheria of Me-Wuk Indians	■ Muwekma Ohlone Tribe of the SF Bay Area
■ Calaveras Band of Mi-Wuk Indians	■ Nashville Enterprise Miwok-Maidu-Nishinam Tribe
■ Chicken Ranch Rancheria of Me-Wuk Indians	■ Northern Valley Yokut / Ohlone Tribe
■ Confederated Villages of Lisjan Nation	■ Pakan'yani Maidu of Strawberry Valley Rancheria
■ Costanoan Rumsen Carmel Tribe	■ The Ohlone Indian Tribe
■ Guidiville Rancheria of California	■ Wilton Rancheria
■ Indian Canyon Mutsun Band of Costanoan	■ Wuksachi Indian Tribe/Eshom Valley Band

4. SCOPING COMMENTS

A total of 59 written comment letters were submitted by email during the scoping period. A form letter was submitted by several community members and is included in the summary below. A total of 17 oral comments were taken during the virtual scoping meetings.

Attachment D, Written Scoping Comments, includes a table listing all commenters, as well as copies of all written comment letters in their original format. A summary of the key comments, from both oral and written comments, is included below.

4.1. Key Issues Raised during the Public Comment Period

Wildfire Risk

- Concern with wildfire risk associated with the Project, specifically regarding proposed aboveground lines in areas that are heavily wooded, densely populated, experience strong canyon winds, or have limited ingress and egress routes.
- Identify potential impacts from overhead lines, mitigation for wildfire, and prevention reduction measures.
- Consult with the Oakland Fire Department and discuss PG&E's Alternatives B and C, which underground the transmission lines in Diamond Canyon and Shepherd Canyon, both areas with high fire risk.
- Consider the recent wildfires in Los Angeles, California Department of Forestry and Fire Protection's (CAL FIRE) Fire Hazard Severity Zone map, and Executive Order N-18-25.
- Consider removal of the towers, especially those bordering residential areas, as it could provide a fire break that would allow for a fire road to be maintained above underground lines and remove the risk of fires associated with aboveground lines.
- Note that Orinda-Moraga was one of the top three areas identified as being at risk of experiencing the next Pacific Palisades-style disaster.
- Concern that the proposed towers would only be built to withstand 85 miles per hour (mph) winds while gusts over 80 mph have been documented in the area recently.
- Concern that PG&E is not making an effort to underground lines in high fire danger areas.
- Concern that the Montclair area only has three roads serving 10,000 residents and if a fire were to occur and result in a road blockage, it would be catastrophic.
- Concern that "hardening" utility poles does not mitigate wildfire risk given the high tree-fall-in risk, as noted in PG&E's Wildfire Mitigation Plan.
- Correct the CPUC's 10-year undergrounding plan to include significant portions of the Oakland Hills that have been omitted despite the 1991 wildfire and the passage of SB 884.
- Concern that Shepherd Canyon is a terrible area for the Project, as this is a high fire danger area with dense residential development and vegetation, heavy infrastructure, and difficult egress. This canyon is also a wind funnel that created the Oakland Hills fire in 1993.
- Request for explanation why the Oakland Fire Department had not been contacted.
- Maintaining high-voltage transmission lines overhead through the densely populated Very High FHSZ in Montclair poses an unacceptable risk.

- Concern that PG&E's PEA is inadequate as it fails to evaluate the consequences of wildfire risk associated with the proposed Project. The Wildfire Transmission Risk Model (WTRM) model used by PG&E does not reflect future climate change impacts on ignition risk. Request to consider the Project's impacts in the context of the environment that would exist in the coming decades.
- Concern that PG&E's PEA does not consider the potential environmental impacts from a fire in the Oakland Hills or estimate the lives and properties at risk from overhead power lines causing a fire.
- Consider and quantify the impacts of wildfire in the proposed overhead power line zones.
- Consider how fires associated with overhead power lines exacerbate the ongoing homeowners' insurance crisis, as outlined in Senate Bill 884.
- Concern that the small portion of underground lines is proposed as more of a PR token than a way to address the wildfire risks of aboveground lines.

Noise

- Concern that construction noise could disturb the residents who live near the Moraga Substation.
- Outline noise mitigation strategies the Project would employ to ensure Orinda residents would not be adversely impacted.
- Analyze the proposed use of helicopters, their potential to generate noise at a greater distance, and identify measures to reduce this impact.
- Confirm that the Project would comply with the City of Orinda Noise Control Ordinance Chapter 17.39, which states that construction of this magnitude should be limited to 8 a.m. to 6 p.m. on weekdays and from 10 a.m. to 5 p.m. on Saturday, not occur on Sunday, and not utilize heavy construction equipment on weekends.

Aesthetics

- Concern that the Project would result in significant and unmitigated aesthetic impacts related to height increase for some of the proposed structures and not undergrounding all transmission lines.
- Concern that PG&E's Environmental Analysis (EA) conclusion of less than significant aesthetic impacts is unsupported, because figures included in the EA illustrate both the impacts of overhead lines and the aesthetic improvements associated with underground lines. PG&E has also acknowledged that undergrounding would eliminate aesthetic impacts of aboveground structures.
- Consider the aesthetic impacts of rebuilding the outdated towers and continuing vegetation management.

Recreation

- Notify and coordinate with Park District staff prior to any work within Sibley Volcanic Regional Preserve (Sibley). Avoid crossing bridges with narrow turning areas within Sibley by using Gudde Ridge Trail and Arroyo Willow Trail. If access from Edgewood Road is not feasible, PG&E would access from Sibley's Eastport Staging Area off Pinehurst Road and use the first bridge crossing.
- Confirm that the Park District's future campground parking lot (50'x50') would be sufficient for helicopter landing and staging. Apply for a Temporary Park Access Permit with the Park District for a potential helicopter landing and staging area within the lot.
- Address needed road improvements along Gudde Ridge Trail north of the McCosker Loop Trail junction and along the service road leading up to transmission towers EN9 and ES10, and coordinate with Park District Park Operations staff on these improvements.

- Coordinate the construction timeline with Park District staff to ensure it does not conflict with Fiddleneck Campground construction or operations, as the transmission lines proposed to be replaced go over this area.
- Provide Project notices of future referrals, environmental review, and public hearings to the Park District.

Transportation and Traffic

- Concern that the Moraga Substation is only accessible by one, two-lane road that serves as the primary entrance and exit for the Lost Valley Drive neighborhood.
- Identify strategies to minimize impacts on traffic, such as street closures and hazardous conditions for pedestrians and vehicles.
- Identify what mitigation strategies would be in place in the event of an emergency to preserve access for emergency services and evacuation routes.

Utilities and Service Systems

- Coordinate construction activities with the East Bay Municipal Utility District (EBMUD) to maintain the integrity of water distribution and transmission pipelines that exist throughout the Project site. Provide 18 months advance notification for street improvement projects to allow for reasonable time to perform water pipeline relocations. See the provided typical schedule for design and relocation of approximately 1,500 feet of 8-inch water pipeline.
- EBMUD will not provide design or services until soil and groundwater quality data and associated remediation plans have been reviewed and will not start underground work until any contaminated soil and groundwater are remediated to EBMUD standards and documentation of the effectiveness of the remediation has been received and reviewed.
- EBMUD's water distribution pipelines and valves must always be accessible to EBMUD staff to maintain high-quality domestic water and fire flow services and mitigation for pipeline outages.
- Note that PG&E is responsible for protecting in-place pipeline valves and ensuring they are accessible during and after construction. Recommend reviewing EBMUD as-built drawings and identifying potential utility conflicts between the Project and existing EBMUD pipelines. See attached EBMUD guidelines for requesting pipeline as-built drawings.
- Review EBMUD's Design Standards and Specifications for mains 20-inches and smaller when evaluating the need and method for relocating or adjusting EMBUD infrastructure.
- Share locations of utility conflicts with EBMUD pipeline valve covers as well as existing and final pavement grade elevations.
- EBMUD supports PG&E in street improvements by relocating water meters to meet project goals and design standards and mitigate utility conflict. Once the new meter location is ready, PG&E must relocate the customer's private water service line to the new meter location.
- Ensure that there are no conflicts with existing EBMUD fire hydrants, new curb ramps, or sidewalks. Ensure that fire hydrants are located 5 feet from the edge of curb ramps and 20 to 24 inches from the face of street curbs. Note that hydrant relocations require the County to submit a Hydrant Relocation Application.
- Invite EBMUD's Central Area Service Center Superintendent, Central Area Assistant Superintendent, and East Area Assistant Superintendent to all pre-construction meetings.

Cultural and Tribal Cultural Resources

- Must provide Notice of Completion of an application/decision to undertake the project to a tribal representative of California Native American tribes that have requested notice.
- Must begin consultation process within 30 days of receiving a request for consultation from a California Native American tribe.
- Require discussion of mandatory topics of consultation if requested by a tribe.
- Recommend discussion of discretionary topics of consultation.
- Require confidentiality of information submitted by a tribe during the environmental review process.
- Require discussion of impacts to Tribal Cultural Resources in the environmental document.
- Conclude consultation with a tribe when parties agree to measures to mitigate or avoid a significant effect, or a party acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.
- Recommend mitigation measures agreed upon in consultation.
- Require feasible mitigation pursuant to Public Resources Code section 21084.3(b).
- Recommend mitigation measures that may be considered to avoid or minimize significant adverse impacts to Tribal Cultural Resources.
- Require meeting prerequisites for certifying an EIR or adopting a Mitigated Negative Declaration/ Negative Declaration with a significant impact on a Tribal Cultural Resource.
- Require consulting with the appropriate tribes identified by the NAHC by requesting a Tribal Consultation List.
- Conclude Senate Bill 18 tribal consultation when parties come to a mutual agreement concerning mitigation measures or the local government or tribe concludes that mutual agreement cannot be reached.
- Recommend contacting the appropriate regional California Historical Research Information System Center for an archaeological records search.
- Recommend preparation of a professional report detailing findings and recommendations of the research search and field survey if an archaeological inventory survey is required.
- Contact the Native American Heritage Commission (NAHC) for a Sacred Lands File search and Native American Tribal Consultation List.

Biological Resources

- Incorporate buffer zones to limit Project activities to areas outside of and away from sensitive habitats, that at a minimum for smaller streams include a 50-foot riparian buffer and larger buffers for mainstem streams and rivers. Consult with CDFW if needed to determine appropriate buffers to reduce impacts to sensitive species and critical habitat to less-than-significant levels.
- Establish a complete inventory of special-status species with the potential to occur within the Project area. Require detailed habitat assessments by a qualified biologist along the Project area to determine the presence of suitable habitat for individual plant and wildlife species and perform protocol-level surveys if habitat exists to determine the presence or absence of special-status species. Provide appropriate mitigation measures to ensure impacts to these species are reduced to less-than-significant levels if they are documented within the Project area. Apply for a California Endangered Species Act (CESA)

take authorization under an Incidental Take Permit (ITP) if impacts to CESA-listed species cannot be avoided.

- Recommend the Draft EIR include all effective and feasible design features and measures to avoid or reduce collision and electrocution risks on volant (birds and bats) species. Ensure the Project is consistent with the Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006.
- Define the term and seasonal work window of Project activities, as the timeframe will aid in assessing impacts on species in the Project area and allow for the development of appropriate compensatory mitigation.
- Include mapping of the geology and hydrology of the Project area as well as mapping and description of any drilling activities including detailed locations and depths of underground lines that may pass under sensitive habitats.
- Consider if dewatering activities associated with drilling may be necessary.
- Obtain a Lake and Streambed Alteration Agreement for any drilling activities that may affect the bed, bank, or channel of a lake or stream.
- Identify the amount of required vegetation removal, and whether this would include tree removal and other vegetation impacts. The City of Orinda may not support the removal of trees, particularly trees protected under the Orinda Municipal Code without proper analysis permits and/or restitution.
- Analyze impacts on Sausal Creek, which has a native population of Rainbow Trout and other aquatic species, from erosion and sedimentation associated with the transmission line and maintenance in Shepherd Canyon.

Geology and Soils

- Concern that previous tree removal and maintenance by PG&E crews would cause erosion and landslides; therefore, proposed undergrounding should happen as soon as possible.
- Concern with the steep slopes in Shepherd Canyon and associated high erosion potential that is worsened by the transmission line right of way and could be exacerbated by the Project. Include applicable erosion control measures.

4.1.1. Alternatives

- Consider moving all or more of the overhead lines underground due to the high fire risk in the Project area between the Moraga Substation and Park Boulevard.
- Consider wildfire risk when deciding which power lines to underground.
- Consider undergrounding all high voltage power lines in the Oakland and Berkeley area, as this area is very densely populated, and the 1991 fires and recent Palisades fire demonstrate the need to underground lines in high fire risk areas.
- Consider undergrounding all electrical lines in the Montclair Hills area.
- Amend the proposal to either underground or relocate the transmission line in Montclair to a less wooded and densely populated area.
- Require new underground 115 kV lines from approximately Estates Drive to Skyline Boulevard instead of rebuilding that segment aboveground.
- Prefer higher costs if it would ensure that more power lines would be undergrounded and wildfire risk would be reduced.

- Adopt PG&E's Alternative B or C, which underground the transmission lines throughout Diamond Canyon and Shepherd Canyon, both areas of high fire risk.
- Adopt PG&E's Alternative B, as it provides more undergrounding and greater public safety compared to the current plan, which does not contain enough undergrounding to adequately protect Oakland.
- Provide additional information and explanation for rejecting PG&E's Alternatives B and C.
- Consider undergrounding the lines now when they are already being worked on to save time and money as well as minimize fire hazard, as they will eventually need to be moved underground.
- Mandate undergrounding of electrical lines for all projects in "very high" fire danger severity zones or near significant nature preserves, parks, and residential areas, as a standard practice to create safer, more resilient energy infrastructure that prevents future tragedies and aligns with SB 884. Past and recent fires have illustrated the risk of overhead lines and how they exacerbate these risks as well as the homeowners' insurance crisis.
- Undergrounding power lines, despite higher upfront costs, offers long-term benefits like reducing wildfire risks, improving grid reliability, and enhancing public safety.
- Implement new infrastructure solutions that prioritize resilience and sustainability to mitigate wildfire risks due to the increasing frequency and intensity of wildfires in California.
- PG&E's Wildfire Mitigation Plan acknowledges that undergrounding power lines significantly reduces wildfire ignition risk and has successfully implemented it in other high-risk areas.
- Consider that underground lines would mitigate PG&E's justification for rate increases as a result of tree pruning costs and that reducing vegetation management would provide financial, environmental, and aesthetic benefits and ensure ratepayers' funds are used responsibly.
- Address the feasibility of undergrounding the section of powerlines that span Orinda.
- Describe the differences and reasoning for underground lines in Oakland and overhead lines in Orinda.
- EBRPD stated preference for the proposed Project because it would have fewer impacts to woodland habitat in Sibley and Huckleberry Botanic Regional Preserve compared to PG&E's Alternative E (Overhead Campground Option), which would involve tree removal and additional associated impacts outside of PG&E's existing right-of-way.
- In its PEA, PG&E did not meaningfully consider underground alternatives or explain why they were rejected within Park Boulevard between SR-13 and Estates Drive, within Mountain Boulevard from S-13 to Shepherd Canyon Road, and within Shepherd Canyon Road from Mountain Boulevard to Saroni Drive.
- Mandate a full environmental scoping and evaluation of complete undergrounding and/or removal of overhead transmission lines in this high-risk, heavily forested, and densely populated area, including the Montclair neighborhood.
- Provide an explanation for why the transmission lines in the city of Piedmont, a lower fire risk area, would be underground and not the areas with the greatest fire risk.
- Reconsider the proposed locations of underground lines, as Piedmont is not as vulnerable as other areas that have more homes at risk of wildfire and high winds.
- Concern that PG&E discounted the underground alternative without fully evaluating the feasibility under CEQA Section 15364 with quantitative assessment or objective standards. Ensure assessment of economic feasibility for the underground alternative is made in comparison to the full economic

impacts of not undergrounding, which would include PG&E's exposure to liability for damages from wildfire and PG&E's transfer of economic harm to the surrounding community.

- Replace current infrastructure with new technology, because this is a generational project addressing 100-year-old infrastructure. Using the same type of infrastructure would expose this area to climate change and increased wildfire risk that would result in loss of life and homes. This is especially important due to the increase in dense vegetation and residential development as well as the high fire risk and the Altadena Fire that was likely caused by a transmission tower.
- Prioritize removing the line to permanently reduce wildfire risk and hardening other lines in lower-risk zones or undergrounding it.
- Consider other routes for this transmission line in lower-risk areas if they exist, because the Project area, specifically Shepherd Canyon and Oakland, are high fire danger areas.
- Concern that the line is proposed to remain intact in the highest wildfire area after PG&E stated in public notifications that undergrounding saves money because of the reduction in required vegetation management. Concern that the explanation provided by a PG&E spokesperson which stated that this was due to easements and land rights was unsatisfactory, because it was based on convenience and did not consider the potential risk associated with loss of homes and lives associated with this infrastructure.
- Consider that this is an opportunity to take big steps and do something transformational for future generations rather than taking the cheaper route that would expose residents to high fire risk.
- Supports undergrounding the entire lines, as aboveground lines increase the risk of brownouts, which are reductions or restrictions on electrical power availability.
- Concern that the reason for undergrounding along Park Boulevard is purely based on cost.
- Recommend that everyone look at the six major transmission lines serving Oakland and other areas in the East Bay as they have substantial clearance around them, which differs from the lines in the Shepherd Canyon area that are surrounded by houses and vegetation.
- The Montclair neighborhood has already seen the devastating effects of the Tunnel Fire in 1991, including the loss of homes and lives as well as many injuries. This very high fire danger severity zone calls for mandatory undergrounding of all electrical lines. If onsite inspections had taken place, undergrounding the entire Project would have been proposed.
- Include an analysis of all the costs associated with not undergrounding all lines to show that ROI of earlier undergrounding is the cost-effective option.
- Opposes the current proposal that would replace century-old transmission towers with new overhead towers through the Montclair neighborhood.
- Describe the alternative options listed on the last page of the scoping meeting presentation.
- Develop a proposal consistent with PG&E's Alternative B.
- Supports PG&E's Alternative B as a minimum step.
- PG&E's PEA does not adequately quantify the reduction in environmental impact from a lower-risk alternative (Alternative B).
- PG&E's PEA does not adequately analyze the rejection of PG&E's Alternative B due to economic reasons.
- Calculate and compare reductions in wildfire risk associated with PG&E's Alternative B and other fully underground alternatives to the risks of the proposed Project.

- Suggestion that PG&E should make the infrastructure investment in an area that hosts one of their largest substations and is located in the highest wildfire risk zone.
- Concern that individual homeowners have to assume responsibility for climate change, especially when they are already paying for fire protection compliance and increased PG&E rates and insurance payments. Concern that more accountability needs to be placed on the utility that has been the cause of these fires.
- Explain why the infrastructure in Shepherd Canyon would be kept in place, as it is very old and needs to be removed due to the changing environment and risk of exposed lines, as demonstrated by the recent Los Angeles fires.
- Explain whether proposed improvements for the two towers on Sayre Drive could be moved to avoid the adjacent house and construction disruption.

4.1.2. Notice and Public Participation

- Residents in the Montclair Hills area near the PG&E lines and infrastructure did not receive notification that PG&E said was provided.
- Request that PG&E do a more thorough job of outreach to individual property owners that would be affected by the Project before the Project progresses more.
- Provide the date of the next public discussion opportunity.
- Concern that PG&E did not meaningfully engage with residents in the Montclair area, which undermines public trust and raises concerns about procedural fairness.
- Investigate whether PG&E met its public notification obligations in spring 2024.
- Hold public hearings in Montclair to ensure community input is received.

4.1.3. Project Need

- Support for the Project, PG&E making the proposed improvements, and hardening its infrastructure.
- Support for responsible maintenance and repair of aging PG&E infrastructure to improve system reliability and reduce hazards.
- Concern that the proposed Project contradicts PG&E's previous meeting that described the relocation of the lines in Shepherd Canyon. Explain what happened to the original plan.

4.1.4. Project Description

- Provide more information about the temporary staging areas proposed for construction, and determine which locations are being considered for staging areas in Orinda, particularly those that may be used for helicopter landing zones (HLZs).
- Provide detailed information about proposed improvements for the two towers on Sayre Drive. Explain whether they would be fully replaced and whether they would be on the same footprint. Provide the estimated duration of construction equipment on the property, the proposed heights, and the quantity of wires.
- Explain how residential landscaping would be avoided during construction.
- Clarify the Project schedule.
- Describe what happens to the land after the lines are moved underground.

5. NEXT STEPS IN EIR PROCESS

While scoping is the initial step in the environmental review process, additional opportunities to comment on the EIR will be provided. Consistent with CEQA, CPUC will provide for additional public input when the Draft EIR is released for public comment and at the decision hearing before the CPUC. Figure 1, EIR Process, provides information on where in the EIR process the public has an opportunity for public comment.

Figure 1. EIR Process

5.1. EIR Events and Documents

Table 4. EIR Events and Documents (as of April 2025)

Document/Event	Purpose	Preliminary Schedule
Draft EIR		
Release of Draft EIR	Presents impacts and mitigation for the proposed Project	3rd Quarter 2025
Public Review Period	45-day public review period of the Draft EIR	3rd Quarter 2025
Draft EIR Public Hearing	Allows for public comment on the draft document	August/September 2025
Final EIR		
Release of Final EIR	Presents revisions to the Draft EIR and responses to comments on the Draft EIR raising significant environmental issues	December 2025
Notice of Determination	CPUC certifies EIR and issues a Determination on the proposed Project	February 2026

Attachment A

NOTICES

2025-00072

FILED

March 13, 2025

KRISTIN B. CONNELLY

CLERK-RECORDER

By _____

J. Lara

Deputy Clerk

PUBLIC UTILITIES COMMISSION

STATE OF CALIFORNIA

505 VAN NESS AVENUE | SAN FRANCISCO, CALIFORNIA 94102

To: **State Clearinghouse, Responsible and Trustee Agencies, Property Owners & Interested Parties**

From: **Ms. Tharon Wright, CPUC Project Manager**

Subject: **Notice of Preparation (NOP) of an Environmental Impact Report (EIR) and Notice of Public Scoping Meeting for the Moraga-Oakland X Project (A.24-11-005)**

Date: **February 25, 2025**

Introduction

Pacific Gas and Electric Company (PG&E) filed a Permit to Construct (PTC) application (A.24-11-005) with the California Public Utilities Commission (CPUC) for its proposed Moraga-Oakland X 115 kilovolt (kV) Rebuild Project (Project). The Project is being considered in the 2024-2025 CAISO Transmission Planning Process (TPP), but it was not part of a competitive bid process because it is a maintenance project and rated at 115 kV. As such, the purpose of the Project is to replace power line equipment that has reached the end of its useful life. This maintenance is needed for safe operation of the lines. The objectives of the Project are to rebuild the four-circuit power line path with new equipment including replacing the existing conductor with a larger size to accommodate future energy demands, to ensure the lines are rebuilt with adequate line clearances between the ground or land use, and to construct a safe, economical, and technically feasible project that minimizes environmental and community impacts.

The CPUC, as lead agency under the California Environmental Quality Act (CEQA), will prepare an Environmental Impact Report (EIR) to analyze the effects of the proposed Project in compliance with CEQA. The CPUC has reviewed PG&E's application submitted on November 15, 2024, and deemed the application complete on December 12, 2024. In order to obtain early feedback on the environmental issues to be addressed in the EIR, the CPUC is initiating the scoping process to inform the CEQA review with a 30-day scoping period from February 25 through March 27, 2025.

What is Scoping?

The purpose of this NOP is to inform recipients that the CPUC is beginning the scoping process and preparing an EIR for the Project. Scoping is the process of soliciting public and agency input regarding the scope and content of an EIR, in advance of its preparation. Pursuant to CEQA, the CPUC is requesting comments to inform the scope and content of the EIR and help identify the actions, alternatives, mitigation measures, and environmental effects to be analyzed in the EIR.

This notice includes a brief description of the Project, a brief summary of the anticipated potential impacts, information on public meetings, and how to provide input on the scope and content of the EIR. After the public scoping period has ended, a Scoping Report will be prepared to summarize the comments received. This NOP and the Scoping Report will be included as an appendix to the EIR and is also available on the CPUC's website for the

Kristin B. Connelly
Contra Costa
Clerk-Recorder
555 Escobar Street
Martinez, CA 94553
(925) 335-7900

Public

Finalization No.: 202500024120
Cashier: jlara
Register: CLERKPC23
Date/Time: 03/13/2025 02:37 PM

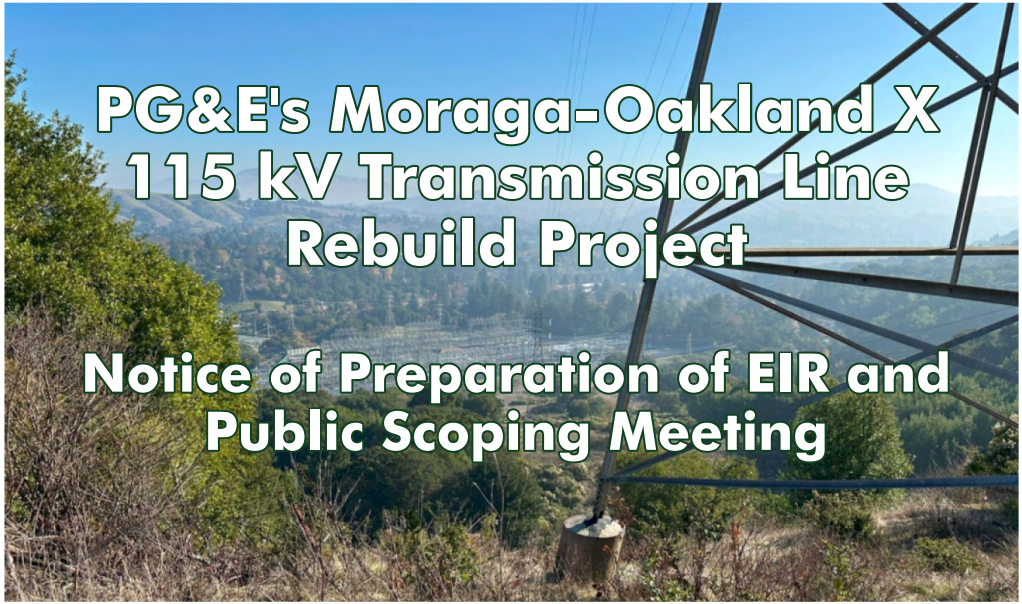
Description	Fee
NOTICE OF PREPARATION	
Filing Time:	02:37 PM
Filing Total:	No Fee
Filing Fee:	No Fee

Total Amount Due:

Total Paid

Amount Due: $0.00

THANK YOU
PLEASE KEEP FOR REFERENCE



PG&E's Moraga-Oakland X 115 kV Transmission Line Rebuild Project

Notice of Preparation of EIR and Public Scoping Meeting

YOU ARE INVITED

The California Public Utilities Commission (CPUC) invites you to learn about and comment on the Moraga-Oakland X Rebuild Project, proposed by Pacific Gas and Electric Company (PG&E).

Two virtual public scoping meetings will be held to provide information about the CPUC's review process and accept comments on the scope of an upcoming Environmental Impact Report (EIR) to be prepared by the CPUC.

Comments can be submitted verbally during the scoping meeting, or via email during the scoping comment period, which ends March 27, 2025. See information on back.

Meeting Information

Thursday, March 13, 2025
2:30 to 4:00 p.m.

Attend by Zoom:
https://us02web.zoom.us/j/84175864740

Attend by Phone:
(669) 444-9171 then enter
Webinar ID: **841 7586 4740**

Thursday, March 13, 2025
5:30 to 7:00 p.m.

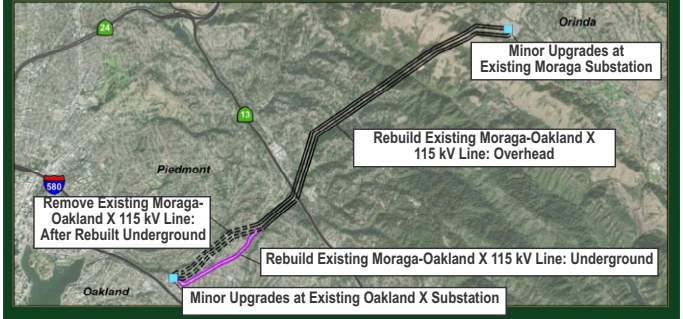
Attend by Zoom:
https://us02web.zoom.us/j/82814611227

Attend by Phone:
(669) 900-6833 then enter
Webinar ID: **828 1461 1227**

To submit written comments via email:

Address to: Tharon Wright, CPUC
Subject line: Moraga-Oakland X Project

MOX@aspeneg.com



For more information:

https://ia.cpuc.ca.gov/environment/info/aspen/moraga-oakland/moraga-oakland.htm

California Public Utilities Commission
c/o Aspen Environmental Group
235 Montgomery Street, Ste. 967
San Francisco, CA 94104-2920

From: PG&E Moraga-Oakland X 115 kV Rebuild Project
Sent: Tuesday, February 25, 2025 4:23 PM
To: tharon.wright@cpuc.ca.gov
Subject: PG&E Moraga-Oakland X 115 kV Rebuild Project - Notice of Preparation of a Draft EIR (SCH #2025-02-0944)

*****This is a duplicate notification with the Notice of Preparation file attached*****

Dear Interested Parties,

The California Public Utilities Commission (CPUC) has published the ***Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for Pacific Gas and Electric Company's (PG&E's) Moraga-Oakland X (MOX) 115 Kilovolt (kV) Rebuild Project*** (Project). The attached NOP includes a description of the proposed Project, environmental effects that have been identified thus far for consideration in the EIR, and details on the 30-day scoping period. **Written scoping comments must be submitted via email by March 27, 2025, for inclusion in the Draft EIR to MOX@aspeneg.com.**

In addition, the CPUC will hold two virtual project scoping meetings to obtain input from agencies and the public on the scope and content of the EIR at:

Virtual Scoping Meetings – Thursday March 13, 2025	
2:30 to 4:00 p.m. *Attend by Zoom:* https://us02web.zoom.us/j/84175864740 *Attend by Phone:* (669) 444-9171 then enter Webinar ID: 841 7586 4740	**5:30 to 7:00 p.m.** *Attend by Zoom:* https://us02web.zoom.us/j/82814611227 *Attend by Phone:* (669) 900-6833 then enter Webinar ID: 828 1461 1227

Project Background: The MOX Project would involve proposed upgrades to approximately 5-miles of four overhead 115 kV power lines between Moraga and Oakland X substations in the City of Orinda, unincorporated areas of Contra Costa County, and the cities of Oakland and Piedmont within Alameda County. The two existing parallel double-circuit power lines are located within existing PG&E land rights, and the Project would rebuild the four overhead lines into four hybrid lines, with both overhead (~4 miles) and underground (~1 mile) segments.

Existing towers, poles and conductors would be replaced either with overhead rebuild or underground components, and minor modifications would occur within the existing substations. Some recently replaced power line structures would be reused or reused with some modification. Single circuit transition structures would support the connection between the overhead and underground portions of each line. Double-circuit transition structures would be used to connect the underground portion to existing overhead line terminals at Oakland X Substation. Additionally, the rebuild would include the installation of optical ground wire on aboveground structures with a communication cable continuing within the underground portion.

The CPUC is the lead agency responsible for environmental review of the project in compliance with the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq.

Document Availability: For electronic access to the NOP (in addition to the attached document PDF), please check the project website at the link below.
https://ia.cpuc.ca.gov/environment/info/aspen/moraga-oakland/moraga-oakland.htm

Thank you for your interest in the project.

Sincerely,
The MOX EIR Team

Attachment B

NEWSPAPER ADVERTISEMENTS

Contra Costa Times
(925) 943-8019

Legal No. **6881773**

3866329

Aspen Environmental Group
Connor King
5020 Chesebro St., #200
Agoura Hills, CA 91301-2285

PROOF OF PUBLICATION

FILE NO. MOX Scoping Announcement

Contra Costa Times

I am a citizen of the United States. I am over the age of eighteen years and I am not a party to or interested in the above entitled matter. I am the Legal Advertising Clerk of the printer and publisher of the Contra Costa Times, a newspaper published in the English language in the City of Walnut Creek, County of Contra Costa, State of California.

I declare that the Contra Costa Times is a newspaper of general circulation as defined by the laws of the State of California as determined by court decree dated October 22, 1934, Case Number 19764. Said decree states that the Contra Costa Times is adjudged to be a newspaper of general circulation for the City of Walnut Creek, County of Contra Costa and State of California. Said order has not been revoked.

I declare that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

February 27, 2025

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.

Executed at Walnut Creek, California.
On this 27th day of February, 2025.

Signature

Notice of Public Scoping Meetings for Moraga-Oakland X Project
Proposed by Pacific Gas & Electric Company
CPUC Application No. A.24-11-005

The California Public Utilities Commission (CPUC) is preparing an Environmental Impact Report (EIR) for the Moraga-Oakland X (MOX) Project proposed by Pacific Gas & Electric Company (PG&E). The CPUC is lead agency under the California Environmental Quality Act (CEQA) and will hold two virtual public scoping meetings during a 30-day public comment period to obtain input from agencies and the public on the scope and content of the EIR.

Virtual Scoping Meetings – Thursday March 13, 2025
2:30 to 4:00 p.m.
Attend by Zoom:
https://us02web.zoom.us/j/84175864740
Attend by Phone:
(669) 444-9171 then enter
Webinar ID: 841 7586 4740

5:30 to 7:00 p.m.
Attend by Zoom:
https://us02web.zoom.us/j/82814611227
Attend by Phone:
(669) 900-6833 then enter
Webinar ID: 828 1461 1227

The CPUC's CEQA scoping comment period ends on March 27, 2025. During the comment period you may submit comments on the scope and content of the document verbally at the virtual public meetings noted above or by electronic mail to MOX@aspeneg.com.

Project Description
The MOX Project would rebuild four overhead 115 kV power line circuits that span approximately 5 -miles between PG&E's Moraga and Oakland X substations. The two existing parallel double-circuit lines will be rebuilt as hybrid power lines, meaning the two double-circuit lines between the two substations will have both overhead and underground portions. Existing towers, poles and conductors will be replaced either with overhead rebuild or underground components, and minor modifications will occur within the existing substations. Some recently replaced power line structures will be reused or reused with some modification. Single-circuit transition structures will support the connection between the overhead and underground portions of each circuit. Double-circuit transition structures will be used to connect the underground portion to existing overhead circuit terminals at Oakland X Substation. Additionally, the rebuild will include the installation of a static ground wire and an optical ground wire connecting to each aboveground structures with grounding and a telecommunication cable continuing within the underground portion.

ADDITIONAL INFORMATION
Information regarding the project's environmental review process, project documents, and contact information, can be found on the CPUC's project website at:
https://ia.cpuc.ca.gov/environment/info/aspen/moraga-oakland/moraga-oakland.htm
For more information e-mail the project team at MOX@aspeneg.com.

CCT 0006881773: Feb. 27, 2025

Oakland Tribune
(510) 723-2850

Legal No. **6881771**

3866329

Aspen Environmental Group
Connor King
5020 Chesebro St., #200
Agoura Hills, CA 91301-2285

PROOF OF PUBLICATION

Moraga-Oakland X Scoping Announcement

Oakland Tribune
The Oakland Tribune

I am a citizen of the United States; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the Legal Advertising Clerk of the printer and publisher of The Oakland Tribune, a newspaper published in the English language in the City of Oakland, County of Alameda, State of California.

I declare that The Oakland Tribune is a newspaper of general circulation as defined by the laws of the State of California as determined by this court's order, dated December 6, 1951, in the action entitled In the Matter of the Ascertainment and Establishment of the Standing of The Oakland Tribune as a Newspaper of General Circulation, Case Number 237798. Said order states that "The Oakland Tribune is a newspaper of general circulation within the City of Oakland, and the County of Alameda, and the State of California, within the meaning and intent of Chapter 1, Division 7, Title 1 [§§ 6000 et seq.], of the Government Code of the State of California." Said order has not been revoked, vacated, or set aside.

I declare that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

February 28, 2025

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.

Executed at Rio Vista, California.
Dated: February 28, 2025

Public Notice Advertising Clerk

Notice of Public Scoping Meetings for Moraga-Oakland X Project
Proposed by Pacific Gas & Electric Company
CPUC Application No. A.24-11-005

The California Public Utilities Commission (CPUC) is preparing an Environmental Impact Report (EIR) for the Moraga-Oakland X (MOX) Project proposed by Pacific Gas & Electric Company (PG&E). The CPUC is lead agency under the California Environmental Quality Act (CEQA) and will hold two virtual public scoping meetings during a 30-day public comment period to obtain input from agencies and the public on the scope and content of the EIR.

Virtual Scoping Meetings – Thursday March 13, 2025
2:30 to 4:00 p.m.
Attend by Zoom:
https://us02web.zoom.us/j/84175864740
Attend by Phone:
(669) 444-9171 then enter
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(669) 900-6833 then enter
Webinar ID: 828 1461 1227

The CPUC's CEQA scoping comment period ends on March 27, 2025. During the comment period you may submit comments on the scope and content of the document verbally at the virtual public meetings noted above or by electronic mail to MOX@aspeneg.com.

Project Description
The MOX Project would rebuild four overhead 115 kV power line circuits that span approximately 5 -miles between PG&E's Moraga and Oakland X substations. The two existing parallel double-circuit lines will be rebuilt as hybrid power lines, meaning the two double-circuit lines between the two substations will have both overhead and underground portions. Existing towers, poles and conductors will be replaced either with overhead rebuild or underground components, and minor modifications will occur within the existing substations. Some recently replaced power line structures will be reused or reused with some modification. Single-circuit transition structures will support the connection between the overhead and underground portions of each circuit. Double-circuit transition structures will be used to connect the underground portion to existing overhead circuit terminals at Oakland X Substation. Additionally, the rebuild will include the installation of a static ground wire and an optical ground wire connecting to each aboveground structures with grounding and a telecommunication cable continuing within the underground portion.

ADDITIONAL INFORMATION
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https://ia.cpuc.ca.gov/environment/info/aspen/moraga-oakland/moraga-oakland.htm
For more information e-mail the project team at MOX@aspeneg.com.

OT 0006881771: Feb. 28, 2025

Attachment C

SCOPING MEETING PRESENTATION

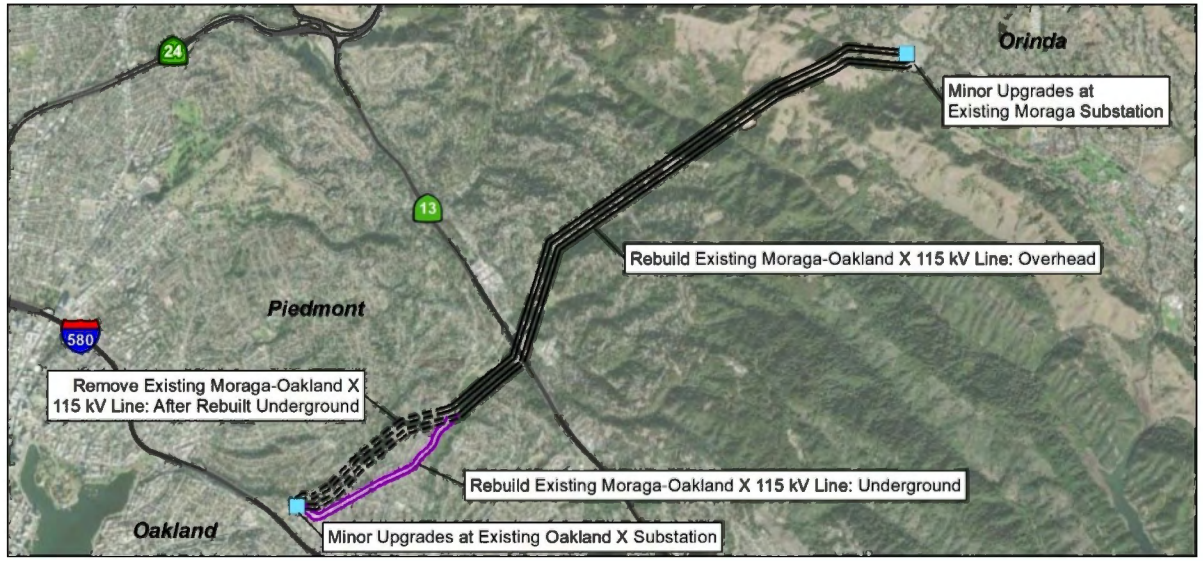
CPUC A.24-11-005 Proceeding

PG&E's Moraga-Oakland X (MOX) 115 kV Rebuild Project

Webpage: Pacific Gas and Electric Company's Moraga-Oakland X 115 kV Rebuild Project

CEQA Scoping Meeting

California Public Utilities Commission,
Energy Division



California Public Utilities Commission

March 13, 2025

*Please note that this meeting will be recorded

Meeting Guidelines

- All attendees will be muted during the presentation.
- Please note that the **CHAT** box will be monitored, but questions will not be answered live. If you have a question, please reach out to the CPUC via email at: MOX@aspeneg.com.
- You may submit a written scoping comment via **CHAT** box if you wish, but email is preferred.
- If you would like to make an **oral scoping comment**, please wait until the end of the presentation. When we ask for scoping comments, use the **RAISE HAND** feature and we will call on you to speak.
- **Note**: This meeting is being recorded.

Scoping Meeting Agenda

- Introductions
- Purpose of the Meeting
- Application and Permitting Process
- Environmental Review Process (CEQA)
- Project Overview
- Scoping: Environmental Impacts & Alternatives
- Public Comments
- Next Steps

Introductions

State Lead Agency (CEQA):

- California Public Utilities Commission (CPUC)
  - Tharon Wright, CPUC Project Manager

CEQA Consultant:

- Aspen Environmental Group
  - Hedy Koczwara, Aspen Project Manager
  - Grace Weeks, Aspen Deputy Project Manager

Project Applicant:

- Pacific Gas and Electric Company (PG&E)

Purpose of this Meeting

To inform the public, agencies, and interested parties about the project and the environmental review process.

To receive input to inform the scope and content of the environmental review and identify issues of concern.

Your ideas are welcome and invited!

What is Scoping?

- Scoping is the process of soliciting public and agency input regarding the scope and content of an EIR, in advance of its preparation.

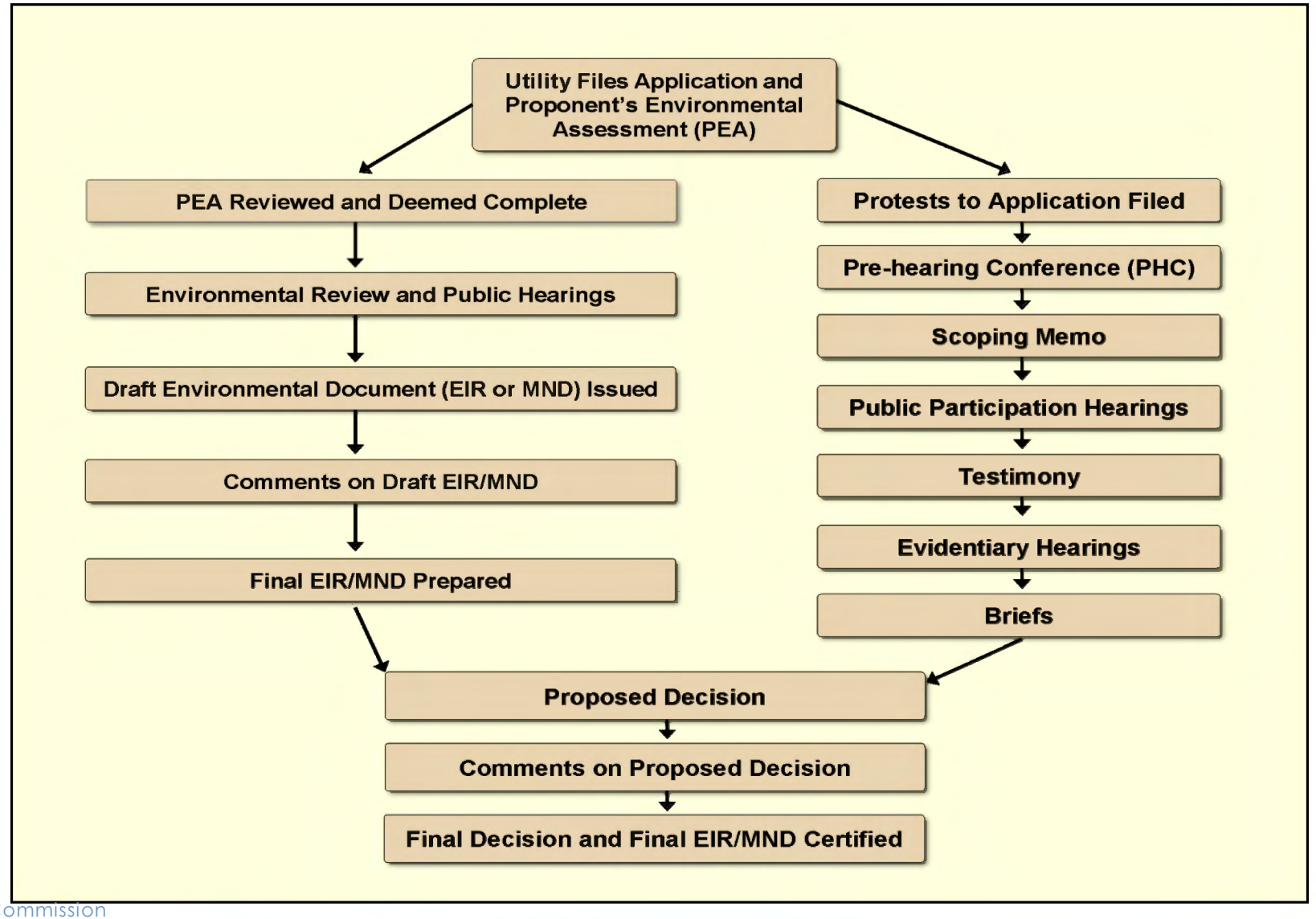
- CPUC is requesting comments to inform the scope and content of the EIR and help identify the project actions, alternatives, environmental effects, and mitigation measures to be analyzed.

Role of California Public Utilities Commission

The CPUC is conducting two parallel review processes for this PG&E Application for a Permit to Construct (PTC):

1. **General Proceeding**: Application # A.24-11-005
   - Assigned Commissioner *Karen Douglas*
   - Administrative Law Judge *David van Dyken*
   - See flow chart on next slide
2. **Environmental Review**: State Clearinghouse #2025-02-0944
   - CPUC is Lead Agency for CEQA process
   - Application is typically deemed complete before Scoping begins
   - Schedule includes ongoing consultation with Native American Tribes

CPUC Process (Generalized)



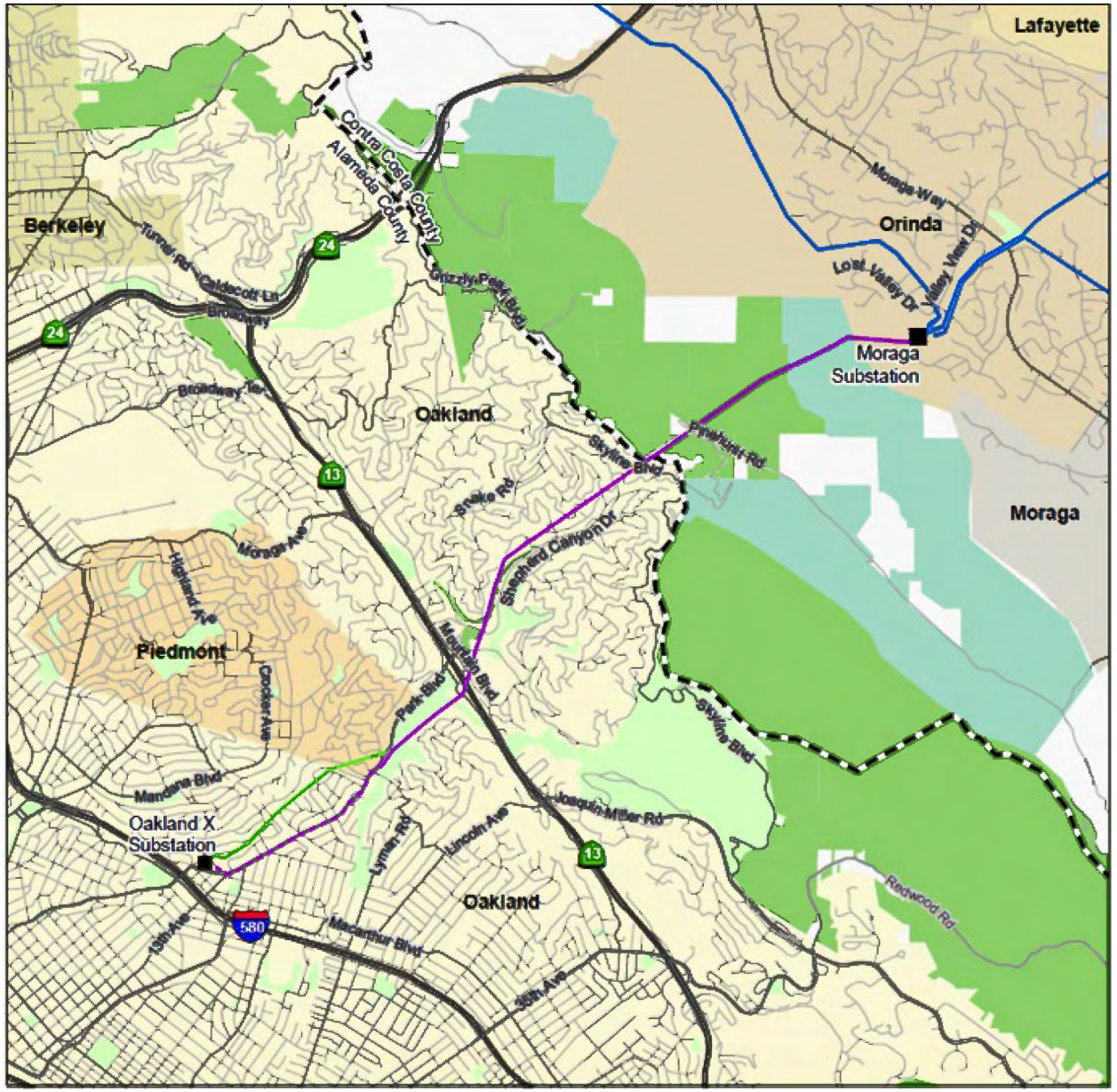
CEQA Overview

- Purpose of the California Environmental Quality Act (CEQA) is to:
  - Inform decision makers and the public about the potential significant environmental effects of a proposed project.
  - Identify ways that environmental damage can be avoided or significantly reduced.
  - Prevent significant, avoidable damage to the environment through the use of alternatives or mitigation measures.
  - Disclose to the public the reasons why a governmental agency approved the project if significant environmental effects are involved.
- Focus on physical impacts to the environment.

CEQA EIR Process

MOX Project Location

- Alameda County
  - Cities of Oakland & Piedmont
- Contra Costa County
  - Unincorporated County
  - City of Orinda



Legend

- Substation
- Existing 230 kV Transmission Line
- State Route/Highway
- Arterial
- Local Street

Project Components

- Four Existing Overhead 115 kV Lines to be Rebuilt in Same Overhead Configuration
- Four New Underground 115 kV Lines
- Four Existing Overhead 115 kV Lines to be Removed

- East Bay Regional Park District
- EBMUD Property
- Other Park or Recreation Area
- County Boundary
- City of Berkeley
- City of Moraga
- City of Lafayette
- City of Oakland
- City of Orinda
- City of Piedmont

Moraga-Oakland X 115 kV Rebuild Project

Proposed by
Pacific Gas & Electric Company

0 1
Miles

Proposed Project Purpose

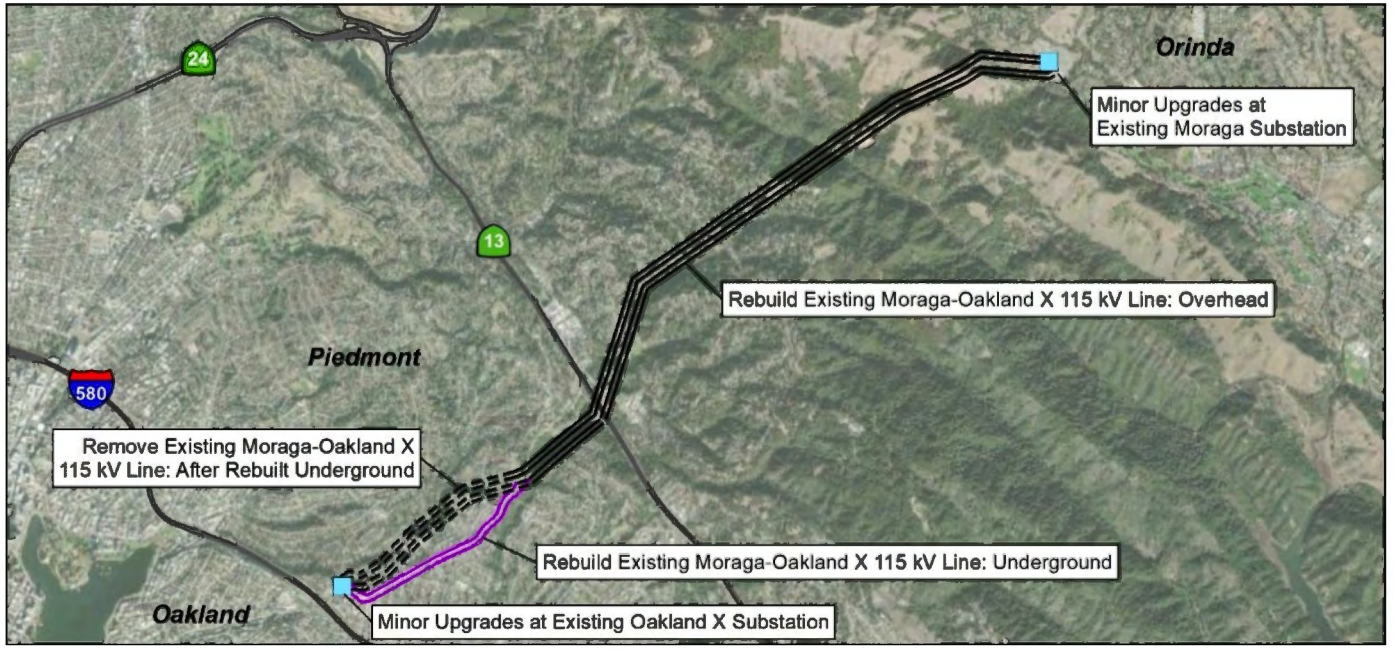
Purpose: Replace existing power line equipment that has reached the end of its useful life for safe operation of the lines.

The basic objectives of the MOX Project are to:

- Provide lifecycle updates of Moraga–Oakland X 115 kV four circuit power line path by removing and replacing four circuits to avoid future reliability issues while maintaining safe operations.
- Replace four project power line circuits using a larger size conductor that will accommodate the region's reasonably foreseeable future energy demands.
- Ensure the project at completion meets power line reliability and safety requirements, and industry standards.
- Construct a safe, economical, and technically feasible project that minimizes environmental and community impacts.

Project Summary

- Proposed upgrades to ~5-miles of two existing overhead parallel double-circuit 115 kV power lines within existing PG&E land rights between Moraga & Oakland X substations.
- Project would rebuild the four overhead lines into four hybrid lines, with both overhead (~4 miles) and underground (~1 mile) segments. Some recently replaced power line structures would be reused or reused with some modification.
- Includes installation of optical ground wire on aboveground structures with a communication cable continuing within the underground portion.
- Project would also modify the Moraga & Oakland X substations.
- Construction would start in 2028.



CEQA: Environmental Resource Areas

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire

For Each Resource Area, the EIR will …

- Define and Describe Existing Setting
  - Environmental setting
  - Regulatory setting
- Establish Thresholds of Significance
  - What defines a "significant" impact
- Identify Project Impacts and Mitigation
  - PG&E Applicant Proposed Measures
  - CPUC Mitigation Measures
  - Significance after mitigation
- Evaluate Cumulative Impacts
- Impacts of Alternatives

CEQA: Project Alternatives

- Alternatives may be considered or suggested by PG&E (see PEA Ch. 4), public/agencies, and/or developed by the CPUC EIR Team.
- Alternatives for the EIR will be determined by CEQA requirements:
  1. Consistency with most project objectives;
  2. Ability to reduce or avoid impacts of proposed project;
  3. Feasibility.
- Alternatives may include changes to structure design or location within the project right-of-way, routing, other technologies (e.g., underground lines), etc.
- No Project Alternative will also be considered.
- Scoping comments suggesting alternatives are welcome.

To Get Involved in the CEQA Process

- You're on the right track!
  - Please stay on and provide your scoping input
- Scoping Process
  - Notice of Preparation published on February 25, 2025
  - Scoping Period closes on **March 27, 2025, at 5:00 p.m.**
  - How to comment:
    - Verbally at this scoping meeting and/or by submitting a written Scoping Letter via email to MOX@AspenEG.com
- Draft EIR
  - Anticipated release: 2nd quarter 2025, followed by a public comment period

CPUC Project Webpage: PG&E Moraga-Oakland X 115 kV Rebuild Project: Home

How to Submit a Scoping Comment

E-mail: MOX@aspeneg.com

Address to: Tharon Wright, CPUC

Subject line: Moraga-Oakland X Project

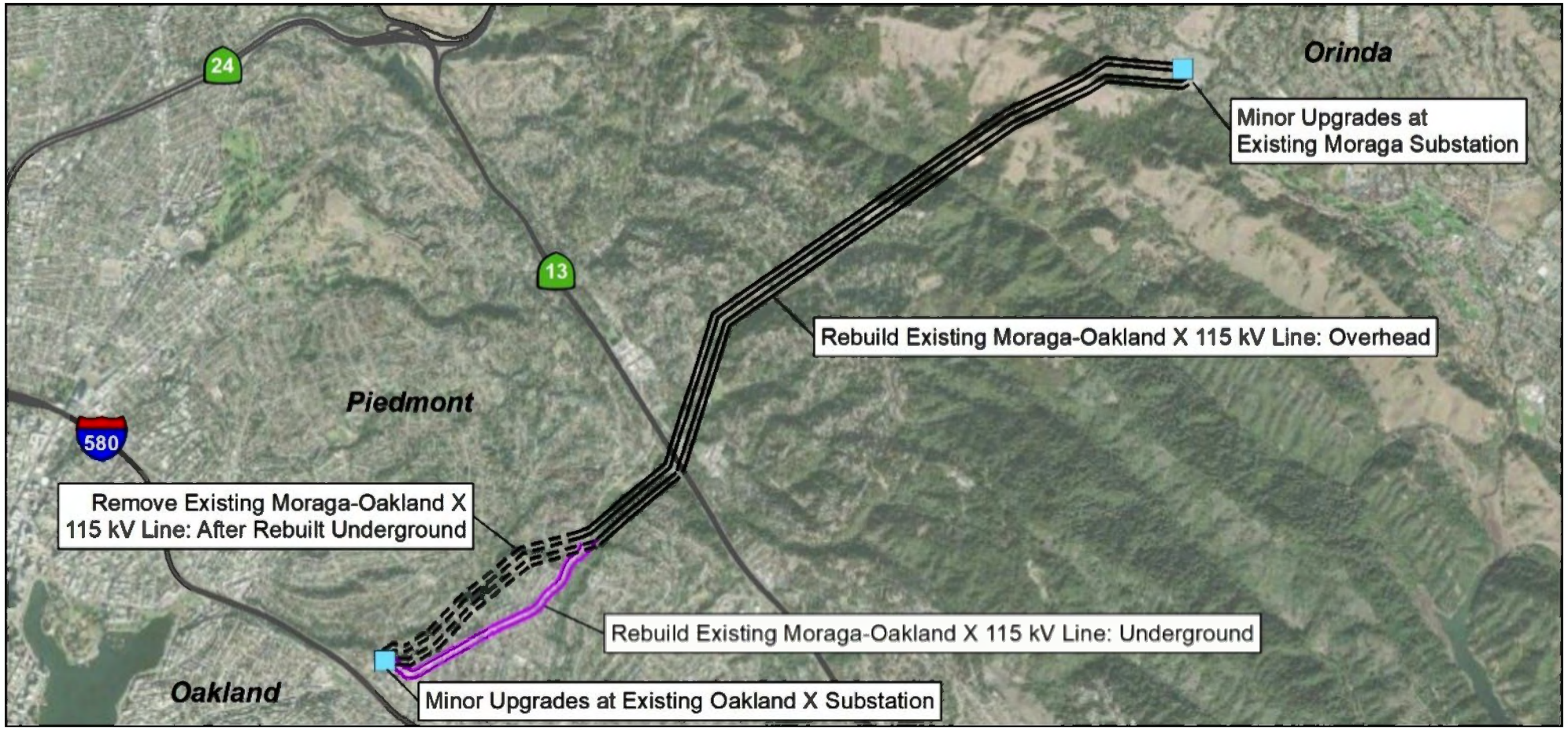
Please be sure to include your name, address, and phone number on all comments.

Scoping Comment Deadline: (5 p.m.) March 27, 2025

Project Webpage:

https://ia.cpuc.ca.gov/environment/info/aspen/moraga-oakland/moraga-oakland.htm

Public Comments



Discussion Guidelines

- Please state your name & affiliation
- Be concise
- Stay on topic
- Respect others' opinions
- Comments will be recorded
- Written comments are encouraged

Public Comments

Via the Zoom Platform

- Click the **RAISE HAND** icon to be called on

By Telephone

- Dial *9 to request to raise hand
- Dial *6 to unmute yourself when asked

Thank you for joining!

E-mail: MOX@aspeneg.com

Address to: Tharon Wright, CPUC

Subject line: Moraga-Oakland X Project

Scoping comments will be accepted through March 27, 2025

Webpage: PG&E Moraga-Oakland X 115 kV Rebuild Project: Home

PG&E PEA Alternatives (PEA Chapters 4 & 6)

- **Alternative A**: Moraga–Oakland X 3-Circuit Replacement with Moraga–Claremont Reconductoring and Park Boulevard/Lincoln Avenue Underground
- **Alternative B:** Manzanita Drive-Colton Boulevard-Estates Drive Underground
- **Alternative C**: Shepherd Canyon Road Underground
- **Alternative E:** Proposed Project with Campground Overhead Option
- No Project Alternative

Attachment D

WRITTEN SCOPING COMMENTS

Scoping Comment Log
Moraga to Oakland X 115 kV Rebuilt Project EIR

CMT NO.	DATE	FROM
A: Public Agencies		
A001	03-24-2025	California Department of Fish and Wildlife (CDFW)
A002	03-21-2025	Caltrans District 4
A003	03-21-2025	East Bay Municipal Utility District
A004	03-27-2025	City of Orinda
A005	03-27-2025	East Bay Regional Park District
B: Groups, Organizations, and Companies		
B001	02-25-2025	Junior Center of Art and Science
B002	03-26-2025	Sprinkles Parents Community*
B003	03-26-2025	Matthew Solomon and Natasha Desai on behalf of Oakland Neighbors: Matthew Solomon & Natasha Desai; Beata Milhano & Alexandre Milhano; Rebeca Lai & Tony Lai; Catherine & David Ayers; Adrienne Hink; Jennifer Wilkins; Jason Rife; David Reichmuth; Kris and Gene Vann; Sara and Barry Mohn; DeAnn Kennedy; Tina Chang; Forrest Wright; Rolf Nelson; Joey Hansell & Peter Crigger; Paul & Kathleen Rohrdanz; Rich & Wanda Lucas; Bob & Antonia Lattin; Alice Gillen & Daniel Siefman; Beth Wrightson & Kelly Algier; Rachel Kraftsmith; Cybele MacHardy
C: Tribal Governments		
C001	02-25-2025	Chicken Ranch Rancheria Me-Wuk Indians of CA
C002	02-26-2025	Muwekma Ohlone Tribe of SF Bay
C003	02-27-2025	Native American Heritage Commission (NAHC)
D: Public Meetings**		
Afternoon Meeting		
D001	03-13-2025	Kevin Dalley
D002	03-13-2025	Pete Retondo
D003	03-13-2025	Jonathan Meyers
D004	03-13-2025	Matt Derkach
D005	03-13-2025	Hugh
D006	03-13-2025	Priti Brahma
Evening Meeting		
D007	03-13-2025	Douglas Harmon
D008	03-13-2025	Jennifer Arnest
D009	03-13-2025	Doug Harmon
D010	03-13-2025	Donna Johnke
D011	03-13-2025	Matt Solomon

CMT NO.	DATE	FROM
D012	03-13-2025	Paul Kubachek
D013	03-13-2025	Matt Solomon
D014	03-13-2025	Mike
D015	03-13-2025	Rachel Colby
D016	03-13-2025	Doug Harmon
D017	03-13-2025	Martin Arnest
E. Individuals		
E001	02-28-2025	Kathryn Marshall
E002	02-28-2025	Elizabeth Hansell
E003	03-03-2025	Barbara Rosenfeld
E004	03-03-2025	Carole Lehrman
E005	03-04-2025	Jennifer Arnest
E006	03-04-2025	Susan Landon
E007	03-07-2025	Alice Gillen
E008	03-07-2025	Kristine Mechem
E009	03-09-2025	Gerald Dzendzel
E010	03-10-2025	Andrew Cohen
E011	03-10-2025	Rich Lucas
E012	03-10-2025	Wanda Mahnokini
E013	03-11-2025	Jim Gardia
E014	03-13-2025	Roger Davies
E015	03-13-2025	Jane Wellenkamp
E016	03-13-2025	Genevieve Klyce
E017	03-15-2025	Kevin Dalley
E018	03-16-2025	Joyce Domanico-Huh
E019	03-16-2025	Bernard Cappelli
E020	03-17-2025	Cybele MacHardy and Dag Lohmann
E021	03-17-2025	Deborah Miller
E022	03-17-2025	Jennifer and Brian Wilkins
E023	03-17-2025	Jun Furuta
E024	03-18-2025	Jeni Paltiel
E025	03-19-2025	Rachel Colby
E026	03-20-2025	Mark Johnson
E027	03-22-2025	Sarah Saltzer
E028	03-25-2025	Barbara Rosenfeld
E029	03-25-2025	Beth Wrightsonn
E030	03-25-2025	Renee Cameto
E031	03-26-2025	Anedra Guinn

CMT NO.	DATE	FROM
E032	03-26-2025	Donna Johnke
E033	03-26-2025	Jason Rife and Reem Malik
E034	03-26-2025	John and Jessica Campbell
E035	03-26-2025	Ken Heilig
E036	03-26-2025	Lars Johnson
E037	03-26-2025	Lisa Diamond
E038	03-26-2025	Marvin Schwartz
E039	03-27-2025	Cynthia Barbera
E040	03-27-2025	David Reichmuth
E041	03-27-2025	Jean Marcuzzo
E042	03-08-2025	Dale and Roswitha Robinson
E043	03-27-2025	Janet Hailer
E044	03-28-2025	Brenda So
E045	03-28-2025	BK Doyra
E046	03-26-2025	Denis Neema*
E047	03-26-2025	Andrew and Patricia Jeffries
E048	03-27-2025	Linda Walton

* Indicates a Form Letter.

** Recordings of the virtual public scoping meetings, including oral comments received, are posted on the CPUC's Project website at: https://ia.cpuc.ca.gov/environment/info/aspen/moraga-oakland/moraga-oakland.htm

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

A01 CDFW 2025-03-24

March 24, 2025

Tharon Wright, Public Utilities Regulatory Analyst IV
California Public Utilities Commission
300 Capitol Mall, Suite 500
Sacramento, CA 95814
Tharon.Wright@cpus.ca.gov

Subject: PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project, Notice of Preparation of a Draft Environmental Impact Report, SCH No. 2025020944, Alameda and Contra Costa counties

Dear Tharon Wright:

The California Department of Fish and Wildlife (CDFW) has reviewed the California Public Utilities Commission Notice of Preparation (NOP) of a draft Environmental Impact Report (EIR) for the PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project (Project) pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect fish and wildlife resources of the State. Please be advised, by law, CDFW may be required to carry out or approve aspects of the Project through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW is providing the California Public Utilities Commission, as the Lead Agency, with specific details about the scope and content of the environmental information related to CDFW's area of statutory responsibility that must be included in the EIR (Cal. Code Regs., tit. 14, § 15082, subd. (b)).

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) For purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority over the Project pursuant to the Fish and Game Code. For example, the Project may be subject to CDFW's Lake and Streambed Alteration (LSA) regulatory authority, if the Project impacts the bed, channel or bank of any river, stream or lake within the State (Fish & G. Code, § 1600 et seq.). Likewise, to the extent the Project may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

REGULATORY REQUIREMENTS

California Endangered Species Act

A CESA Incidental Take Permit (ITP) must be obtained from CDFW if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the Project. Under CESA, "take" means "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." (Fish & G. Code, § 86.) CDFW's issuance of an ITP is subject to CEQA and to facilitate permit issuance, any Project modifications and mitigation measures must be incorporated into the CEQA document analysis, discussion, and mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA ITP.

CEQA requires a mandatory finding of significance if a project is likely to substantially impact threatened or endangered species. Pub. Resources Code, §§ 21001, subd. (c) & 21083; CEQA Guidelines, §§ 15380, 15064 & 15065.) In addition, pursuant to CEQA, the Lead Agency cannot approve a project unless all impacts to the environment are avoided or mitigated to less-than-significant levels, or the Lead Agency makes and supports findings of overriding consideration for impacts that remain significant despite the implementation of all feasible mitigation. Findings of Consideration (FOC) under CEQA, however, do not eliminate the Project proponent's obligation to comply with the Fish and Game Code.

Lake and Streambed Alteration

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et seq., for Project activities affecting rivers, lakes or streams and associated riparian habitat. Notification is required for any activity that may substantially divert or obstruct

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the natural flow; change or use material from the bed, channel, or bank (including associated riparian or wetland resources); or deposit or dispose of material where it may pass into a river, lake, or stream. Work within ephemeral streams, drainage ditches, washes, watercourses with a subsurface flow, and floodplains is generally subject to Notification requirements. In addition, infrastructure installed beneath such aquatic features, such as through hydraulic directional drilling, is also generally subject to Notification requirements. Therefore, any impact to the mainstems, tributaries, or floodplains or associated riparian habitat caused by the proposed Project will likely require an LSA Notification. CDFW may not execute a final LSA Agreement until it has considered the final EIR and complied with its responsibilities as a responsible agency under CEQA.

Migratory Birds and Raptors

CDFW has authority over actions that may result in the disturbance or destruction of active bird nest sites or the unauthorized take of birds. Fish and Game Code sections protecting birds, their eggs, and nests include section 3503 (regarding unlawful take, possession, or needless destruction of the nests or eggs of any bird), section 3503.5 (regarding the take, possession, or destruction of any birds-of-prey or their nests or eggs), and section 3513 (regarding unlawful take of any migratory nongame bird). Migratory birds are also protected under the federal Migratory Bird Treaty Act.

PROJECT DESCRIPTION AND LOCATION SUMMARY

Proponent: Pacific Gas and Electric Company (PG&E)

Objective: The objective of the Project is to rebuild the four-circuit power line path with new equipment, including replacing the existing conductor with one of a larger size to accommodate future energy demands and to ensure the lines are rebuilt with adequate line clearances between the ground or land use. Primary Project activities include rebuilding four overhead 115 kilovolt (kV) power lines circuits that span approximately 5 miles between PG&E's Moraga and Oakland X substations. The two existing parallel double-circuit lines would be rebuilt as hybrid power lines, meaning the two double-circuit lines between the two substations would have both overhead and underground portions. Existing towers, poles and conductors would be replaced either with overhead rebuild or underground components, and minor modifications would occur within the existing substations. Some recently replaced power line structures would be reused or reused with some modification. Single-circuit transition structures would support the connection between the overhead and underground portion of each circuit. Double-circuit transition structures would be used to connect the underground portion to existing overhead circuit terminals at Oakland X substation. Additionally, the Project would include the installation of a static ground wire and an optical ground wire connecting to

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each aboveground structure with grounding and a telecommunication cable continuing with the underground portion.

Location: The Project is located within unincorporated Contra Costa and Alameda counties, and the cities of Orinda, Oakland, and Piedmont. The existing land uses within the Project area include utility in the City of Orinda, open space and parks in unincorporated Contra Costa County, and residential, commercial, parks, places of worship and schools within the cities of Oakland and Piedmont.

The CEQA Guidelines (§§15124 & 15378) require that the draft EIR incorporate a full Project description, including reasonably foreseeable future phases of the Project, and that contains sufficient information to evaluate and review the Project's environmental impact. Please include a complete description of the following Project components in the Project description including, but not limited to, the below information:

- Land use changes resulting from, for example, rezoning certain areas.
- Footprints of permanent Project features and temporarily impacted areas, such as staging areas and access routes.
- Area and plans for any proposed buildings/structures, ground disturbing activities, fencing, paving and stationary machinery.
- Operational features of the Project, including level of anticipated human presence (describe seasonal or daily peaks in activity, if relevant), artificial lighting/light reflection, noise, traffic generation, and other features.
- Construction schedule, activities, equipment, and crew sizes.

ENVIRONMENTAL SETTING

Sufficient information regarding the environmental setting is necessary to understand any potentially significant impacts on the environment of the proposed Project and any alternatives identified in the draft EIR (CEQA Guidelines, §§15125 & 15360). CDFW recommends the draft EIR provide baseline habitat assessments for special-status plant, fish and wildlife species located and potentially located within the Project area and surrounding lands, including all rare, threatened, and endangered species (CEQA Guidelines, §15380). The draft EIR should describe aquatic habitats, such as wetlands or waters of the U.S. or State, and any sensitive natural communities or riparian habitat occurring on or adjacent to the Project site (for sensitive natural communities see:https://wildlife.ca.gov/Data/VegCAMP/NaturalCommunities#sensitive%20natural%20communities), and any stream or wetland setback distances that Alameda or Contra Costa counties may require. Fully protected, threatened or endangered, candidate, and other special-status species or sensitive natural communities that are known to occur,

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or have the potential to occur in or near the Project site, include, but are not limited to the species listed in Attachment A.

Habitat descriptions and species profiles included in the draft EIR should include robust information from multiple sources: aerial imagery; historical and recent survey data; field reconnaissance; scientific literature and reports; U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Consultation System; California Aquatic Resources Inventory; and findings from "positive occurrence" databases such as California Natural Diversity Database (CNDDB). Only with sufficient data and information can the California Public Utilities Commission adequately assess which special-status species are likely to occur on the Project site and in the Project vicinity.

CDFW recommends surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. Survey and monitoring protocols and guidelines are available at: https://www.wildlife.ca.gov/Conservation/Survey-Protocol.

Botanical surveys for special-status plant species, including those listed by the California Native Plant Society (http://www.cnps.org/cnps/rareplants/inventory/), should also be conducted during the blooming period for all sensitive plant species potentially occurring within the Project area and include the identification of reference populations. Please refer to CDFW protocols for surveying and evaluating impacts to rare plants available at: https://www.wildlife.ca.gov/Conservation/Plants.

IMPACT ANALYSIS AND MITIGATION MEASURES

The CEQA Guidelines (§15126.2) necessitate the draft EIR discuss all direct and indirect impacts (temporary and permanent) that may occur with implementation of the Project. This includes evaluating and describing impacts such as:

- Land use changes that would reduce open space or agricultural land uses and increase residential or other land use involving increased development;
- Changes in hydrological conditions that could alter the timing and magnitude of streamflows both during construction and operation of the Project;
- Potential for impacts to special-status species;
- Loss or modification of breeding, nesting, dispersal and foraging habitat, including vegetation removal, alternation of soils and hydrology, and removal of habitat structural features (e.g., snags, roosts, overhanging banks);

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- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, reflection, air pollution, traffic or human presence from both construction and operation of the Project;

- Obstruction of movement corridors, fish passage, or access to water sources and other core habitat features.

- Water quality impacts resulting from construction and operation of the Project; and

- Impacts to bed, channel, bank and riparian habitat, and the direct and indirect effects to fish, wildlife, and their habitat, including impacts downstream of the Project.

The CEQA document also should identify existing and reasonably foreseeable future projects in the Project vicinity, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the Project's contribution to each impact (CEQA Guidelines, §15355). Although a project's impacts may be insignificant individually, its contributions to a cumulative impact may be considerable; a contribution to a significant cumulative impact (e.g., reduction of available habitat for a listed species) should be considered cumulatively considerable without mitigation to minimize or avoid the impact.

The CEQA Guidelines direct the California Public Utilities Commission, as the Lead Agency, to consider and describe in the draft EIR all feasible mitigation measures to avoid and/or mitigate potentially significant impacts of the Project on the environment based on comprehensive analysis of the potential direct, indirect, and cumulative impacts of the Project. (CEQA Guidelines, §§ 15021, 15063, 15071, 15126.2, 15126.4 & 15370.) This should include a discussion of take avoidance and minimization measures for special-status species, which are recommended to be developed in early consultation with the USFWS, the National Marine Fisheries Service and CDFW. These measures can then be incorporated as enforceable Project conditions to reduce potential impacts to biological resources to less-than-significant levels.

Fully protected species such as golden eagle (*Aquila chrysaetos*), white-tailed kite (*Elanus leucurus*), bald eagle (*Haliaeetus leucocephalus*), and northern California ringtail (*Bassariscus astutus raptor*) may not be taken or possessed at any time except in limited circumstances (Fish & G. Code, §§ 3511, 4700, 5050, & 5515). Therefore, the draft EIR should include measures to completely avoid take of fully protected species.

COMMENTS AND RECOMMENDATIONS

Based on the information provided in the NOP, CDFW offers the comments and recommendations below to assist the California Public Utilities Commission in

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adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and/or indirect impacts on fish and wildlife (biological) resources. **These comments and recommendations are not an exhaustive list and CDFW may provide additional recommendations as more Project specific information is disclosed. The draft EIR must include a full Project Description, Environmental Setting, and Impact Analysis and Mitigation Measures as outlined above.** Editorial comments or other suggestions may also be included to improve the document.

COMMENT 1: Critical Habitat Setbacks.

Issue: The Project has the potential to encroach into various habitat types including riparian natural communities, wetlands and freshwater communities, and upland habitat types such as oak woodlands and grasslands. Encroachment into these habitat types can adversely impact sensitive species through reduction of habitat, reduced reproductive success, reduced health and vigor, nest abandonment, loss of nest trees, and/or loss of foraging habitat that would reduce nesting success (loss or reduced health or vigor of eggs or young), habitat loss, turbidity, reduced water quality, introduction of debris and/or deleterious materials into stream habitats, direct mortality, and more.

Evidence impact would be significant: Habitat types in the Project area provide many essential benefits to terrestrial, avian and aquatic species, including, but not limited to thermal protection, water quality, cover, large woody debris, foraging areas, breeding and rearing sites, pollution and contamination buffers and connectivity. Project activities adjacent to these habitats can result in fragmentation of habitat and decreases in native species abundance and biodiversity. For example, riparian buffers help keep pollutants from entering adjacent waters through a combination of processes including dilution, sequestration by plants and microbes, biodegradation, chemical degradation, volatilization, and entrapment within soil particles. Narrow riparian buffers are considerably less effective in minimizing the effects of adjacent development than wider buffers (Castelle et al. 1992, Brosofske et al. 1998, Kiffney et al. 2003, Moore et al. 2005).

Recommendation 1: CDFW recommends the Project establish, and the draft EIR incorporate buffer zones to limit Project activities to areas outside of, and away from, sensitive habitats. CDFW is available to consult with the California Public Utilities Commission to determine appropriate site-specific buffers to reduce impacts to sensitive species and critical habitat to less-than significant levels. At a minimum, for smaller streams, CDFW recommends a 50-foot riparian buffer as measured from the dripline of trees to the nearest Project infrastructure; larger buffers would be needed for mainstem streams and rivers.

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COMMENT 2: Complete Inventory of Fully Protected, Threatened or Endangered, Candidate, and Other Special-Status Species and Impacts Analysis.

Issue: Since the Project spans approximately five linear miles and a variety of habitat types, the Project has the potential to impact a variety of special-status plant and wildlife species. The NOP does not identify special-status species that may occur within the Project area. Therefore, CDFW recommends that the California Public Utilities Commission identify species that may be potentially present within the Project area and assess the impacts of the Project on these species in the draft EIR.

Evidence impact would be significant: Primary covered activities consist of rebuilding approximately four miles of overhead power lines and the undergrounding of approximately one mile of power lines that are currently overhead with additional associated maintenance activities. Implementation of these activities has the potential to result in impacts to special-status species and degradation of sensitive habitat on which species depend. The overhead power lines implemented as part of the Project could also create a substantial collision risk for birds and bats, and an electrocution risk for raptors and other large birds.

Recommendation 2: CDFW recommends the draft EIR establish a complete inventory of special-status species with the potential to occur within the proposed Project area. Please see Attachment A in this letter as a starting point for species that should be assessed in the draft EIR. Detailed habitat assessments should be performed by a qualified biologist along the five-mile Project area to determine the presence of suitable habitat for individual plant and wildlife species. If it is determined habitat exists, protocol-level surveys should be performed to determine the presence or absence of special-status species. Survey results may be considered valid for approximately two years. If special-status species are documented within the Project area, the draft EIR should provide appropriate avoidance or minimization measures to ensure impacts to these species are reduced to less-than-significant levels. If impacts to CESA-listed species cannot be avoided, CDFW recommends the Project proponent apply for CESA take authorization under an ITP.

Recommendation 3: CDFW recommends the draft EIR include all effective and feasible design features and measures to avoid or reduce collision and electrocution risks on volant (birds and bats) species. The Project should be designed to be consistent with the *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* (Avian Power Line Interaction Committee [APLIC] 2006).

COMMENT 3: Timeframe of Project activities.

Issue: The timeframe of Project activities is not defined in the NOP, which is needed to determine the full impacts of the Project and any mitigation that may be required.

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Evidence impact would be significant: The life history of biological resources may be seasonal, such as migration, breeding, or nesting. Project activities that coincide with key biological processes have the potential to have significant impacts on species growth and reproduction. In addition, Project activities that last longer than one year or that occur in the same season in subsequent years have the potential to impact species over multiple breeding cycles, for example. Disturbance across multiple seasons could negatively impact species abundance and viability over time, particularly if the disturbance occurs during critical stages in a species' life history.

Recommendation 4: CDFW recommends that the term and seasonal work window of Project activities be defined in the draft EIR. Considering the timeframe of Project activities will aid in assessing the impacts of the proposed Project on species that may occur in the Project area. Furthermore, having a better understanding of the Project's impact on species will allow the development of appropriate compensatory mitigation for impacts.

COMMENT 4: Drilling associated with undergrounding of power lines.

Issue: The NOP identifies that approximately one mile of existing overhead power lines will be put underground and will be located within or along the boundary of Sausal Creek, Indian Gluch/Pleasant Valley Creek, and the Oakland Estuary watershed. The movement of powerlines underground may involve jack and bore drilling, horizontal directional drilling, or other trenchless conduit installations techniques. These activities have the potential to disturb wildlife and habitat, negatively impact water resources and water quality, or result in a hazardous spill or environmental contamination.

Evidence impact would be significant: Trenchless construction techniques involve heavy machinery, including hydraulic jacks or rams, augers or drills. The vibrations and noises associated with drilling have the potential to flush, disturb, confuse, or injure wildlife. In addition, the accidental release of drilling fluids into water bodies or upland habitats or the destabilization of stream banks are risks associated with drilling. Environmental contamination associated with drilling can reduce water quality or destroy sensitive habitats, which can have consequences for wildlife. Furthermore, the destabilization of stream banks can cause erosion, reduce connectivity for aquatic species, or destroy riparian habitat.

Recommendation 5: CDFW recommends that the geology and hydrology of the Project area be mapped and any drilling activities be fully described and mapped in the draft EIR. These descriptions and maps should include detailed locations and depths of underground lines that may pass under streams or other sensitive habitats. The California Public Utilities Commission should also consider if dewatering activities associated with any drilling may be necessary. Finally, CDFW recommends that a LSA

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Agreement be obtained for any drilling activities that may affect the bed, bank or channel of a lake or stream.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to prepare subsequent CEQA documents or to make supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (d) & (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDB. The CNDDB field survey form can be filled out and submitted online here: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found here: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

ENVIRONMENTAL DOCUMENT FILING FEES

CDFW anticipates that the proposed Project will have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP in order to assist the California Public Utilities Commission in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Jennifer Hoey, Environmental Scientist, at (707) 815-9978 or Jennifer.Hoey@wildlife.ca.gov; or Brenda Blinn, Senior Environmental Scientist (Supervisory), at (707) 339-0334 or Brenda.Blinn@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Erin Chappell
B77E9A6211EF486...

Erin Chappell
Regional Manager
Bay Delta Region

Docusign Envelope ID: 541878CE-D201-4080-9D9C-53240A491470

Attachments: Attachment A

ec: Office of Planning and Research, State Clearinghouse (SCH No. 2025020944)
Melissa Farinha, CDFW Bay Delta Region - Melissa.Farinha@wildlife.ca.gov
Brenda Blinn, CDFW Bay Delta Region - Brenda.Blinn@wildlife.gov

REFERENCES

Avian Power Line Interaction Committee (APLIC). 2006. *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA.

Brosofske, K.D., J. Chen, R.J. Naiman, and J.F. Franklin. 1997. Harvesting effects on microclimatic gradients from small streams to uplands in western Washington. Ecological Applications 7:1188-1200.

Castelle, A.J., C. Conolly, M. Emers, E.D. Metz, S. Meyer, M. Witter, S. Mauermann, T. Erickson, and S.S. Cooke. 1992. Wetlands buffers use and effectiveness. Adolfson Associates, Inc., Shorelands and Coastal Zone Management Program, Washington Department of Ecology, Olympia, WA. Pub. No. 92-10.

Kiffney, P. M., J. S. Richardson, and J. P. Bull. 2003. Responses of periphyton and insects to experimental manipulation of riparian buffer width along forest streams. Journal of Applied Ecology 40:1060-1076.

Moore, R. D., D. L. Spittlehouse, and A. Story. 2005. Riparian microclimate and stream temperature response to forest harvesting: a review. Journal of the American Water Resources Association 41:813-834.

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ATTACHMENT A

Common name	Scientific name	Status
Amphibians & reptiles		
California red-legged frog	*Rana draytonii*	FT, SCC
northwestern pond turtle	*Actinemys marmorata*	FPT, SSC
Alameda whipsnake	*Masticophis lateralis euryxanthus*	FT, ST
Fish		
Steelhead, central California coast DPS	*Oncorhynchus mykiss pop.8*	FT, SSC
Steelhead, central valley DPS	*Oncorhynchus mykiss pop. 11*	FT, SSC
Birds		
Golden eagle	*Aquila chrysaetos*	SFP
White-tailed kite	*Elanus leucurus*	SFP
Bald eagle	*Haliaeetus leucocephalus*	SE, SFP
Loggerhead shrike	*Lanius ludovicianus*	SSC
Yellow warbler	*Setophaga petechia*	SSC
Grasshopper sparrow	*Ammodramus savannarum*	SSC
Long-eared owl	*Asio otus*	SSC
Mammals		
San Francisco dusky-footed woodrat	*Neotoma fuscipes annectens*	SSC
American badger	*Taxidea taxus*	SSC
northern California ringtail	*Bassariscus astutus raptor*	SFP
Pallid bat	*Antrozous pallidus*	SSC
Townsends big-eared bat	*Corynorhinus townsendii*	SSC
western red bat	*Lasiurus frantzii*	SSC

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Invertebrates		
Crotch's bumble bee	*Bombus crotchii*	SCE
Monarch – California overwintering population	*Danaus Plexippus Plexippus pop. 1*	FPT
Plants		
San Francisco popcornflower	*Plagiobothrys diffuses*	SE
Pallid manzanita	*Arctostaphylos pallida*	FT, SE
Presidio clarkia	*Clarkia franciscana*	FE, SE
Robust spineflower	*Chorizanthe robusta var. robusta*	FE

Notes:

DPS = Distinct Population Segment; FE = federally endangered under ESA; FT = federally threatened under ESA; FPE = federally proposed – endangered; FPT = federally proposed – threatened; FC = federal candidate for listing under ESA; SE = state endangered under CESA; ST = state threatened under CESA; SCE = state candidate for listing as endangered under CESA; SCT = state candidate for listing as threatened under CESA; SFP= state fully protected; SSC = state species of special concern.

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: McGee, Mary@DOT <Mary.McGee@dot.ca.gov>
Sent: Friday, March 21, 2025 2:02 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: LDR D4@DOT; McGee, Mary@DOT
Subject: Moraga-Oakland X Project

Hi Tharon,

Thank you for including Caltrans in the review of the Moraga-Oakland X Project. We have no comments at this time and we look forward to reviewing the DEIR when it becomes available.

Best,
Mary

Mary McGee (she/her)
Transportation Planner
Caltrans District 4
510.907.0988

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Wen, Amy <amy.wen@ebmud.com>
Sent: Friday, March 21, 2025 9:58 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project
Attachments: wdpd25_038 PG&E Moraga-Oakland X115 Kilovolt Rebuild Project.pdf

Good morning,

Please find EBMUD's comment letter for the PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project attached.

Thank you,

Amy Wen | Sr Administrative
Clerk Water Distribution
Planning Division
EBMUD | 100 FLOWING INTO THE FUTURE

EAST BAY
MUNICIPAL UTILITY DISTRICT

March 21, 2025

Tharon Wright, Public Utilities Regulatory Analyst IV
California Public Utilities Commission
300 Capitol Mall Suite 500
Sacramento, CA 95814

Re: Notice of Preparation of a Draft Environmental Impact Report for the PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project

Dear Mr. Wright:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project (Project) located in the Cities of Oakland, Moraga, and Piedmont. EBMUD has the following comments.

WATER DISTRIBUTION PIPELINES

EBMUD owns and operates water distribution and transmission pipelines throughout the Project site which provide continuous service to EBMUD's customers in the area. Any proposed construction activity within the Project site would need to be coordinated with EBMUD so that the integrity of these water mains are maintained at all times. Pipelines within the roadways where the Project proposes 4 new underground 115 KV lines are listed in Table 1.

Table 1 – Pipelines within Proposed 4 New Underground 115 KV Lines

Pipe Diameter	Road	EBMUD Distribution Map
6-inch	Excelsior Avenue	**1497B478**
6-inch	Alma Place and Excelsior Avenue	**1497B478**
6-inch	Grosvenor Place and Park Boulevard	**1497B478**
6-inch	Park Boulevard	**1500B478**
6-inch	Park Boulevard Way	**1500B478**
6-inch	Emerson Way and Park Boulevard	**1500B478**
6-inch	Emerson Street and Park Boulevard	**1500B478**
6-inch	Greenwood Avenue and Park Boulevard	**1500B478**
6-inch	13th Avenue and Park Boulevard	**1500B478**
6-inch	East 38th Street and Park Boulevard	**1500B478**
6-inch	Beaumont Avenue and Park Boulevard	**1500B478**
6-inch	Brighton Avenue and Park Boulevard	**1500B478**

6-inch	Glen Park Road and Park Boulevard	**1500B480**
8-inch	Hampel Street and Park Boulevard	**1500B480**
6-inch	Glenfield Avenue and Park Boulevard	**1500B480**
8-inch, 16-inch, and 48-inch	Wellington Street and Park Boulevard	**1500B480**
6-inch	Edgewood Avenue and Park Boulevard	**1500B480**
4-inch and 6-inch	Everett Avenue and Park Boulevard	**1503B480**
6-inch	El Centro Avenue and Park Boulevard	**1503B480**
6-inch	Dolores Avenue and Park Boulevard	**1503B480**
6-inch	San Luis Avenue and Park Boulevard	**1503B480**
8-inch	Hollywood Avenue and Park Boulevard	**1503B482**
6-inch	Trestle Glen Road and Park Boulevard	**1503B482**
6-inch and 16-inch	Leimert Boulevard and Park Boulevard	**1503B482**
8-inch and 20-inch	Saint James Drive and Park Boulevard	**1503B482**
6-inch	Estates Drive and Park Boulevard	**1503B482**

It is imperative to continue to coordinate with EBMUD during the development of the proposed Project, so reasonable time can be provided for planning, design, and construction if conflicts exist to avoid schedule impacts. PG&E and EBMUD will need to continue to work together as the scope of work is finalized for EBMUD infrastructure adjustments and relocations. EBMUD requires reasonable time to allocate resources and modify internal construction schedules. EBMUD recommends at least 18 months advance notification for upcoming street improvement projects to allow for a reasonable amount of time to perform water pipeline relocations. Table 2 provides a typical project schedule for EBMUD to design and relocate approximately 1,500 feet of 8-inch water pipeline. The required time may increase or decrease depending on the size, length and complexity of the water pipeline project; and if constructed by EBMUD crews or by Contractor.

Table 2 – Typical Project Schedule

Required Time	Schedule Task
1 month	Receive Street Improvement and Understand Impacts
1 month	Review Project and Planning Assessment
2 months	Collect Survey Data or Use Existing Survey from Requesting Agency
2 months	Draft Base Drawing for Water Main Relocation
3 months	Design Water Main Relocation
2 months	Develop Construction Bid Documents

3 months	Advertise and Award Water Main Relocation Project
4 months	Install New Water Main and Provide Temporary Paving
18 months	*Reasonable Notification Time* *(Typical Project: 1,500 feet of 8-inch pipe)*

EBMUD will not design piping or services until soil and groundwater quality data and remediation plans have been received and reviewed and will not start underground work until remediation has been carried out and documentation of the effectiveness of the remediation has been received and reviewed. If no soil or groundwater quality data exists, or the information supplied by the project sponsor is insufficient, EBMUD may require the project sponsor to perform sampling and analysis to characterize the soil and groundwater that may be encountered during excavation, or EBMUD may perform such sampling and analysis at the project sponsor's expense. If evidence of contamination is discovered during EBMUD work on the project site, work may be suspended until such contamination is adequately characterized and remediated to EBMUD standards.

EBMUD's water distribution pipelines and valves must always be accessible to EBMUD staff in order to maintain high-quality domestic water and fire flow services and mitigate for planned and unplanned pipeline outages. PG&E is responsible for protecting in-place pipeline valves and ensuring that pipeline valves are accessible (i.e., not paved over) during and after Project construction. EBMUD recommends that PG&E review EBMUD as-built drawings and identify potential utility conflicts between Project improvements and existing EBMUD pipelines. Attached are EBMUD guidelines for requesting pipeline as-builts that include pipeline vertical data (see Attachment- EBMUD Map & Utility Information Request Form and Guidelines). EBMUD's process for requesting as-built drawings is a two steps process: 1) request EBMUD water distribution maps, and 2) submit to EBMUD marked-up EBMUD water distribution maps identifying which water pipeline as-builts are needed to evaluate water pipelines within street improvements. In some cases, EBMUD as-builts are not available and in those situations EBMUD recommends for local agencies to pothole and field locate utilities.

EBMUD'S DESIGN STANDARDS AND SPECIFICATIONS

When evaluating the need and method for relocating and adjusting EBMUD infrastructure (e.g., pipelines, meters, valves, and fire hydrants), please review EBMUD's Design Standards and Specifications for Mains 20-inches and Smaller, which are located on the following webpage under "Apply for Standard Water Service": https://www.ebmud.com/customers/new-meter-installation

PIPELINE VALVE COVER ADJUSTMENTS

For utility conflicts between the Project and existing EBMUD pipeline valve covers, PG&E must share with EBMUD conflict locations, and existing and final pavement grade elevations. EBMUD will support paving street improvement projects as follows:

- Grade change less than 0.5-inches - For street improvement projects with a grade change elevation less than 0.5-inches, EBMUD is not obligated to adjust pipeline valve covers to facilitate the construction of street improvements, pursuant to Streets & Highways Code Section 680, which states that EBMUD may not be required to relocate its facilities for a temporary purpose. However, EBMUD will provide valve cover rings, at no cost, to be used to make valve cover adjustments as needed. PG&E is responsible for protecting in-place EBMUD pipeline valve covers which will be inspected by EBMUD staff post project completion. Pipeline valves must remain accessible during and after project construction for water distribution operations (i.e., not paved over).

- Grade change greater than 0.5-inches - For street improvement projects with a grade change elevation greater than 0.5-inches, EBMUD will support the Project by adjusting pipelines valve covers (one time) to the final street grade. However, EBMUD is not obligated to adjust valves during construction to facilitate means and methods for completing street improvements, pursuant to Streets & Highways Code Section 680, which states that EBMUD may not be required to relocate its facilities for a temporary purpose. PG&E is responsible for protecting in-place EBMUD pipeline valve covers which will be inspected by EBMUD staff post project completion. Pipelines valves must remain accessible during and after project construction for water distribution operations (i.e., not paved over).

- Pipeline Valve Cover Upgrades - If PG&E determines a need to upgrade old pipeline valve covers to the new Christy G-05 Valve Box and Rise Installation, EBMUD will provide the valve boxes and covers, and will reimburse PG&E for the valve box upgrade at a reasonable cost. To upgrade pipeline valve covers and boxes, PG&E must enter into a Valve Box Agreement with EBMUD prior to start of pipeline valve cover upgrades. An EBMUD Union notification will be required to complete the work by the County's contractor.

WATER METER RELOCATIONS AND ADJUSTMENTS

When an agency like PG&E completes street improvements (e.g., replace sidewalks, street pavement, and storm drain pipelines) to improve both street safety and street aesthetics, EBMUD supports the agency by relocating water meters to meet Project objectives, current design standards (e.g., meters need to be placed at 1-foot off the face of curb), and mitigate utility conflicts. EBMUD relocates water meters to their new location once the area is staked and is ready for final meter placement (e.g., forms for new sidewalk and other features are in place). PG&E is then responsible for relocating the customer's private water service line to the new meter location. EBMUD is not financially liable for work beyond the water meter (i.e., private water line).

HYDRANT RELOCATIONS OR ADJUSTMENTS (SET-BACKS/SET- FORWARDS)

When PG&E completes street improvements (e.g., replace sidewalks and curbs) to improve both street safety and street aesthetics, PG&E must ensure that there are no conflicts between existing EBMUD fire hydrants and new curb ramps and sidewalks. Fire hydrants must be located 5-feet from the edge of curb ramps and 20 to 24- inches from the face of street curbs. Hydrant relocations are horizontal offsets that require the installation of new hydrant service laterals; hydrant relocations require the County to submit Hydrant Relocation Application with EBMUD's New Business Office (510-287- 1010) or via EBMUD's online water service application at https://wsa.ebmud.com.

PRE-CONSTRUCTION MEETING

PG&E shall invite EBMUD's Central Area Service Center Superintendent, Mario Soares (510-287-1104 or mario.soares@ebmud.com); Central Area Assistant Superintendent, Juan Serrano (510-453-7458); East Area Assistant Superintendent, Isaiah Hinton (510-287-7183 or isaiah.hinton@ebmud.com); and East Area Assistant Superintendent, Nicholas Farrell (510-287-7182 or nicholas.farrell@ebmud.com) to all pre-construction meetings.

If you have any questions concerning this response, please contact Sandra Mulhauser, Senior Civil Engineer, Major Facilities Planning Section at (510) 287-7032.

Sincerely,

David J. Rehnstrom
Manager of Water Distribution Planning

DJR:AIT:djr
wdpd25_038 PG&E Moraga-Oakland X115 Kilovolt Rebuild Project

Attachments: A – Maps of EBMUD Distribution Mains
B – EBMUD Map & Utility Information Request Form and Guidelines

EAST BAY MUNICIPAL UTILITY DISTRICT

Potable Distribution System

- Potable Pipeline
- Service Lateral
- System Valve (*OL = Opens Left*)
- Check Valve
- Zone Valve
- Change of Pipe ID
- Rate Control Station
- Regulator
- Pressure Reducing Station
- Flow Meter
- Manhole
- Service Connection
- Hydrant
- Facility
- Pumping Plant

Landbase

- EBMUD Right of Way
- EBMUD Property

Attachment A

N

0 125 250 500

Feet

This information is furnished as a public service by East Bay Municipal Utility District (District). The District makes every reasonable effort to produce and publish the most current and accurate information possible. However, the District makes no warranty express or implied, concerning this information's accuracy, completeness, reliability, or suitability for the recipient's intended use. Furthermore, the District assumes no liability associated with the use or misuse of this information. If you do not accept these terms, you must refrain from using the information and immediately return it. Please notify the District if discrepancies in the provided information are found.

By receiving the requested information, you agree that you, and any of your representatives authorized by the District to possess the information, will use the information only for the authorized purpose for which you requested it. If you obtained the information to prepare construction documents, you may make the information publicly available only to the extent necessary for safe construction. In all other circumstances, you may not provide any of the information, or any copy of it, to any other person or entity without the District's prior written approval. When you no longer require the information for your use, you must return or destroy all copies of the information. If you do not accept these terms, you must refrain from using the information and immediately return it.

1500B478

LOCATIONS ARE APPROXIMATE – NOT INTENDED FOR DESIGN PURPOSES – REQUEST AS-BUILT DRAWINGS IF NEEDED FOR DESIGN WORK

Date Printed: 12/16/2024

EAST BAY MUNICIPAL UTILITY DISTRICT

LOCATIONS ARE APPROXIMATE – NOT INTENDED FOR DESIGN PURPOSES – REQUEST AS-BUILT DRAWINGS IF NEEDED FOR DESIGN WORK

Potable Distribution System

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- EBMUD Property

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1500B480

Date Printed: 12/16/2024

EAST BAY MUNICIPAL UTILITY DISTRICT

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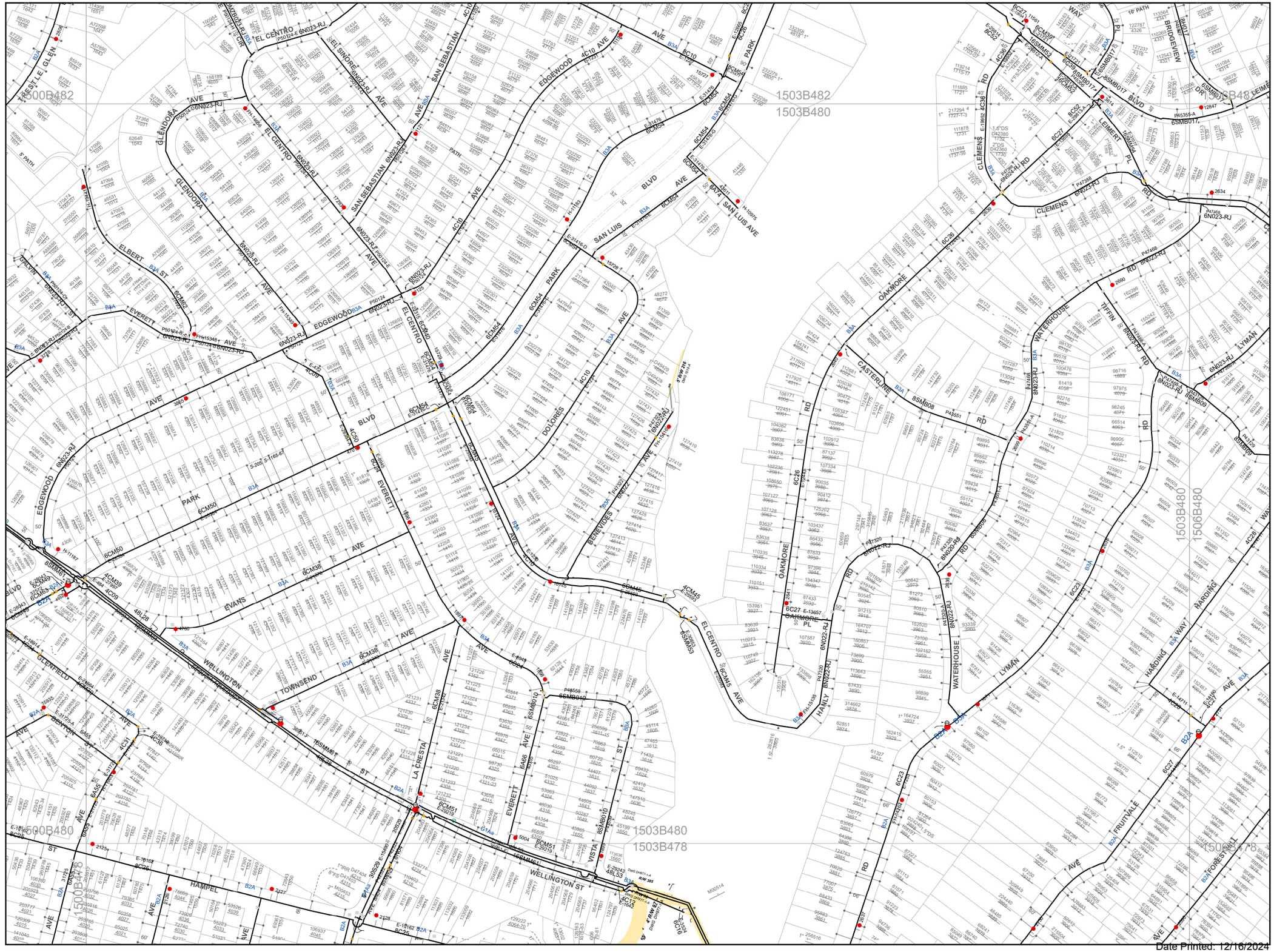
Landbase

- EBMUD Right of Way



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1503B480

Date Printed: 12/16/2024

EAST BAY MUNICIPAL UTILITY DISTRICT

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1503B482

Date Printed: 12/16/2024

EBMUD

Map & Utility Information Request Form

(Fillable PDF form)

Date of Submission:		
Requestor:	Name	
	Company/Agency	
	Address	
	Email	
	Phone	
Purpose of Request: Provide brief reason for the requested Mapping or Utility Information		

Include a Vicinity Map with all requests and
a Highlighted Map with all UTILITY INFORMATION requests

(See the Map & Utility Information Guidelines for map examples)

With this submittal, I agree to the following:

This information is furnished as a public service by East Bay Municipal Utility District. The District makes every effort to produce and publish the most current and accurate information possible. This information must be accepted and used by the recipient with the understanding that the District makes no warranties, expressed or implied, concerning the accuracy, completeness, reliability, or suitability for the use of this information. Furthermore, the District assumes no liability associated with the use or misuse of such information. Please notify the District if discrepancies are found.

By receipt of requested documents, the DOCUMENT RECIPIENT agrees that he or she, and/or any other authorized representatives of the DOCUMENT RECIPIENT, will provide no copy (nor partial copy) to any other person or agency, will not redistribute any document to any other entity, business or individual, nor use the document for other than the specified purpose. At the point the document is no longer required for use by the DOCUMENT RECIPIENT, the data shall be returned to the District or destroyed.

EAST BAY MUNICIPAL UTILITY DISTRICT

Map & Utility Information Request Guidelines

July 29, 2019

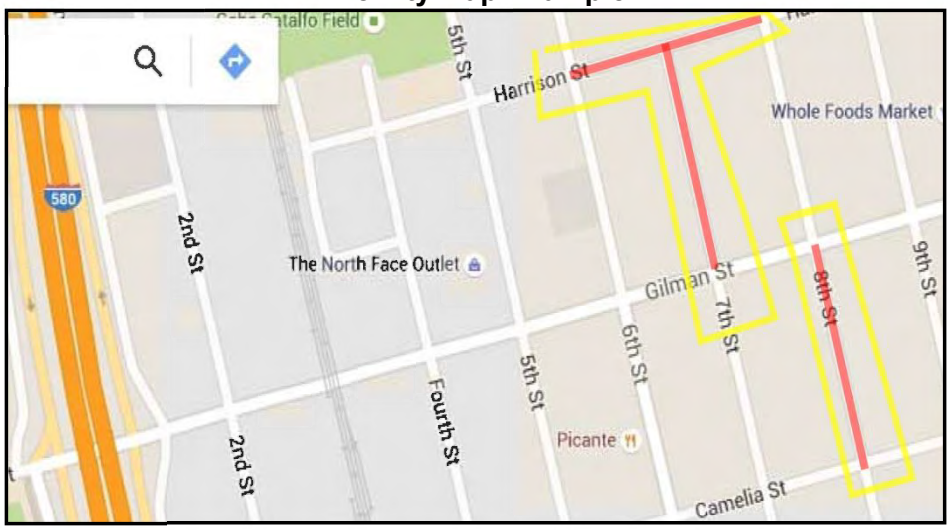
REQUESTING MAP INFORMATOIN FROM EBMUD

Mapping Services provides electronic PDF's of the WATER DISTRIBUTION SYSTEM map used by the District. Requests for maps showing other utilities should be submitted through the responsible agency. Water distribution pipelines and appurtenances will be shown as close as possible to actual field locations, but portions are often shifted or distorted to allow for visual clarity between graphic elements.

Complete the attached **Map & Utility Information Request Form** and include a **Site Vicinity Map** for the area being requested *(see Sample Vicinity Map below).*

> ***Note to homeowners:*** *Include a copy of personal identification, such as a Driver's License, with the request. The area being requested by residents must include the residence or property of the requestor. If the requested area does not specifically include the requestor, then the group or organization seeking this information must be properly identified.*

Vicinity Map Example



Submit requests using one of the following methods *(email preferred)*:

- Email: *MapUnit@ebmud.com;* Subject: *Mapping Information Request*
- Mail: *EBMUD Mapping Services Request, PO Box 24055, MS 805, Oakland, CA 94623-1055*

FAQs

How long will it take to process the request?

Requests are typically processed within five business days. The completeness of the information provided, the size of the area requested, and the volume of requests received each day may impact the processing time. Mapping Services may process requests on a rotating basis, so it is not necessary to address the request to a specific individual.

What if more detailed or accurate information is needed?

After receiving and reviewing the map provided, if more detail is needed, such as pipeline construction drawings showing pipe depth, please refer to **Page 2** of this guideline.

EAST BAY MUNICIPAL UTILITY DISTRICT

Map & Utility Information Request Guidelines

July 29, 2019

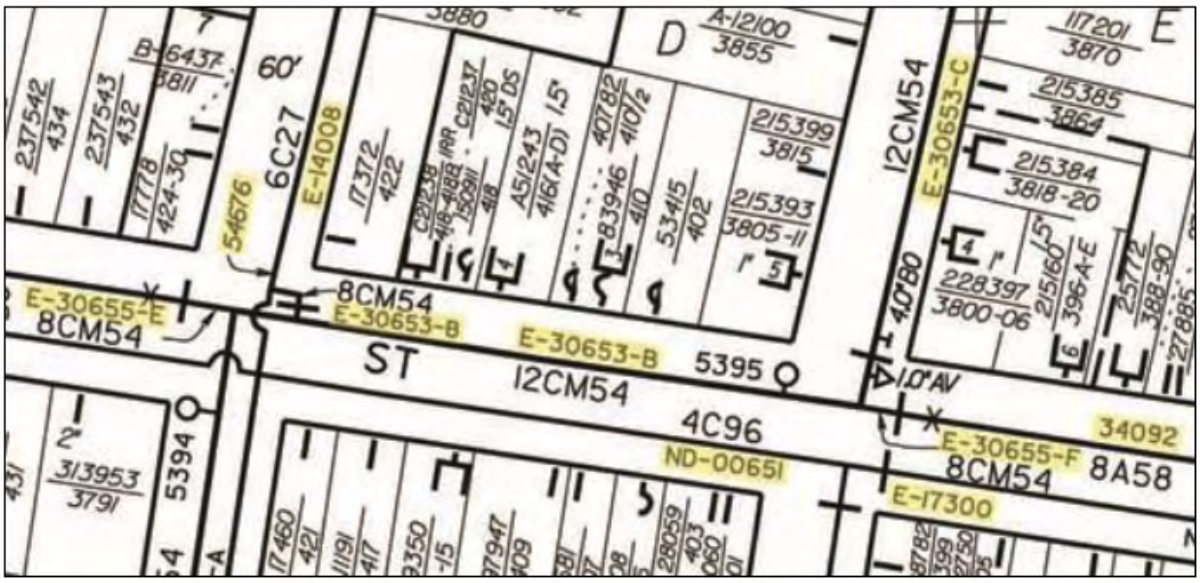
REQUESTING UTILITY INFORMATION FROM EBMUD

After receiving and reviewing the initial requested Water Distribution System map, if more detail is needed, such as detailed utility information, more accurate location, pipe depth, etc., please complete the attached **Map & Utility Information Request Form** and also include a map with **highlighted Extension Number(s)** to identify the construction drawing being requested *(see example of highlighted map below).*

Identifying Extension Numbers *(Required for UTILITY INFORMATION requests)*

An Extension Number is a number used to track the construction drawings for a pipe segment. The extension number may be five numbers only or five numbers with a one or two letter prefix and may include a single letter suffix. *NOTE: The "ND" designation means that EBMUD has "No Data" or construction drawings available for the pipeline.*

Highlighted Extension Number Map Example:



Submit requests using one of the following methods *(email preferred):*

- Email: *utility.info@ebmud.com*, Subject: *Utility Information Request*
- Mail: *EBMUD Utility Information Request, PO Box 24055, MS 504, Oakland, CA 94623-1055*

FAQ

What does the larger number near the Extension Number represent?

The Pipe Designation Number is the larger text, typically located below the pipe and near the extension number (e.g., 12CM54). This number represents the pipe's ***NOMINAL DIAMETER***, ***MATERIAL/LINING/COATING CODE***, and ***INSTALLATION YEAR***, in that order.

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Lashun Cross <lcross@cityoforinda.org>
Sent: Thursday, March 27, 2025 2:47 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: tharon.wright@cpuc.ca.gov
Subject: PG&E Transmission Line Rebuild Project
Attachments: PG&E Transmission Lines .pdf

MOX EIR Team:

Please fine attached comments from the city of Orinda regarding the NOP for an Environmental Impact Report (EIR) for the PG&E Transmission Rebuild Project.

Please do not hesitate to reach out.

Thank you,

Lashun

Lashun Cross, Director if Planning
City of Orinda Planning Department
22 Orinda Way
Orinda, CA 94563
925-253-4240 (direct)
www.cityoforinda.org

ORINDA

22 Orinda way • Orinda • California • 94563

March 27, 2025

Ms. Tharon Wright
Project Manager
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, California 94102

RE: Notice of Preparation (NOP) of an Environmental Impact Report (EIR) and Notice of Public Scoping Meeting for the Moraga-Oakland X Project (A.24-11-005)

Pacific Gas and Electric Company (PG&E) filed an application (A.24-11-005) with the California Public Utilities Commission (CPUC) for its proposed Moraga-Oakland X 115 Kilovolt (kV) Rebuild Project (Project). The Project is being considered in the 2024-2025 CAISO Transmission Planning Process. As such, the purpose of the Project is to replace and rebuild power line equipment that has reached the end of its useful life. This maintenance is needed for safe operation of the lines.

The City of Orinda staff appreciate the opportunity to review and comment on the above-mentioned document. The city recommendations and comments regarding the impacts of the Proposed Project should be included in the analysis to identify any potential impacts that are described below:

Traffic and Transportation
The Moraga Substation is accessible by only one, two-lane road that serves as the primary point of entry and exit for the Lost Valley Drive neighborhood. Identify what type of strategies are planned for the Project to minimize the impact on traffic such as street closure and potentially hazardous conditions for people walking, bicycling, or driving. Additionally, identify what mitigation strategies will be in place in the event of an emergency to preserve access for emergency services and evacuation routes.

Staging
The City of Orinda would like more information about the temporary staging areas that will be set up during the project to allow for storage of construction materials, parking vehicles and equipment, and meeting areas, among other uses. Determine which locations are considered in Orinda for staging areas, particularly the ones that may be used for helicopter landing zones.

Tree Removal
Identify the amount of vegetation removal that will be required, and whether this will include tree removal and other vegetation impacts. The City of Orinda may not support the removal of trees, particularly trees protected under the Orinda Municipal Code (oaks and native riparian trees) in accordance with the Orinda Municipal Code (OMC) Chapter 17.21, without proper analysis permits and/or restitution.

Noise
The City of Orinda is concerned about the possibility of construction noise disturbing the residents who live near the Moraga Substation. Outline which types of noise mitigation strategies will the Project employ to ensure that the Orinda residents near the site are not adversely impacted. The operation of helicopters for the Proposed Project has the potential to generate noise at a greater distance; identify the analysis and measures to reduce this impact.

Construction Hours
The City of Orinda Noise Control Ordinance (OMC) Chapter 17.39 states that construction hours should be limited from 8am to 6pm on weekdays, and from 10am to 5pm on Saturday. For a project of this scale, construction will not be permitted on Sundays. Additionally, use of heavy construction equipment is prohibited on Saturdays and Sundays. Confirm that the Project plans to comply with these hours of operation.

Undergrounding Transmission lines
Address the feasibility of undergrounding the section of powerlines that span Orinda. Describe the differences and reasoning for underground lines within the City of Oakland and overhead lines within the City of Orinda. Identify any potential impacts that could occur from overhead lines and mitigation for wildfire and prevention reduction measures.

The City of Orinda staff is available to work with the consultant to ensure that the project impacts are accurately evaluated and mitigated where feasible. If you have any question regarding this letter, please email me at lcross@cityoforinda.org or by use of a direct line at (925)-253-4240.

Sincerely,

Lashun Cross
Director of Planning

CC: Planning NOP file

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Kim Thai <kthai@ebparks.org>
Sent: Thursday, March 27, 2025 3:07 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: East Bay Regional Park District Comments on PG&E's Moraga-Oakland X Project
Attachments: 2025 EBRPD Comments - PGE Moraga-Oakland X Project.pdf

Hello,

Attached is the East Bay Regional Park District's comment letter on PG&E's Moraga-Oakland X Project. Please let me know if you have any questions.

Best regards,
Kim

East Bay Regional Park District

Kim Thai
Senior Planner | Planning, Trails, and GIS
East Bay Regional Park District
2950 Peralta Oaks Court, Oakland, CA 94605
T: 510-544-2320
kthai@ebparks.org | www.ebparks.org

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East Bay Regional Park District

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March 27, 2025

Tharon Wright, CPUC Project Manager
Moraga-Oakland X Project
Sent via: MOX@aspeneg.com

RE: East Bay Regional Park District Comments on PG&E's Moraga-Oakland X Project

Dear Ms. Tharon Wright,

The East Bay Regional Park District (Park District) appreciates the opportunity to provide comments on Pacific Gas & Electric Company's (PG&E's) proposed Moraga-Oakland X Rebuild Project (Project). The Project goes through the Park District's Robert Sibley Volcanic Regional Preserve (Sibley). Since construction of this Project would affect park operations, the Park District has been in coordination with PG&E to ensure the project minimizes impacts to the environment and to park operations.

Park District staff have the following comments:

1. **Access within Sibley**: Park District and PG&E staff have determined that PG&E will need to access the transmission towers and work area from Edgewood Road in Orinda through EBMUD access roads and onto Gudde Ridge Trail within Sibley. Due to the narrow turning area at the bridges, it is preferred that PG&E avoid crossing the bridges by going directly from Gudde Ridge Trail onto Arroyo Willow Trail and onto the helicopter landing / staging area at the future campground parking lot.

   In the event that access from Edgewood Road is not feasible, PG&E would access from Sibley's Eastport Staging Area off Pinehurst Road and use the first bridge crossing. The Park District requests that PG&E notify and coordinate with Park District staff prior to any work within the park.

2. **Helicopter Landing/Staging Area:** While on a site visit with PG&E in fall 2024, Park District staff emphasized that the future campground, which is anticipated to be constructed and completed before PG&E's Moraga-Oakland X Project, would not be a feasible location for the helicopter landing due to the campground amenities that will be put in place. The campground parking lot could potentially be used as a helicopter landing and staging area, but PG&E would need to confirm that the 50' x 50' space would be wide enough for the helicopter's blade span.

   Prior to any work, PG&E will need to apply for a Temporary Park Access permit with the Park District for the helicopter landing and staging area.

3. **Road improvements**: PG&E will plan to address needed road improvements along Gudde Ridge Trail north of the McCosker Loop Trail junction within the McCosker sub-area of Sibley as well as along the service road leading up to transmission towers EN9 and ES10. Park District staff request that PG&E staff coordinate closely with Park District Park Operations staff on these road improvements.

4. **Construction Timeline**: Since the transmission lines being replaced would go over the future Fiddleneck Campground in Sibley, Park District staff requests that PG&E coordinate the construction timeline with Park District staff to ensure the project timeline does not conflict with the campground construction or operations.

5. **Campground Overhead Option**: The *Alternative E: Proposed Project with Campground Overhead Option* would shift the transmission lines northwest 325 feet and make the transmission lines less visible from the campground, which would be better for stargazing. However, this option would result in additional impacts to the woodland

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habitat and would require tree removal in Sibley and Huckleberry Botanic Regional Preserve. For this reason, the Park District prefers the proposed project to reduce impacts to the woodland habitat.

The Park District appreciates the opportunity to review and comment on the proposed project. We request to receive notices of future referrals, environmental review, and public hearings for this project. If you have any questions or concerns, please contact me at (510) 544-2320, or by e-mail at kthai@ebparks.org.

Respectfully,

Kim Thai
Senior Planner
East Bay Regional Park District

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: sha <shacoleman@gmail.com>
Sent: Tuesday, February 25, 2025 8:19 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Undergrounding All Electrical Wires in High Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines, though initially more costly, offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies.

Thank you for considering this critical issue. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Best Regards,

Sha Coleman
Board Member
Junior Center of Art and Science
Oakland CA

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www.juniorcenter.org
JCAS Tax ID # 94-1236838

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Brooke Shapiro <brooke.e.shapiro@gmail.com>
Sent: Wednesday, March 26, 2025 8:00 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Ms. Tharon Wright, CPUC Project Manager,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project. I strongly urge CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies.

Thank you for considering this critical issue. Of course this is personal for us, as we lived through the Hills fire in the 90's, and also, our current home in Montclair sits so close to so many power lines, in fact one that sits directly on our property; however, it is the total loss of community that concerns us the very most when the next fire comes to the hills of Oakland, and it will. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,(your name and contact info here!!)

Best,

Brooke
Chief Mom Officer
Sprinkles Parents Community

Brooke Shapiro Consulting

Case Studies
973-796-0711
Let's Chat

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Matt Solomon <mattsol@gmail.com>
Sent: Wednesday, March 26, 2025 10:58 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: assemblymember.wicks@assembly.ca.gov; mxtivoli@yahoo.com; beckyclai@gmail.com; catherineayers@msn.com; adriennehink@gmail.com; jengwilks1@gmail.com; jsrife@hotmail.com; dave.reichmuth@gmail.com; Kris.p.vann@gmail.com; Esv72 @hotmail.com; DeAnn.Kennedy@gmail.com; ropolaski73@gmail.com; wright.forrest@gmail.com; rolf.nelson@sbcglobal.net; Elizabeth Hansell; Paul Rohrdanz; Richard Lucas; Antonia Lattin; Beth Wrightson; sourirer@me.com; cybelemac@gmail.com
Subject: Scoping Comments for NOP of EIR for PG&E's Moraga-Oakland X (MOX) 115 Kilovolt (kV) Rebuild Project

Matthew Solomon & Natasha Desai
2400 Scout Rd
Oakland, CA. 94611
E-mail: mattsol@gmail.com

On behalf of Oakland neighbors co-signed below

Email: MOX@aspeneg.com March 26, 2025

Ms. Tharon Wright, CPUC Project Manager

RE: Public Comment on EIR Scoping for the Proposed PG&E Moraga-Oakland Transmission Rebuild Project (MOX 115 kV Rebuild Project)

Dear CPUC Commissioners and MOX EIR Team,

We are writing in strong opposition to PG&E's current proposal for the Moraga-Oakland Transmission Rebuild Project (MOX Project), which would replace century-old transmission towers with new overhead towers through the Montclair neighborhood. As a resident of this community, I urge the CPUC to mandate a full environmental scoping and serious evaluation of complete undergrounding—or full removal—of overhead transmission lines in this high-risk, heavily forested, and densely residential area.

The existing steel lattice towers were installed in 1908 and 1931, at a time when Montclair was sparsely populated. In 2025, this area has evolved into a vibrant and dense residential neighborhood located in a designated "Very High Fire Hazard Severity Zone." Continuing to run high-voltage transmission lines overhead through this terrain poses an unacceptable risk. The growing frequency and severity of wildfires—driven by both climate change and aging

infrastructure—require a more modern, forward-looking solution that protects life, property, and the public interest.

Recent fires in Paradise and Altadena have shown the catastrophic consequences of transmission line failures. PG&E's own Wildfire Mitigation Plan concedes that undergrounding virtually eliminates wildfire ignition risk. In light of this, PG&E's decision to propose rebuilding towers in the same alignment through Montclair—with only partial undergrounding elsewhere—is both dangerous and shortsighted.

While we appreciate that PG&E has proposed partial undergrounding alternatives (i.e., Alternative B, the Manzanita Drive–Colton Boulevard–Estates Drive Underground Alternative which is more complete than Alternative C, the Shepherd Canyon plan, which resurfaces to overhead lines at the current fire station along Shepherd Canyon Rd)—we believe this does not go far enough. We strongly urge the CPUC to direct full environmental scoping of a **fully undergrounded alignment** through Montclair down to the Oakland X Substation as the **optimal solution**, not just Alternative B. In addition, other alignments—such as routing the line along the Highway 24 corridor to the substation at Highways 24 and 13—should be explored for feasibility and lower wildfire exposure.

It is troubling that PG&E has not meaningfully engaged residents in the Montclair area, many of whom were unaware of the April 2024 public notice until much later in the process. Some neighbors, including those with towers in their backyards, never received any communication. This lack of transparency undermines public trust and raises serious concerns about procedural fairness.

Moreover, PG&E's own CEO, Patti Poppe, publicly acknowledged in her **2025 "Letter to You"** that undergrounding is both safer and more cost-effective than vegetation management. She noted:

> "I know many of you think that undergrounding power lines is driving up rates. But here's the reality: on average, just $1/month of your bill goes to undergrounding. Tree trimming on the other hand is $20/month of the average bill. Undergrounding reduces wildfire risk 98%, so the more lines we bury, the safer you are, the more reliable our power is, and the less we have to spend cutting vegetation away from our lines."

This directly undercuts PG&E's cost-based argument against undergrounding and reinforces our position: **undergrounding is a prudent, cost-effective, and essential investment** in public safety and environmental responsibility.

Additionally, maintaining overhead infrastructure requires continual and costly vegetation management, placing ongoing financial, environmental, and aesthetic burdens on the community—burdens which undergrounding would permanently eliminate.

The overhead infrastructure is also unsightly and there are significant aesthetic considerations to the rebuilding of these unsightly, outdated towers, including the aesthetic considerations of continued and increasing vegetation management required. It produces a constant stream of tree cutting and construction work throughout our neighborhoods, and given this is a major infrastructure project that may not occur for another 100 years, it is a time for California to once again do "big things", and move forward on a long-term, future-proofed solution that not only mitigates the wildfire risk but improves the character of the neighborhood and City.

Notably, PG&E has agreed to underground transmission lines through Piedmont and Crocker Highlands—areas that are **less steep, less forested, and at lower wildfire risk** than Montclair. It is inequitable and irrational to underground in lower-risk neighborhoods while refusing to do so in one of the most fire-prone areas of the Bay Area.

This is not just a transmission line rebuild—it is a **once-in-a-century opportunity** to reimagine and future-proof our neighborhood. We are in full support of Alternative B as a minimum step, but urge the CPUC to explore and require alternatives that **maximize undergrounding throughout Montclair and surrounding high-risk areas**. Undergrounding would reduce risk, increase resilience, and aligns with the broader goals of SB 884, which seeks to address fire mitigation and insurance affordability across California.

On behalf of our families and neighbors, we strongly request:

- That the CPUC require full environmental scoping and analysis of complete undergrounding alternatives through Montclair;
- That undergrounding be made the preferred and default solution for projects in "Very High" Fire Hazard Severity Zones;
- That the CPUC investigate whether PG&E met its public notification obligations in Spring 2024;
- That public hearings be held in the Montclair area to ensure community voices are heard.

Thank you for your attention to this critical matter. We look forward to your leadership in prioritizing public safety, equity, and long-term resilience.

Sincerely,

Matthew Solomon & Natasha Desai
2400 Scout Rd
Oakland, CA. 94611
mattsol@gmail.com

Beata Milhano & Alexandre Milhano
7205 Wild Current Way, Oakland CA 94611
mxtivoli@yahoo.com

Rebeca Lai & Tony Lai
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Jennifer Wilkins
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DeAnn Kennedy
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Tina Chang
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ropolaski73@gmail.com

Forrest Wright
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wright.forrest@gmail.com

Rolf Nelson
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Joey Hansell & Peter Crigger
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Bob & Antonia Lattin

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Alice Gillen & Daniel Siefman
2345 Scout Rd, Oakland CA 94611

Beth Wrightson & Kelly Algier
2410 Scout Rd, Oakland CA 94611
Beth.wrightson@gmail.com

Rachel Kraftsmith
6883 Sobrante Rd, Oakland CA 94611
sourirer@me.com

Cybele MacHardy
6401 Thornhill Dr, Oakland, CA 94611
cybelemac@gmail.com

cc Assemblymember Buffy Wicks

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Joanna Portillo-Hsu <jportillo-hsu@crtribal.com>
Sent: Tuesday, February 25, 2025 3:45 PM
To: Sharon Heesh; Tharon.Wright@cpuc.ca.gov
Subject: Re: PG&E Moraga-Oakland X 115 kV Rebuild Project - Notice of Preparation of a Draft EIR

Hello,

Presently, the Tribe has no comments, concerns, or questions about this project.

Thank you,

Joanna Portillo-Hsu
Environmental & Planning Manager
9200 Red Tail Hawk Drive,
PO Box 1159, Jamestown, CA 95327
Office: 209-984-9066 | jportillo-hsu@crtribal.com

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From: Sharon Heesh <sharonh@aspeneg.com>
Sent: Tuesday, February 25, 2025 2:22 PM
To: Tharon.Wright@cpuc.ca.gov <Tharon.Wright@cpuc.ca.gov>
Subject: PG&E Moraga-Oakland X 115 kV Rebuild Project - Notice of Preparation of a Draft EIR

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Dear Interested Parties

The California Public Utilities Commission (CPUC) has published the ***Notice of Preparation (NOP) of an Environmental Impact Report (EIR) or Pacific Gas and Electric Company's (PG&E's) Moraga-Oakland X(MOX) 115 Kilovolt (kV) Rebuild Project*** (Project). The attached NOP includes a description of the proposed Project,

environmental effects that have been identified thus far for consideration in the EIR, and details on the 30-day scoping period. Written scoping comments must be submitted via email by March 27, 2025, for inclusion in the Draft EIR to MOX@aspeneg.com.

In addition, the CPUC will hold two virtual project scoping meetings to obtain input from agencies and the public on the scope and content of the EIR at:

Virtual Scoping Meetings – Thursday March 13, 2025	
2:30 to 4:00 p.m. Attend by Zoom: https://us02web.zoom.us/j/84175864740 *Attend by Phone:* (669) 4 44-9171 then enter Webinar ID: 841 7586 4740	**5:30 to 7:00 p.m.** Attend by Zoom: https://us02web.zoom.us/j/82814611227 *Attend by Phone:* (669) 9 00-6833 then enter Webinar ID: 828 1461 1227

Project Background: The MOX Project would involve proposed upgrades to approximately 5-miles of four overhead 115 kV power lines between Moraga and Oakland X substations in the City of Orinda, unincorporated areas of Contra Costa County, and the cities of Oakland and Piedmont within Alameda County. The two existing parallel double-circuit power lines are located within existing PG&E land rights, and the Project would rebuild the four overhead lines into four hybrid lines, with both overhead (~4 miles) and underground (~1 mile) segments.

Existing towers, poles and conductors would be replaced either with overhead rebuild or underground components, and minor modifications would occur within the existing substations. Some recently replaced power line structures would be reused or reused with some modification. Single circuit transition structures would support the connection between the overhead and underground portions of each line. Double-circuit transition structures would be used to connect the underground portion to existing overhead line terminals at Oakland X Substation. Additionally, the rebuild would include the installation of optical ground wire on aboveground structures with a communication cable continuing within the underground portion.

The CPUC is the lead agency responsible for environmental review of the projec it n compliance with the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq.

Document Availability: For electronic access to the NOP (in addition to the attached document PDF), please check the project website at the link below.

https://ia.cpuc.ca.gov/environment/info/aspen/moraga-oakland/moraga-oakland.htm

Thank you for you ir nteres it n the project.

Sincerely,
The MOX EIR Team

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Richard Massiatt <rmassiatt@muwekma.org>
Sent: Wednesday, February 26, 2025 7:55 PM
To: Sharon Heesh; Tharon.Wright@cpuc.ca.gov
Subject: Re: PG&E Moraga-Oakland X 115 kV Rebuild Project - Notice of Preparation of a Draft EIR

Unfortunately we will not be able to assist with this project at this time ,sorry for any inconvenience .

Best regards,

Richard Massiatt
Executive Director
Muwekma Ohlone Tribe of the San Francisco Bay Area
(209) 3 21-0372
Rmassiatt@muwekma.org

From: Sharon Heesh <sharonh@aspeneg.com>
Sent: Tuesday, February 25, 2025 2:22 PM
To: Tharon.Wright@cpuc.ca.gov <Tharon.Wright@cpuc.ca.gov>
Subject: PG&E Moraga-Oakland X 115 kV Rebuild Project - Notice of Preparation of a Draft EIR

Dear Interested Parties,

The California Public Utilities Commission (CPUC) has published the Notice of Preparation (NOP) of an Environmental Impact Report (EIR f) or Pacific Gas and Electric Company's (PG&E's) Moraga-Oakland X (MOX) 115 Kilovolt (kV) Rebuild
Project (Project). The attached NOP includes a description of the proposed Project, environmental effects that have been identified thus far for consideration in the EIR, and details on the 30-day scoping period. Written scoping comments must be submitted via email by March 27, 2025, for inclusion in the Draft EIR to MOX@aspeneg.com. –
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Virtual Scoping Meetings – Thursday March 13, 2025

2:30 to 4:00 p.m. Attend by Zoom: https://us02web.zoom.us/j/84175864740 Attend by Phone: (669) 4 44-9171 then enter Webinar ID: 841 7586 4740	**5:30 to 7:00 p.m.** Attend by Zoom: https://us02web.zoom.us/j/82814611227 Attend by Phone: (669) 900-6833 then enter Webinar ID: 828 1461 1227

Project Background: The MOX Project would involve proposed upgrades to approximately 5-miles of four overhead 115 kV power lines between Moraga and Oakland X substations in the City of Orinda, unincorporated areas of Contra Costa County, and the cities of Oakland and Piedmont within Alameda County. The two existing parallel double-circuit power lines are located within existing PG&E land rights, and the Project would rebuild the four overhead lines into four hybrid lines, with both overhead (~4 miles) and underground (~1 mile) segments.

Existing towers, poles and conductors would be replaced either with overhead rebuild or underground components, and minor modifications would occur within the existing substations. Some recently replaced power line structures would be reused or reused with some modification. Single circuit transition structures would support the connection between the overhead and underground portions of each line. Double-circuit transition structures would be used to connect the underground portion to existing overhead line terminals at Oakland X Substation. Additionally, the rebuild would include the installation of optical ground wire on aboveground structures with a communication cable continuing within the underground portion.

The CPUC is the lead agency responsible for environmental review of the project in compliance with the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq.
Document Availability: For electronic access to the NOP (in addition to the attached document PDF), please check the project website at the link below.
https://ia.cpuc.ca.gov/environment/info/aspen/moraga-oakland/moraga-oakland.htm

Thank you for your interest in the project.

Sincerely,
The MOX EIR Team

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

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Reginald Pagaling
Chumash

VICE-CHAIRPERSON
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COMMISSIONER
Bennae Calac
Pauma-Yuima Band of Luiseño Indians

COMMISSIONER
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Steven Quinn

NAHC HEADQUARTERS
1550 Harbor Boulevard
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(916) 373-3710
nahc@nahc.ca.gov

February 27, 2025

Tharon Wright
California Public Utilities Commission
300 Capitol Mall
Suite 500
Sacramento CA 95814

Re: 2025020944 PG&E Moraga-Oakland X 115 Kilovolt Rebuild Project, Contra Costa and Alameda Counties

Dear Ms. Wright:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.

b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agre
substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a
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must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information conce
Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
   a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
   b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
   a. If part or all of the APE has been previously surveyed for cultural resources.
   b. If any known cultural resources have already been recorded on or adjacent to the APE.
   c. If the probability is low, moderate, or high that cultural resources are located in the APE.
   d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for cons
project's APE.
b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally af
c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Mathew.Lin@NAHC.ca.gov.

Sincerely,

Mathew Lin

Mathew Lin
Cultural Resources Analyst

cc: State Clearinghouse

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: K Marshall <klmarshall7@yahoo.com>
Sent: Friday, February 28, 2025 9:48 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Moraga-Oakland X Project

Hi, I'd like to see more of the overhead lines moved to be underground. The majority of this line is being kept above ground in the current plan.

Kathryn

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Elizabeth Hansell <joey.hansell@gmail.com>
Sent: Friday, February 28, 2025 2:05 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Moraga-Oakland X project

I live in the Oakland Hills near this transmission line and it is an issue because of our fire risk.

Elizabeth Hansell

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Barbara Rosenfeld <jdorchid@me.com>
Sent: Monday, March 3, 2025 9:06 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: OfficeOfTheMayor@oaklandca.gov; Undergrounding Montclair; Montclair PGETowers; District4@oaklandca.gov
Subject: Support for Undergrounding All Electrical Wires in "Very High" Fire Severity Danger Zones
Attachments: CPUC.docx

BARBARA L. ROSENFELD
1965 Asilomar Drive
Oakland, CA. 94611
Tel. 510-817-4869
Cell: 310-709-4329
E-mail: jdorchid@me.com

Email: MOX@aspeneg.com March 3, 2025

Ms. Tharon Wright, CPUC Project Manager

Subject: **Support for Undergrounding All Electrical Wires in "Very High" Fire Danger Areas**

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to mandate undergrounding all electrical lines for this and future projects, in regions designated as "very high" fire danger severity zones. Recent devastating fires have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks and feeds into the homeowners' insurance crisis, consistent with SB 884.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines, though initially more costly, offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks and redirect investment into new technology.

PGE acknowledges in its Wildfire Risk Mitigation that: "When a line is underground, we reduce nearly all wildfire ignition risk in that location." PGE has mitigated other "very high" fire risks with undergrounding, and acknowledges current capacity, safety, reliability and longevity issues. Updated technology (undergrounding) provides the opportunity to improve service to customers, public safety and esthetics.

Undergrounding would also address PGE's justification of its March rate increase - due to the cost of tree pruning. Undergrounding eliminates a huge recurring financial, environmental and esthetic cost. Ratepayers are entitled to a responsible use of their funds, and a forward-looking utility provider.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in "very high" fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies, consistent with the intent and goal in SB 884. Thank you for considering this critical issue. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,

Barbara L Rosenfeld

CC: Governor Newsom

Mayor Jenkins

Senator Arrequin

Assemblymember Wicks

Councilmember Ramachadran

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: carole lehrman <carolelehrman@yahoo.com>
Sent: Monday, March 3, 2025 4:19 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: support for underground wires

Dear MOX EIR Team,

My husband and I moved to 1957 Asilomar Drive a little over a year ago. We moved from Great Neck, New York to be closer to family.

We love our neighborhood and our home but there is an however. I have never seen as many wires as we have in our area. The last time I saw this many unsightly and dangerous wires was in Viet Nam.

I watch PG&E commercials saying how much work they're doing and how safe they're making things and I find myself yelling at the TV. Not here - you're not making things safe.

There was a terrible fire in Oakland and many people died. What will it take to fix the wires so we can feel safe!

I am paying three times what I paid in a wealthy Long Island community where I didn't have solar panels. I have them here and I'm paying triple the amount to PG&E. What for? If the company can't make residents feel safe, what are we paying for?

This is inexcusable!

Sincerely yours,
Carole Lehrman

1957 Asilomar Drive
Oakland, Ca. 94611
Cell: 9173645004
Carolelehrman@yahoo.com

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Jennifer Arnest <jmarnest@gmail.com>
Sent: Tuesday, March 4, 2025 1:28 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: Martin Arnest
Subject: Support for Undergrounding All Electrical Wires in Oakland Hills High Fire Danger Areas

March 3, 2025

Ms. Tharon Wright, CPUC Project Manager

Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that **a more comprehensive solution is necessary to protect both communities and the environment**. Undergrounding power lines offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I urge CPUC to prioritize undergrounding as the **standard practice for all power line rebuilds** in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies.

Thank you for considering this critical issue. Of course this is personal for us, as we lived through the Hills fire in the 90's, and also, our current home in Montclair sits so close to so many power lines, in fact one that sits directly on our property; however, it is the total loss of community that concerns us the very most when the next fire comes to the hills of Oakland, and it will. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,

Jennifer Arnest
2370 Scout Rd
Oakland, CA. 94611
415-572-5370
jmarnest@gmail.com

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: SusanLandon <susanlandon@aol.com>
Sent: Tuesday, March 4, 2025 12:21 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Underground All electrical wires in Very High Fire Danger Areas

Email: MOX@aspeneg.comMarch 4, 2025
Ms. Tharon Wright, CPUC Project Manager

Subject: **Support for Undergrounding All Electrical Wires in "Very High" Fire Danger Areas**

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

The Montclair region has already seen the rapid and devastating effects of the Tunnel fire in 1991 where a large portion of the neighborhood burned in a matter of minutes or hours resulting in 25 deaths, 150 injuries and the loss of over 3000 homes. As a former consultant to the CPUC, I know how decisions can be made using maps and not by actual on site inspection. This very high fire danger severity zone calls for mandatory undergrounding of all electrical lines for this and future projects. Had careful onsite inspections taken place, I have no doubt undergrounding all- not just a small portion- of this project would have been included in the proposed design.

Recent devastating fires have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks and feeds into the homeowners' insurance crisis, consistent with SB 884.

While the proposed MOX Project includes a small segment of underground lines, a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines, though initially more costly, offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks and redirect investment into new technology.

PGE acknowledges in its Wildfire Risk Mitigation that: "When a line is underground, we reduce nearly all wildfire ignition risk in that location." PGE has mitigated other "very high" fire risks with undergrounding, and acknowledges current capacity,

safety, reliability and longevity issues. Updated technology (undergrounding) provides the opportunity to improve service to customers, public safety and esthetics.

Undergrounding would also address PGE's justification of its March rate increase - due to the cost of tree pruning. Undergrounding eliminates a huge recurring financial, environmental and esthetic cost. Ratepayers are entitled to a responsible use of their funds, and a forward-looking utility provider.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in "very high" fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies, consistent with the intent and goal in SB 884. Thank you for considering this critical issue. Stronger commitments to wildfire risk reduction in the environmental review process is essential.

Susan Landon
241 Pershing Drive
Oakland, Ca 94611
206-369-1947

Sent from my iPhone

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: alice.gillen@icloud.com
Sent: Friday, March 7, 2025 9:30 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas - Moraga-Oakland X
Attachments: Support for Undergrounding All Electrical Wires in High Fire Danger Areas.docx

To whom it may concern,

Please see attached a letter outlining my support for undergrounding all electrical wires in high fire areas in the Morago-Oakland X (MOX) rebuild project.
If you have any questions or request further information, please do not hesitate to reach out to me.

Kind regards,
Alice

Email: MOX@aspeneg.com March 7, 2025
Ms. Tharon Wright, CPUC Project Manager

Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to mandate undergrounding all electrical lines for this and future projects, in regions designated as high fire danger severity zones. As climate change drives up the severity and frequency of wildfires, it is important to take necessary steps to reduce the likelihood of catastrophic events. Undergrounding powerlines almost completely eliminates the risk of wildfire ignition from electrical equipment in a given location, which is crucial for protecting communities in these high-risk areas. PGE also acknowledges this in its Wildfire Risk Mitigation that: "When a line is underground, we reduce nearly all wildfire ignition risk in that location." PGE has mitigated other "very high" fire risks with undergrounding, and acknowledges current capacity, safety, reliability and longevity issues.

Recent devastating fires have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks and feeds into the homeowners' insurance crisis, consistent with SB 884. It is time that we think beyond the immediate 'cheapest fix' and look to implement infrastructure that is more resilient and will have a greater long-term return on investment.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines, though initially more costly, offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. Buried power lines are less susceptible to damage from any extreme weather event, resulting in reduced outages and improved service reliability.

While the additional investment may be increased, undergrounding can lower maintenance and operating costs over time. This includes the reduced need for ongoing vegetation management, such as tree pruning, which addresses PGE's justification for its March rate increase. Undergrounding eliminates a huge recurring financial, environmental and esthetic cost. Ratepayers are entitled to a responsible use of their funds, and a forward-looking utility provider.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in "very high" fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies, consistent with the intent and goal in

SB 884. Thank you for considering this critical issue. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,

Dr. Alice Gillen
2345 Scout Rd
Oakland
CA 94611

Ph: 925-623-2196

Email: alice.gillen@icloud.com

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Kristine Mechem <kristine.mechem@gmail.com>
Sent: Friday, March 7, 2025 2:55 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: OfficeOfTheMayor@oaklandca.gov; District4@oaklandca.gov
Subject: Support for Undergrounding

Kristine C. Mechem

2011 Asilomar Drive

Oakland, CA 94611

Phone: 415.706.2211

E-mail: Kristine.mechem@gmail.com

Email: MOX@aspeneg.com March 6. 2025

Ms. Tharon Wright, CPUC Project Manager

Subject: **Support for Undergrounding All Electrical Wires in "Very High" Fire Danger Areas**

Dear Ms. Wright and Team,

This is a response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

As an Oakland Hills resident who remembers the 1991 fire, I strongly urge CPUC to mandate undergrounding all electrical lines for this and future projects, in regions designated as "very high" fire danger severity zones. Frankly, it was a miracle that more lives were not lost in the Oakland fire. Without a shift in the winds, most experts agree the fire would not have been contained. Recent devastating fires have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks and feeds into the homeowners' insurance crisis, consistent with SB 884.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Protection is not only for property but for lives especially in heavily populated areas with limited egress where choke points could end in a large amount of fatalities.. Undergrounding power lines, though initially more costly, offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks and redirect investment into new technology.

PGE acknowledges in its Wildfire Risk Mitigation that: "When a line is underground, we reduce nearly all wildfire ignition risk in that location." PGE has mitigated other "very high" fire risks

with undergrounding, and acknowledges current capacity, safety, reliability and longevity issues. Updated technology (undergrounding) provides the opportunity to improve service to customers, public safety and esthetics.

Undergrounding would also address PGE's justification of its March rate increase - due to the cost of tree pruning. Additional costs driven by the aerial surveillance including drones and helicopters and the security protection that a PGE employee has in the in person surveillance. An analysis of all the costs associated with not undergrounding must clearly show that ROI of earlier undergrounding is the cost effective way to go. Undergrounding eliminates a huge recurring financial, environmental and esthetic cost. Ratepayers are entitled to a responsible use of their funds, and a forward-looking utility provider.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in "very high" fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies, consistent with the intent and goal in SB 884. Thank you for considering this critical issue. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,

Kristine C. Mechem

CC: Governor Newsom **https://www.gov.ca.gov/contact/**
Mayor Jenkins **OfficeOfTheMayor@Oaklandca.gov**
Senator Arrequin **https://sd07.senate.ca.gov/contact**
Assemblymember Wicks **https://a14.asmdc.org/email-assemblymember-wicks**
Councilmember Ramachadran **District4@oaklandca.gov**

--
Kristine C. Mechem
Kristine.Mechem@gmail.com
415.706.2211

Linkedin Profile

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Gerald DZENDZEL <orindavet@aol.com>
Sent: Sunday, March 9, 2025 9:46 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Re: MORAGA-Oakland X 115 kV Rebuild Project on Private Property

Hi Hedy
Thank you for getting back to me. Yes I would like to encourage the removal of the towers especially the ones that border residential areas. There could be the double benefit of having a fire break, if a fire road was maintained on top of where the lines were under grounded, and you wouldn't have the risk of fires starting in the dry grass below the power lines like occurred during the Oakland hills fire.
I look forward to the Zoom meeting

Gerry Dzendzel
18 Snow Court Orinda

Sent from my iPad

On Mar 5, 2025, at 3:48 PM, PG&E Moraga-Oakland X 115 kV Rebuild Project <MOX@aspeneg.com> wrote:
>
Dear Mr. Dzendzel,
My apologies for the delay in getting back to you. We had an issue with the email account settings that has now been resolved. >

The California Public Utilities Commission (CPUC) is just beginning its environmental review process for PG&E's proposed Moraga-Oakland X (MOX) 115 Kilovolt Rebuild Project under the California Environmental Quality Act (CEQA).
>
Up to date information on the project, its schedule, the CPUC project manager, and status of CEQA environmental review can be found on the CPUC's MOX Project website at the link below. The CPUC's MOX Project website also includes PG&E's "Proponent's Environmental Assessment (PEA)," which has detailed figures showing existing and proposed structure locations (see PEA Figure 3.5-1, sheets 1 through 25).
>
>
https://nam02.safelinks.protec on.outlook.com/?url=https%3A%2F%2Fia.cpuc.ca.gov%2Fenvironment%2Finfo%2Faspen%2Fmoraga-oakland%2Fmoraga-oakland.htm&data=05%7C02%7CMOX%40aspeneg.com%7Cee0df42594b34685d97008dd5f8e8ed8%7Cf56a45392d8e4b0d8454a64203aa39d3%7C0%7C0%7C638771788079677067%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRydWUsIlYiOiIwLjAuMDAwMCIsIlAiOiJXaW4zMiIsIkFOIjoiTWFpbCIsIldUIjoyfQ%3D%3D%7C0%7C%7C%7C&sdata=l16S7jm3HrDAxH0Z8E%2FUvFMfaZepXK4uxmsWlCU%2BjDw%3D& reserved=0
>

Right now, the CPUC is in a 30-day scoping period until March 27, 2025, soliciting input from the public on the scope of the environmental analysis. More information on the CEQA scoping period is included in the attached Notice of Preparation. If you would like to submit a scoping comment regarding your wildfire and/or tower siting concerns and preference for an underground line, the CPUC will incorporate it into the Draft Environmental Impact Report (EIR), expected to be published this summer. We will also add your email address to our project list for future notifications.
>
During the scoping period, the CPUC will also be holding two virtual (Zoom) project scoping meetings on March 13, 2025, to obtain input from agencies and the public on the scope and content of the EIR at:
>

Virtual Scoping Meetings - Thursday March 13, 2025 2:30 to 4:00 p.m.

> Attend by Zoom:
>
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5864740&data=05%7C02%7CMOX%40aspeneg.com%7Cee0df42594b34685d97008dd5f8e8ed8%
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> Attend by Phone:
> (669) 444-9171 then enter
> Webinar ID: 841 7586 4740
5:30 to 7:00 p.m.
> Attend by Zoom:
>
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2F7qR97pDX7lgx0jQdbCiIdNFxC9wswnc%3D&reserved =0
> Attend by Phone:
> (669) 900-6833 then enter

We look forward to your participation in the CEQA process. Thanks,
> Hedy Koczwara
> Aspen Environmental Group
> MOX EIR Team

> -----Original Message-----
> From: Gerald DZENDZEL <orindavet@aol.com>
> Sent: Sunday, December 15, 2024 3:50 PM
> To: PG&E Moraga-Oakland X 115 kV Rebuild Project <MOX@aspeneg.com>
> Subject: MORAGA-Oakland X 115 kV Rebuild Project on Private Property

> Dear CPUC >

> I have made multiple attempts to contact PGE about this rebuild project and they referred me to you. I am trying to make sure when the rebuild is done they remove the towers from my property and underground the lines in a way that will minimize the risk of wildfires. Can you please direct me to the persons in charge of this project review? >

> Thank you,
>
> Gerald Dzendzel
> 18 Snow Court
> Orinda, California
> Ph 925-818-0212
>> >>>>>>

<PGE MOX Project NOP (2-25-25).pdf>

STATE OF CALIFORNIA
PUBLIC UTILITIES COMMISSION

Pacific Gas and Electric Company's Moraga-Oakland X 115 kV Rebuild Project

Application A.24-11-005, filed November 15, 2024

These files are in Portable Document Format (PDF). To view them, you will need to download the free Adobe Acrobat Reader if it is not already installed on your PC. **Note:** For best results in displaying the largest files (see sizes shown in parentheses below for files larger than 5 MB), right-click the file's link, click "Save Target As" to download the file to a folder on your hard drive, then browse to that folder and double-click the downloaded file to open it in Acrobat.

This page was last updated: February 2025

*****Public Scoping is underway until March 27, 2025. Please see below for information on upcoming virtual scoping meetings and how to provide public comments*****

Welcome to the California Public Utilities Commission (CPUC) website for the environmental review of Pacific Gas and Electric Company's (PG&E's) Moraga-Oakland X 115 kV Rebuild Project (MOX Project).

The Project is located in in the City of Orinda, unincorporated areas of Contra Costa County, and the cities of Oakland and Piedmont within Alameda County, California; a map is provided here. PG&E submitted a Permit to Construct (PTC) application for the Project to the CPUC on November 15, 2024 (Application A.24-11-005). If approved by the CPUC, the Project is anticipated to begin construction in August 2028. The estimated Project completion date is July 2031.

The proposed Project will be reviewed under the California Environmental Quality Act (CEQA). The CPUC will prepare a CEQA environmental document as the CEQA lead agency. This website provides access to public documents and information relevant to the CEQA environmental review process. An overview of the proposed Project is provided below:

CPUC Review Process

Click here for more information about the CPUC's decision and review process.

Click here for CPUC's Proceeding page.

For additional information on the CPUC proceeding, contact the Public Advisor's Office.

DESCRIPTION OF THE PROPOSED PROJECT

According to PG&E, the purpose of the Project is to replace power line equipment that has reached the end of its useful life for safe operation of the lines. The objectives of the project are:

- Provide lifecycle updates of Moraga–Oakland X 115 kV four circuit power line path by removing and replacing four circuits to avoid future reliability issues while maintaining safe operations.
- Replace four project power line circuits using a larger size conductor that will accommodate the region's reasonably foreseeable future energy demands.
- Ensure the project at completion meets power line reliability and safety requirements, and industry standards.
- Construct a safe, economical, and technically feasible project that minimizes environmental and community impacts.

The Project would involve proposed upgrades to approximately 5-miles of four overhead 115 kV power lines between Moraga and Oakland X substations in the City of Orinda, unincorporated areas of Contra Costa County, and the cities of Oakland and Piedmont within Alameda County. The two existing parallel double-circuit power lines are located within existing PG&E land rights, and the Project would rebuild the four overhead lines into four hybrid lines, with both overhead (~4 miles) and underground (~1 mile) segments.

Existing towers, poles and conductors would be replaced either with overhead rebuild or underground components, and minor modifications would occur within the existing substations. Some recently replaced power line structures would be reused or reused with some modification. Single circuit transition structures would support the connection between the overhead and underground portions of each line. Double-circuit transition structures would be used to connect the underground portion to existing overhead line terminals at Oakland X Substation. Additionally, the rebuild would include the installation of optical ground wire on aboveground structures with a communication cable continuing within the underground portion.

Detail of PG&E's proposal is provided in Chapter 3 of PG&E's Proponent's Environmental Assessment (PEA).

PG&E's Community Wildfire Safety Program

A link for more information on PG&E's Community Wildfire Safety Program, including its Wildfire Mitigation Plan, can be found here. Work under the Program is independent of the proposed Project and includes undergrounding powerlines; system hardening; enhancing powerline safety settings; reducing impacts from Public Safety Power Shutoffs; and managing trees and vegetation near powerlines.

ENVIRONMENTAL REVIEW

As the CEQA Lead Agency, the CPUC will prepare an EIR to evaluate the environmental effects of the proposed project. The following table includes estimated milestones and anticipated dates for the CEQA review process.

Project Milestones as of February 2025

Milestone	Date
Application and PEA submitted by PG&E to CPUC	November 15, 2024

pplication De d C mplete by CPUC	D cember 12, 2024
Notice of Preparation of EIR and Scoping	February 25, 2025 – March 27, 2025
Publication of Draft EIR	2nd Quarter 2025
Public Review of Draft EIR	3rd Quarter 2025
Publicatio of Final EIR	4th Quarter 2025
CPUC C rtification of Final EIR and CPUC D cision	1st Quarter 2026
Start f C nstruction	A ticipated 2028 to 2030*

* Pre-construction mitigatio compliance and ministerial permittin to occur between project approval and PG&E's start of co struction.

Proponent's Environmental Assessment (PEA) and Application

PG&E filed an application and PEA for the MOX Project on November 15, 2024.

CPUC Application Review, Data Requests, and Applicant Responses

The CPUC has reviewed PG&E's application and PEA, and on December 12, 2024, determined that the application and PEA are complete. The CPUC submitted the following data requests to PG&E regarding their application information.

CPUC Completeness Letter and Data Request 1	PG&E Response to Data Request 1; Data Request 1 - Figures
CPUC Data Request 2	PG&E Response to Data Request 2; Data Request 2 AES-2 Figures
CPUC Data Request 3	PG&E Response to Data Request #3
CPUC Data Request 4	
CPUC Data Request 5	

Project Scoping

The CPUC has prepared a Notice f Preparation (NOP) f an EIR for the Project to solicit ag cy and public input o the scope f th EIR. The NOP may be viewed here. During the scoping period, beginning February 25, 2025, and ending March 27, 2025, all interested parties, including responsible and trustee agencies, groups, and the public, are invited to provide input on the scope of the EIR.

The CPUC will hold two virtual public scoping meetings during a 30-day public comment period to obtain input from agencies and the public on the scope and content of the EIR.

VIRTUAL SCOPING MEETINGS – THURSDAY MARCH 13, 2025	
2:30 to 4:00 p.m. ttend by Zoom: https://us02web.zoom.us/j/84175864740 Attend by Phone: (669) 444-9171 then enter Webinar ID: 841 7586 4740	**5:30 to 7:00 p.m.** ttend by Z om: https://us02web.zoom.us/j/82814611227 Attend by Phone: (669) 900-6833 then enter Webinar ID: 828 1461 1227

The CPUC's CEQA scoping comment period ends on March 27, 2025. During the com t period y u may submit c ts o the scope and c tent of the document verbally at the virtual public meetings noted above or by electronic mail to MOX@aspeneg.com.

Preparation of the CEQA Environmental Document

The environmental review proc ss for the MOX Project is u derway, and the CEQA environmental document is being prepared. The CEQA environmental document is xpected to be published in mid-2025.

COMMENTS & QUESTIONS

If you have comments, complaints, or questions regarding the Project, please contact us usin the CPUC's MOX Project email or leave a message the Project voicemail, as follows:

Project e-mail: MOX@aspeneg.com
Project voicemail: 877-225-2127

The CPUC's Project Manager is:
Tharon Wright, CPUC Project Manager
California Public Utilities Commission
c/o Aspen Environmental Group
235 Montgomery Street, Suite 967
San Francisco, CA 94104-2920

WEBSITE INFO This page contains tables and is best viewed with Firefox r Intern t Explorer. Please rep rt a y problems to the Energy Division web coordinator.

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Andrew Cohen <drandrewcohen@gmail.com>
Sent: Monday, March 10, 2025 10:16 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Letter re MOX

Andrew Cohen
5984 Zinn Dr
Oakland, CA 94611
DrAndrewCohen@gmail.com
415-420-4964

March 10, 2025

Ms. Tharon Wright
CPUC Project Manager

Subject: Support for Undergrounding All Electrical Wires in "Very High" Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

As a resident of Oakland, I strongly urge the CPUC to mandate undergrounding all electrical lines for this and future projects in regions designated as "very high" fire danger severity zones. The devastating impact of recent wildfires has made it clear that overhead power lines pose an unacceptable risk to public safety, property, and the environment. These fires not only result in tragic losses but also exacerbate the ongoing homeowners' insurance crisis, aligning with the concerns outlined in SB 884.

While I acknowledge that the proposed MOX Project includes a small segment of underground lines, a more comprehensive approach is necessary to protect our communities. Although undergrounding power lines requires a greater upfront investment, the long-term benefits—including wildfire risk reduction, improved grid reliability, and enhanced public safety—far outweigh the costs. Given the increasing frequency and severity of wildfires in California, we must proactively implement infrastructure solutions that prioritize resilience and sustainability.

PG&E itself recognizes in its Wildfire Risk Mitigation Plan that undergrounding nearly eliminates wildfire ignition risk. The company has already used undergrounding in other high-risk areas and acknowledges the safety, reliability, and longevity benefits of updated

technology. Additionally, transitioning to underground lines would mitigate PG&E's justification for its March rate increase, which was attributed to ongoing tree pruning costs. Eliminating the need for extensive vegetation management would provide financial, environmental, and aesthetic advantages while ensuring ratepayers' funds are used responsibly.

I urge the CPUC to make undergrounding the standard practice for all power line rebuilds in "very high" fire risk zones including Montclair. This step is essential for creating a safer, more resilient energy infrastructure that aligns with the intent of SB 884. Thank you for your consideration, and I look forward to seeing a stronger commitment to wildfire risk reduction in the environmental review process.

Sincerely,

Andrew Cohen

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: rlucaswidrio@aol.com
Sent: Monday, March 10, 2025 11:25 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines, though initially more costly, offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies.

Thank you for considering this critical issue. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,
Rich Lucas
rlucaswidrio@aol.com

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: wanda heffernon <wmahnokini@gmail.com>
Sent: Monday, March 10, 2025 11:29 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge the CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines, though initially more costly, offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I urge the CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies.

Thank you for considering this critical issue. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,
Wanda Mahnokini
wmahnokini@gmail.com

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Jim Gardia <jimgardia@gmail.com>
Sent: Tuesday, March 11, 2025 8:20 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Support for Undergrounding All Electrical Wires in "Very High" Fire Danger Areas

Ms. Tharon Wright

CPUC Project Manager

Subject: Support for Undergrounding All Electrical Wires in "Very High" Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

As a resident of Oakland, especially in the hills, I strongly urge the CPUC to mandate undergrounding all electrical lines for this and future projects in regions designated as "very high" fire danger severity zones. The devastating impact of recent wildfires has made it clear that overhead power lines pose an unacceptable risk to public safety, property, and the environment. These fires not only result in tragic losses but also exacerbate the ongoing homeowners' insurance crisis, aligning with the concerns outlined in SB 884.

While I acknowledge that the proposed MOX Project includes a small segment of underground lines, a more comprehensive approach is necessary to protect our communities. Although undergrounding power lines requires a greater upfront investment, the long-term benefits—including wildfire risk reduction, improved grid reliability, and enhanced public safety—far outweigh the costs. Given the increasing frequency and severity of wildfires in California, we must proactively implement infrastructure solutions that prioritize resilience and sustainability.

PG&E itself recognizes in its Wildfire Risk Mitigation Plan that undergrounding nearly eliminates wildfire ignition risk. The company has already used undergrounding in other high-risk areas and acknowledges the safety, reliability, and longevity benefits of updated technology. Additionally, transitioning to underground lines would mitigate PG&E's justification for its March rate increase, which was attributed to ongoing tree pruning costs. Eliminating the need for extensive vegetation management would provide financial, environmental, and aesthetic advantages while ensuring ratepayers' funds are used responsibly.

I urge the CPUC to make undergrounding the standard practice for all power line rebuilds in "very high" fire risk zones including Montclair. This step is essential for

creating a safer, more resilient energy infrastructure that aligns with the intent of SB 884. Thank you for your consideration, and I look forward to seeing a stronger commitment to wildfire risk reduction in the environmental review process.

Best regards,

Jim Gardia

5934 Zinn Dr

Oakland, Ca 94611

Jimgardia@gmail.com

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Roger Davies <roger@viravista.com>
Sent: Thursday, March 13, 2025 6:30 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: PG&E Moraga-Oakland X 115 kV Rebuild

Hello

I have attended two meetings for this project and fully support as much undergrounding as possible.

I live along the section of the line that is planned to be undergrounded along Park Blvd. We have a neighborhood group, and they are all in favor of doing this as soon as we can. We understand that this section is being underground because it's cheaper than trying to rebuild due to access conditions. But, even if costs were higher, it makes absolute sense to do this.

Each year, we have PG&E crews coming out and chopping and deforming trees on our property that they say are too close to the lines. Some of these are being clear-cut, which we are concerned will cause erosion of this very hilly area as the remaining roots rot, causing landslides onto our property.

The sooner we can move these lines and restore our trees, the better.

Thank you,

Roger
Trestle Glen Neighborhood

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: jwellenk@gmail.com
Sent: Thursday, March 13, 2025 3:35 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Moraga-Oakland X Project

To: Tharon Wright, CPUC

I am writing to urge officials to amend the proposed scope of PG&E's Moraga-Oakland X 115kV Transmission Line Rebuild Project to allow for undergrounding the entire length of the lines being replaced (not just those along Park Blvd). This is necessary due to the high fire danger that is present in the area between the Moraga substation and Park Blvd.

Thank you for the opportunity to provide input,

Jane Wellenkamp
Oakland hills

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Genevieve Klyce <gklyce@gmail.com>
Sent: Thursday, March 13, 2025 5:34 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Fwd:

Hello

I was listening to the webinar today - the meeting about PG & E's Moraga-Oakland X 115 kv Transmission Line Rebuild Project. I live on Sandringham Rd. in Piedmont close to Estates Drive. My family has owned this home for more than 40 years and my mom started a group called PLUG decades ago (Power Lines Under Ground), recruiting people in the community to try to compel PG & E to put the power lines underground.

I just wanted to write and express my support for this project. I am very happy to hear that this is in the works. I know there were many comments during the meeting stating that all the power lines should be placed underground, and while I believe that is probably true, I think this is a good start. I really hope this all goes through and actually happens. I will be so happy to tell my mom that it is finally happening after all these years.

Thanks,
Genevieve Klyce
231 Sandrigham Rd.

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Kevin Dalley <kevin@kelphead.org>
Sent: Saturday, March 15, 2025 5:53 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Comments on Moraga-Oakland X 115 kV Transmission Line Rebuild Project.

I request the following changes on Moraga-Oakland X 115 kV Transmission Line Rebuild Project.

PGE's currently plan only has undergrounding from Park Blvd and Estates Drive to substation X; the current route for these transmission lines runs through residential neighborhoods in Oakland and Piedmont.

While this is a good first step, Oakland should look at PGE's alternative, rejected, plans, which underground lines currently passing through Dimond Canyon and Shepherd Canyon.

1. Adopt PGE alternative B or C, which underground the transmission lines which passes through Dimond Canyon and Shepherd Canyon, which are at high risk of fire. CPUC should clearly state the risks of keeping transmission lines above ground in fire prone areas. Please add information on the reason for rejecting alternatives B and C

2. Consult with Oakland Fire Department (OFD), both Fire Chief Covington and Fire Marshal Bryant. PGE documents verify that the Piedmont Fire Department has been consulted, but not the Oakland Fire Department. When OFD is consulted, include a discussion of alternative B and C, which underground the transmission lines in Dimond Canyon and Shepherd Canyon, both areas at high risk of fire.

Alternatives B, C are included in this document:

https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M546/K456/546456398.PDF

Kevin Dalley
510-388-1484
3744 Glen Park Rd
Oakland, CA 94602

(my home is a few blocks from the Oakland X substation, and also a few blocks from fire prone Dimond Canyon.

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Joyce Huh <joyce@domhuh.com>
Sent: Sunday, March 16, 2025 9:28 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines, though initially more costly, offers significant long-benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in that will help prevent future tragedies.

Thank you for considering this critical issue. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,
Joyce Domanico-Huh
6825 Oakwood Dr Oakland CA 94611
408-318-1332

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Bernie <bernie@cappelli.biz>
Sent: Sunday, March 16, 2025 8:50 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Adopt Plan B or Plan C

A fire in Lafayette's hills could easily jump to my neighborhood.
I request the following changes on Moraga-Oakland X 115 kV Transmission Line Rebuild Project.

PGE's currently plan only has undergrounding from Park Blvd and Estates Drive to substation X; the current route for these transmission lines runs through residential neighborhoods in Oakland and Piedmont.

While this is a good first step, Oakland should look at PGE's alternative, rejected, plans, which underground lines currently passing through Dimond Canyon and Shepherd Canyon.

1. Adopt PGE alternative B or C, which underground the transmission lines which pass through Dimond Canyon and Shepherd Canyon, which are at high risk of fire. CPUC should clearly state the risks of keeping transmission lines above ground in fire prone areas. Please add information on the reason for rejecting alternatives B and C

2. Consult with Oakland Fire Department (OFD), both Fire Chief Covington and Fire Marshal Bryant. PGE documents verify that the Piedmont Fire Department has been consulted, but not the Oakland Fire Department. When OFD is consulted, include a discussion of alternative B and C, which underground the transmission lines in Dimond Canyon and Shepherd Canyon, both areas at high risk of fire.

Alternatives B, C are included in this document:
https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M546/K456/546456398.PDF

Sincerely,
Bernard Cappelli
224 El Toyonal
Orinda CA 94563

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Cybele MacHardy <cybelemac@gmail.com>
Sent: Monday, March 17, 2025 7:44 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project; ann.oleary@gov.ca.gov; gavin.newsom@gov.ca.gov
Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to consider undergrounding all electrical lines for this and future

in 1991 that started in approximately the same location of this upgrade and recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to initially more costly, offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety, as championed by PGE's new CEO, Patti Poppi. Europe has made these investments in their infrastructure to make people safe, why can't the richest state in the USA. And with the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies.

Thank you for considering this critical issue. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,
Cybele MacHardy and
Dag Lohmann

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Deborah (Keeth) Miller <deborah.keeth@gmail.com>
Sent: Monday, March 17, 2025 10:15 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: jsavas@oaklandca.gov; rdean@oaklandca.gov; ilmerriouns@oaklandca.gov
Subject: PG&E's proposed Moraga–Oakland X 115 kV Rebuild Project, Scoping Comments

To: Tharon Wright, CPUC
Re: Moraga-Oakland X Project, Scoping Comments

I am a homeowner at 5973 Rincon Drive, Oakland, CA 94611; I live in the community serviced by and affected by PG&E's proposed Moraga–Oakland X 115 kV Rebuild Project ("Project").

I support responsible maintenance and repair of aging PG&E infrastructure to improve system reliability and reduce hazards.

The CPUC should require PG&E to build new underground 115kV lines in the portion of the Project from approximately Estates Drive to approximately Skyline Blvd, rather than PG&E's proposal to rebuild that segment in the same (or more impactful) overhead configuration.

Increasing the amount of underground infrastructure in these areas would reduce the proposed Project's wildfire hazard and aesthetic environmental impacts. In particular:

Wildfire Hazard: The dangers of wildfire hazard as a result of overhead utility infrastructure are well-documented. PG&E's EA was prepared in November 2024 before the Los Angeles wildfires, before the state through CalFire released its map of Fire Hazard Severity Zones, and before Governor Newsom issued Executive Order N-18-25 to reduce fire risk in urban areas. PG&E's EA acknowledges that undergrounding power lines as part of the Project will "significantly reduce existing modeled wildfire risk" (see EA at 1-2; EA at 4-5 ["underground routes would reduce wildfire risk"]; Table 4.2-1 [Manzanita-Colton-Estates, and Shepherd Canyon Underground alternatives "reduces permanent ... wildfire impacts compared to the [PG&E proposed] project."]). CPUC should consider this information as it conducts its analysis under CEQA of PG&E's proposed Project, and insist that PG&E reduce wildfire hazard to the maximum extent possible through underground infrastructure.

Aesthetic: PG&E's proposed Project would result in significant and unmitigated aesthetic impacts. For example, according to Table 3.3-4 certain proposed structures would increase in height more than 60 feet compared to the existing condition -- in some cases a more than 89% height change. By contrast, undergrounding the infrastructure would substantially improve the aesthetic impacts of the project. PG&E's photo comparisons in its EA are compelling -- Figure 5.1-6a vs. 5.1-6b, Figures 5.1-16a vs. 5.11-16b, and Figures 5.1-17a vs. 5.1-17b illustrate the vast improvement in aesthetic impacts when infrastructure is removed or undergrounded, whereas Figures 5.1-8a vs. 5.1-8b or Figures 5.1-11a vs. 5.1-11b illustrate the significant aesthetic impacts when infrastructure is replaced overhead. PG&E's EA acknowledges that "underground routes would ... eliminate aesthetic impacts of aboveground structures" (see, e.g., EA at 4-5; Table 4.2-1 [Manzanita-Colton-Estates, and Shepherd Canyon Underground alternatives "reduced permanent visual ... impacts compared to the [PG&E proposed] project."]). PG&E's EA conclusion that impacts on aesthetic resources would be less than significant is not supported and not credible.

Economic and Technical Feasibility: PG&E's EA discounts the underground alternative because "extensive engineering and constructability issues that may make this alternative not economically or technically feasible" (see EA at Table 4.2-1 [emphasis added]). PG&E's own language indicates that it has not fully evaluated the feasibility of undergrounding under CEQA Section 15364. PG&E's statement that "most" alternatives" had significant technical and economic feasibility issues" (see,
e.g., EA at 1-2, 4-8, 4-16, 4-19) is conclusory and not supported by PG&E's own document. The EA provides no quantitative assessment or objective standards to evaluate feasibility. Moreover, any assessment of economic feasibility of an undergrounding alternative must be made in comparison to the full economic impacts of not undergrounding, including
(a) PG&E's exposure to liability for massive damages from catastrophic wildfire caused by the utility's preference to build above ground infrastructure in this dense urban environment; and (b) PG&E's transfer of economic harm to the surrounding community (including through loss of ability to obtain homeowner's insurance).

I find PG&E's EA's discussion and rejection of the underground alternatives to be cursory; PG&E did not meaningfully consider the underground alternative in this segment of the project. For example, PG&E's EA does not adequately explain why it rejected (or did not consider) the alternative to underground infrastructure: (a) in Park Boulevard between SR 13 and Estates Drive, (b) Mountain Blvd from SR 13 to Shepherd Canyon Road, and (c) Shepherd Canyon Road from Mountain Blvd to approximately Saroni Drive.

I look forward to CPUC's serious consideration of the above factors as it considers PG&E's proposed project and CPUC's obligations under CEQA.
Respectfully,

Deborah Miller
5973 Rincon Drive
Oakland, CA 94611
deborah.keeth@gmail.com

cc: Janani Ramachandran's Office, and City Council District 4

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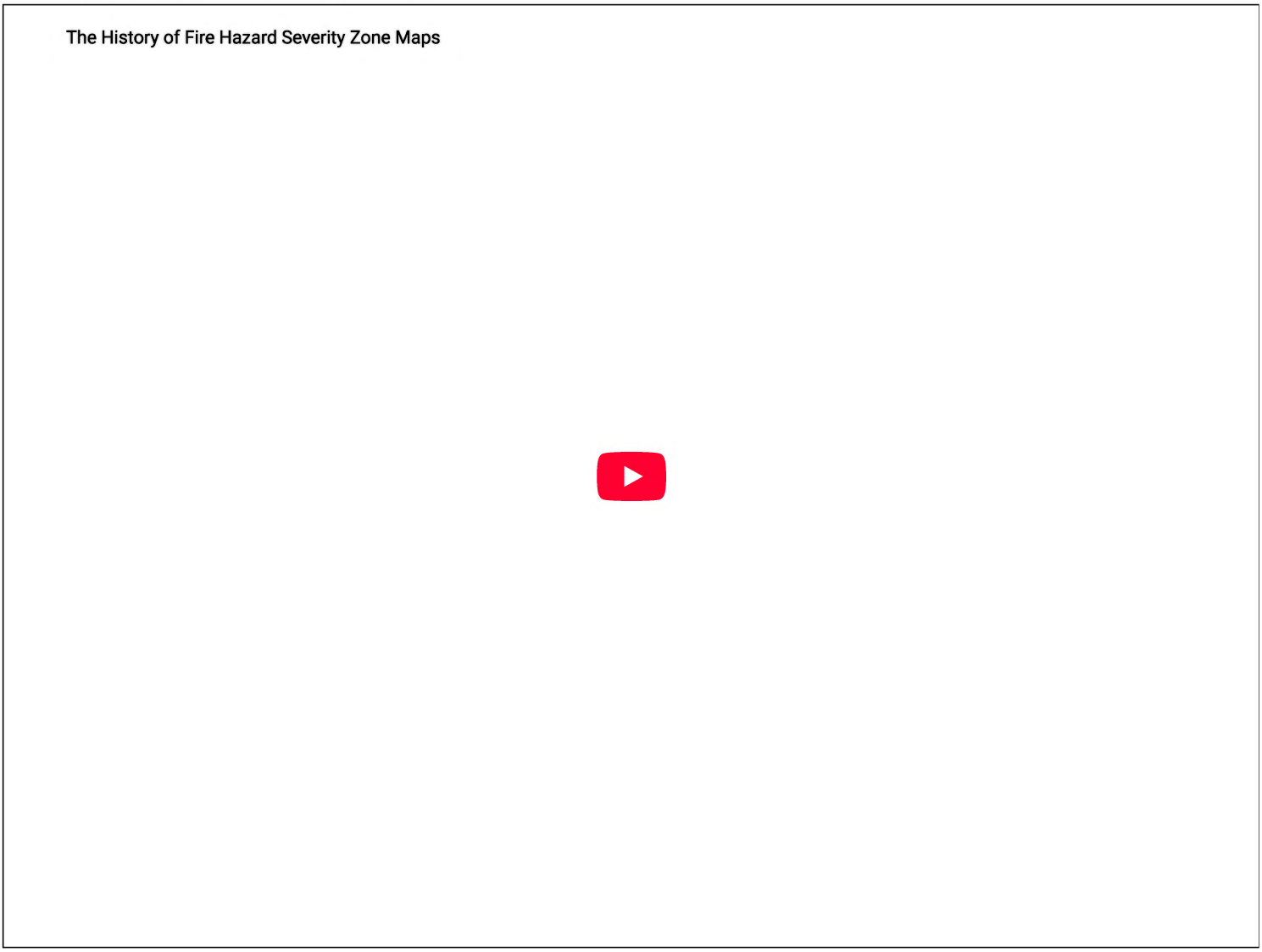
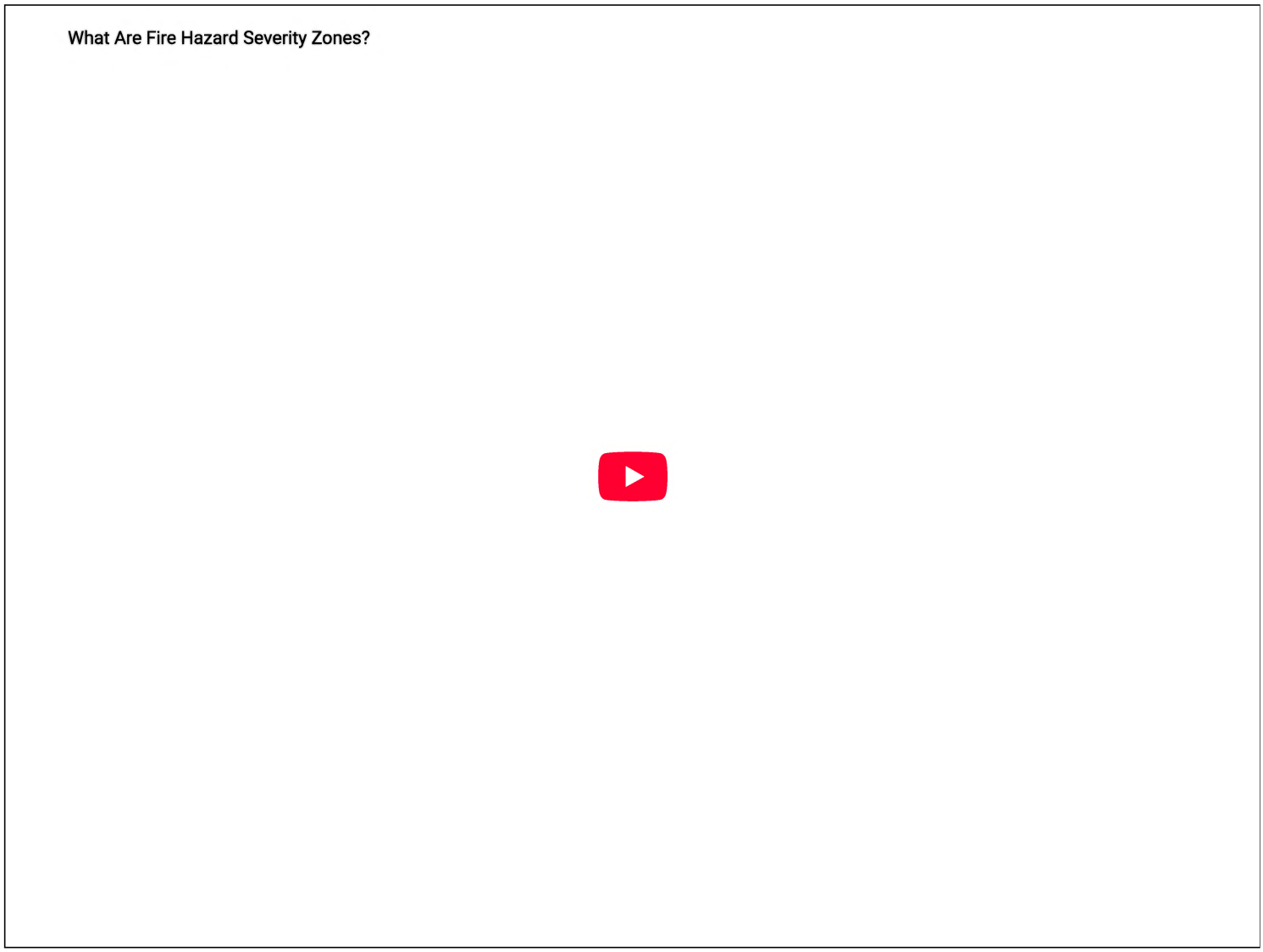
Fire Hazard Severity Zones

California's seasonally dry Mediterranean climate lends itself to wildfires, and in an effort to better prepare, CAL FIRE is required to classify the severity of fire hazard in areas of California.



The History of Fire Hazard Severity Zone Maps

Fire Hazard Severity Zone maps arose from major destructive fires, prompting the recognition of these areas and strategies to reduce wildfire risks. Legislative response led to mandated mapping across California under the California Public Resources Code 4201-4204, encompassing all State Responsibility Areas (SRA).

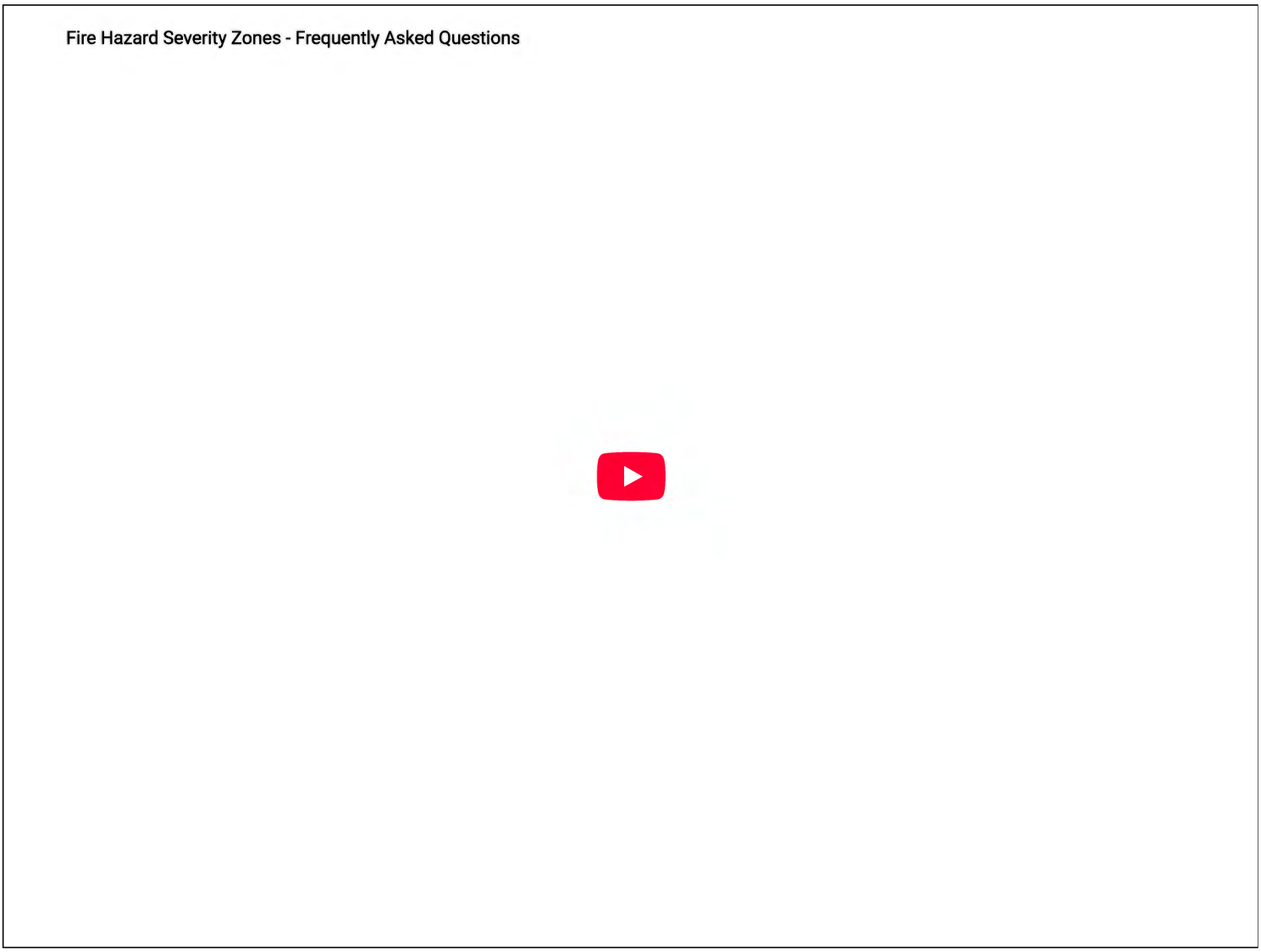


What are Fire Hazard Severity Zones?

The State Fire Marshal is mandated to classify lands within State Responsibility Areas into Fire Hazard Severity Zones (FHSZ). Fire Hazard Severity Zones fall into one of the following classifications:

- Moderate
- High
- Very High

The California laws that require Fire Hazard Severity Zones include California Public Resources Code 4201-4204, California Code of Regulations Title 14, Section 1280 and California Government Code 51175-89.



Frequently Asked Question

FAQ DOCUMENT (PDF)

FAQ DOCUMENT (PDF) (SPANISH)

Explore Fire Hazard Severity Zones

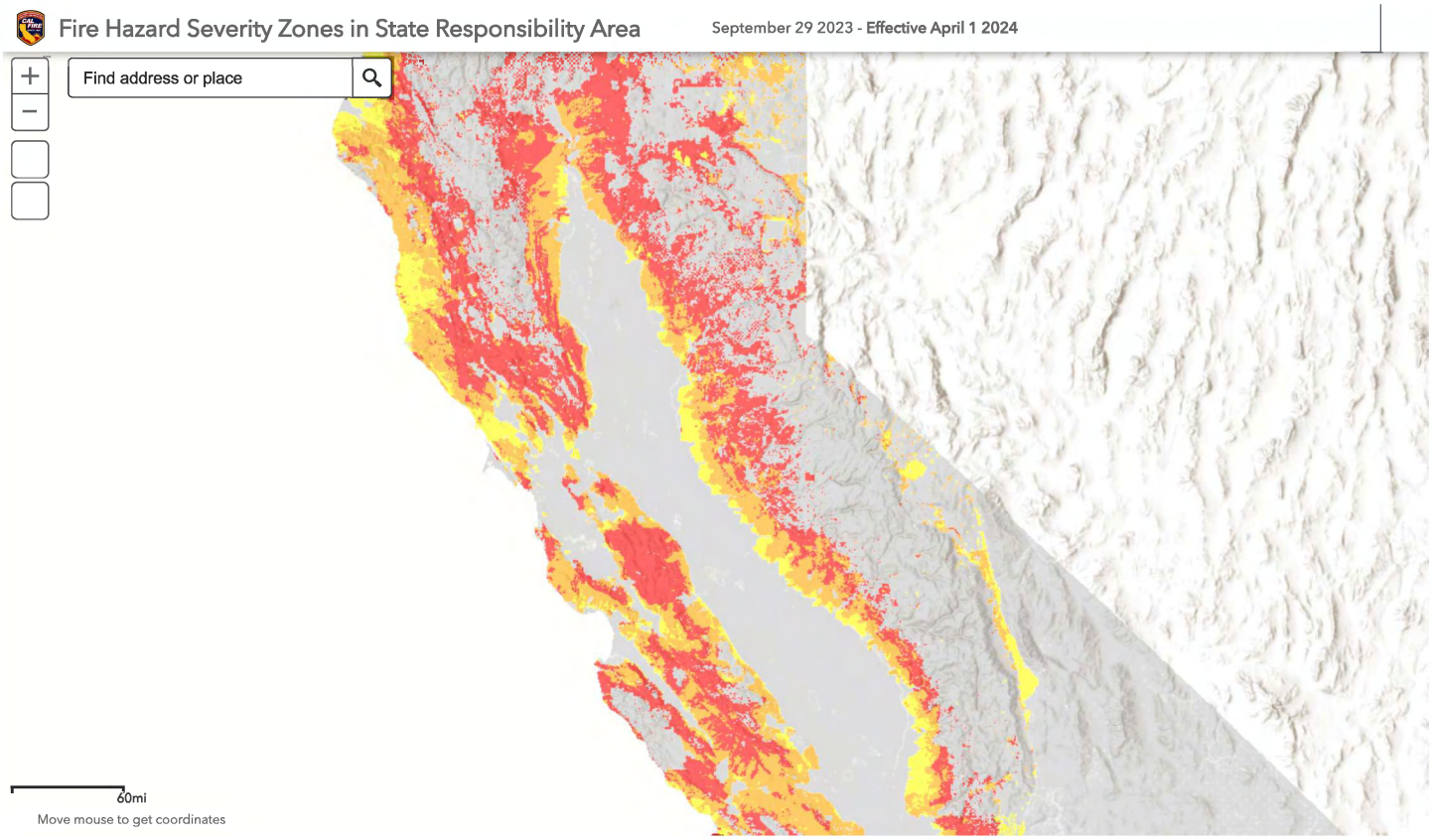
The Fire Hazard Severity Zone (FHSZ) maps are developed using a science-based and field-tested model that assigns a hazard score based on the factors that influence fire likelihood and fire behavior. Many factors are considered such as fire history, existing and potential fuel (natural vegetation), predicted flame length, blowing embers, terrain, and typical fire weather for the area. There are three levels of hazard in the State Responsibility Areas: moderate, high, and very high.

Fire Hazard Severity Zone maps evaluate “hazard,” not “risk”. They are like flood zone maps, where lands are described in terms of the probability level of a particular area being inundated by floodwaters, and not specifically prescriptive of impacts. “Hazard” is based on the physical conditions that create a likelihood and expected fire behavior over a 30 to 50-year period without considering mitigation measures such as home hardening, recent wildfire, or fuel reduction efforts. “Risk” is the potential damage a fire can do to the area under existing conditions, accounting for any modifications such as fuel reduction projects, defensible space, and ignition resistant building construction.

Fire Hazard Severity Zones viewer in the State Responsibility Area Effective April 1, 2024

You can enter your address to locate your property on a map showing Fire Hazard Severity Zones. Due to the nature of this content, some users who require Assistive Technology may experience accessibility issues. If you experience any problems while trying to access this content, please call the hotline at (916) 633-7655 or e-mail: FHSZinformation@fire.ca.gov.

View Map on Cell/Tablet Device



- SRA FHSZ Data Effective April 1, 2024

Map Adoption Process

- Classification of all lands within State Responsibility Areas into fire hazard severity zones is required by law. Therefore, the fire hazard severity zone designations and accompanying maps must follow the Administrative Procedures Act (APA) and be approved by the Office of Administrative Law (OAL). The regulation can be found in Title 14 of the California Code of Regulations (CCR) section 1280.01 and entitled “Fire Hazard Severity Zones in the SRA”.

Local Responsibility Area Fire Hazard Severity Zone Maps +

State Responsibility Area Regulatory Information +

Methods for Creating Fire Hazard Severity Zone Maps

Enhance your Property's Fire Safety

It is your responsibility to prepare yourself, your family, and your home for when wildfire strikes. Creating and maintaining defensible space and hardening your home by retrofitting it with ignition-resistant or noncombustible materials to protect against the threat of flying embers, direct flame contact, and radiant heat exposure will dramatically

increase your safety and the survivability of your home.

DEFENSIBLE SPACE HOME HARDENING

Fire Hazard Severity Zones - Call to Action

Science and Method +

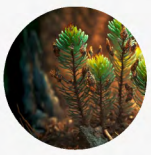
Definitions +

California Department of Insurance Information +

Contact Information

FHSZinformation@fire.ca.gov

916-633-7655



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News

Feb 6, 2025

Governor Newsom signs executive order to further prepare for future urban firestorms, stepping up already nation-leading strategies

What you need to know: Governor Newsom signed an executive order to launch key initiatives to continue adapting to future

Los Angeles fires: Go to CA.gov/LAfires for latest information and resources

News

Feb 6, 2025

Governor Newsom signs executive order to further prepare for future urban firestorms, stepping up already nation-leading strategies

What you need to know: Governor Newsom signed an executive order to launch key initiatives to continue adapting to future

extreme firestorm events in urban communities and leading the way to build a more resilient state.

Sacramento, California – Adding to California's nation-leading fire safety standards, Governor Gavin Newsom today signed an executive order to further improve community hardening and wildfire mitigation strategies to neighborhood resilience statewide. A copy of the executive order is available here.

> We are living in a new reality of extremes. Believe the science – and your own damn eyes: Mother Nature is changing the way we live and we must continue adapting to those changes. California's resilience means we will keep updating our standards in the most fire-prone areas.
>
> Governor Gavin Newsom

The executive order issued by Governor Newsom does the following:

- Directs the State Board of Forestry to accelerate its work to adopt regulations known as "Zone 0," which will require an ember-resistant zone within 5 feet of structures located in the highest fire severity zones in the state.
- Tasks the Office of the State Fire Marshal with releasing updated Fire Hazard Severity Zone maps for areas under local government responsibility, adding 1.4 million new acres of land into the two higher tiers of fire severity, which will update building and local planning requirements for these communities statewide.
- Requires the Department of Forestry and Fire Protection (CAL FIRE) and the Governor's Office of Emergency Services (Cal OES) to work with local, federal and tribal partners on improvements to the Federal resource ordering system for wildfire response.

Protecting homes

Science has shown that combustible material within the immediate five feet of a structure contributes the greatest risk of embers directly or indirectly igniting the home. "Zone 0" regulations under development for new and existing construction would require an ember-resistant zone within the immediate 5-feet of structures in local area Very High Fire Hazard Severity Zones in Local Responsibility Areas, and Fire Hazard Severity Zones in State Responsibility Areas.

Zone 0 regulations would move forward this year in tandem with financial assistance and relief for homeowners, proposed in the Governor's January Budget, and to be augmented by the California Conservation Corps supporting work in vulnerable communities and in coordination with local Fire Safe Councils. While it is anticipated that the regulations would apply to new construction upon taking effect, requirements for existing homes would likely be phased in over three years to allow homeowners to prepare and prioritize mitigations and secure financial assistance.

Research suggests that the cost of building a home with Zone 0 mitigations already incorporated adds little to no cost to building a comparable home without those features.

Updating fire hazard severity areas

To ensure future resiliency against urban firestorms, local government planners and developers will have to factor in wildfire-hardening requirements in building planning, design, and construction within nearly 2.3 million acres of land in areas where local governments are responsible for wildfire prevention and response, known as local responsibility areas.

The release of updated Fire Hazard Severity Zones for Local Responsibility Area maps would identify new areas where new development is required to adhere to the highest standards of wildfire resilient building codes and land-use planning. These new zones and maps would add approximately 1.4 million new acres of land into the two higher tiers of fire hazard severity. Specifically, they would expand current wildfire building resiliency requirements in the High-Fire Hazard Severity Zone to approximately 1.16 million new acres, and they would expand both current wildfire building and local planning resiliency requirements in the Very High- Fire Hazard Severity Zone to approximately 247,000 new acres.

The release of these updated zones and maps, which are expected to be released one region at a time beginning in Northern California, would begin a 120-day clock for local government jurisdictions to adopt local ordinances incorporating the State Fire Marshal's recommendations.

The release of these Local Responsibility Area maps would follow last year's release of equivalent updated zones and maps in the State Responsibility Area, and follow months of planning discussions, including consultation with insurance providers who have developed their own models to determine risk, premiums and coverage that are independent of the state's Fire Hazard Severity Zone maps.

Investing in wildfire prevention

Overall, the state has more than doubled investments in wildfire prevention and landscape resilience efforts, providing more than $2.5 billion in wildfire resilience since 2020, with an additional $1.5 billion from the 2024 Climate Bond to be committed beginning this year for proactive projects that protect communities from wildfire and promote healthy natural landscapes. Of note, since 2021, the State has made strategic investments in at least 61 fuels reduction projects near the Palisades and Eaton fire perimeters through projects treated over 14,500 acres.

The Newsom Administration has invested $2 billion to support CAL FIRE operations, a 47% increase since 2018, which has helped build CAL FIRE from 5,829 positions to 10,741 in that same period, and the Administration is now implementing shorter workweeks for state firefighters to prioritize firefighter well-being while adding 2,400 additional state firefighters to CAL FIRE's ranks over the next five years.

Augmenting technological advancements and pre-deployment opportunities

The Newsom Administration has also overseen the expansion of **California's aerial firefighting fleet**, including the addition of more than 16 helicopters with several equipped for night operations, expanded five helitack bases, and assumed ownership of seven C-130 air tankers, making it the largest fleet of its kind globally.

California is also leveraging AI-powered tools to spot fires quicker, has deployed the Fire Integrated Real-Time Intelligence System (FIRIS) to provide real-time mapping of wildfires, and has partnered with the U.S. Department of Defense to use satellites for wildfire detection and invested in LiDAR technology to create detailed 3D maps of high-risk areas, helping firefighters better understand and navigate complex terrains.

In **anticipation of severe fire weather** conditions in early January 2025, Cal OES approved the prepositioning of 65 fire engines, as well as more than 120 additional firefighting resources and personnel in Los Angeles, Orange, Santa Barbara, Ventura, Riverside, San Bernardino, and San Diego counties, and CAL FIRE moved firefighting resources to Southern California including 45 additional engines and six hand crews to the region.

During the wildfires, California was able to mobilize **more than 16,000 personnel** including firefighters, National Guard servicemembers, California Highway Patrol officers and transportation teams to support the response to the Los Angeles firestorms, and more than 2,000 firefighting apparatus composed of engines, aircraft, dozers and water tenders to aid in putting out the fires.

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Mar 17, 2025

California y Sonora firman una nueva alianza para impulsar acciones transfronterizas sobre el aire y la energía limpia

Mar 17, 2025

California and Sonora sign new partnership advancing cross-border action for cleaner air and clean energy

Mar 17, 2025

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Jennifer Wilkins <jengwilks1@gmail.com>
Sent: Monday, March 17, 2025 8:50 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: llaf.esuf@asm.ca.gov; assemblymember.wicks@assembly.ca.gov; gavin.newsom@gov.ca.gov; ann.oleary@gov.ca.gov
Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Dear MOX EIR Team,

We are writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.

While we recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines, though initially more costly, offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

We urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies.

Thank you for considering this critical issue. We look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,
Jennifer and Brian Wilkins
44 Evirel Pl, Oakland, CA 94611
510-316-8991
jengwilks1@gmail.com

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: jun furuta <jkfuruta@sbcglobal.net>
Sent: Monday, March 17, 2025 8:32 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Moraga-Oakland X 115 kV Rebuild Project

Dear Tharon Wright,

I attended the virtual scoping meeting on March 13th for the Moraga-Oakland X 115 kV Rebuild Project. I want to echo the comments of all the other attendees in my session and express my concern that the proposed rebuild only undergrounds the power lines over the lower residential areas while leaving four miles of increased capacity lines over vulnerable, high fire risk zones through Shepard Canyon and over the heavily wooded Oakland / Moraga hills.

As climate change impacts the East Bay, I have personally seen the stressed and fallen trees that have succumbed to the drier conditions in the Oakland hills. I believe it is a mistake to replace the existing infrastructure with similar towers and overhead lines in the most fire prone areas. To not underground the power lines at this retrofit opportunity risks a repeat of the 1991 Oakland hills fire over the decades long life of this rebuilt section. Please reconsider this proposal and push to underground the entire path of this retrofit, but especially over the Oakland / Moraga hills where it is most needed.

Thank you,
-Jun Furuta

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Jeni P <jenipaltiel@gmail.com>
Sent: Tuesday, March 18, 2025 10:23 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Moraga-Oakland X Project

Hi -
I'm writing to add my voice to those asking you to consider undergrounding the high-voltage transmission lines that run between Moraga and Park Blvd in Oakland, rather than just replacing them with more above-ground lines.

As you probably know, Orinda-Moraga was one of the top three areas identified by state officials as being at risk of being the next Pacific Palisades-style disaster (https://www.sfchronicle.com/politics/article/orinda-moraga-fire-risk-20036253.php)

Living in the Oakland Hills, wildfire danger is a constant threat, and anything you can do to help mitigate that risk is crucial. Now, when you're already working on these lines, is the time to make them as safe as possible by undergrounding them.

Sincerely,
Jeni Paltiel
2173 Trafalgar Pl
Oakland CA 94611

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Rachel Colby <rachelcolby11@gmail.com>
Sent: Wednesday, March 19, 2025 9:30 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Moraga-Oakland X Rebuild Project (PG&E) - Please underground power lines wherever possible

Hello,

This comment is in regards to the Moraga-Oakland X Rebuild Project proposed by PG&E. As a resident of an area with a high wildfire risk, I urge PG&E to underground power lines wherever feasible, and to take wildfire risk into account when deciding which power lines to underground. Safety is of the utmost importance and I would even be willing to endure higher costs if it would ensure that more power lines would be undergrounded and wildfire risk would be reduced.

Thank you,

Rachel Colby
4745 Lincoln Ave
Oakland, CA

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Mark Johnson <mtjohnson6547@gmail.com>
Sent: Thursday, March 20, 2025 6:52 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Moraga-Oakland X 115 Rebuild Project

To: Tharon Wright, CPUC

I am writing to urge officials to amend the proposed scope of PG&E's Moraga-Oakland X 115kV Transmission Line Rebuild Project to allow for undergrounding the entire length of the lines being replaced, not just those along Park Blvd. Doing so is critical due to the high fire risk that is present in the area between the Moraga substation and Park Blvd.

Thank you for the opportunity to provide input. If you don't mind, could you please confirm receipt of this email. Thank you.

Mark Johnson
Oakland hills resident

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Sarah Saltzer <sarahsaltzer@outlook.com>
Sent: Saturday, March 22, 2025 9:03 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Letter in support of
Attachments: Letter to CPUC.docx

MOX EIR Team,

Please see attached letter in support of undergrounding PGE lines.
Sarah Saltzer

Sarah D. Saltzer
1989 Asilomar Drive
Oakland, CA. 94611
Cell: 925-785-4940
E-mail: sarahsaltzer@outlook.com

Email: MOX@aspeneg.com March 22, 2025

Ms. Tharon Wright, CPUC Project Manager

Subject: **Support for Undergrounding All Electrical Wires in "Very High" Fire Danger Areas**

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I support Alternative B (Undergrounding Manzanita Drive-Colton Boulevard-Estates Drives), but strongly urge CPUC to mandate undergrounding **all** electrical lines for this and future projects, in regions designated as "very high" fire danger severity zones. Recent devastating fires have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks and feeds into the homeowners' insurance crisis, consistent with SB 884.

While I recognize that the proposed MOX Project includes only a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines, though initially more costly, offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks and redirect investment into new technology.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in "very high" fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies, consistent with the intent and goal in SB 884. Thank you for considering this critical issue. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,

Sarah D. Saltzer

CC: Governor Newsom
Mayor Jenkins
Senator Arrequin
Assemblymember Wicks
Councilmember Ramachadran

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Barbara Rosenfeld <jdorchid@me.com>
Sent: Tuesday, March 25, 2025 3:45 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: Montclair PGETowers; Undergrounding Montclair; Janani Ramachadran; Erika Neal; Ilaf Esuf; Daijon Jackson
Subject: MOX REBUILD PROJECT: SUPPLEMENT TO CPUC SUBMISSION: ALTERNATIVE B
Attachments: CPUC Supplemental Submission.pdf

Attached please find my supplemental submission.

BARBARA L. ROSENFELD
1965 Asilomar Drive
Oakland, CA. 94611
Tel. 510-817-4869
Cell: 310-709-4329
E-mail: jdorchid@me.com

Email: MOX@aspeneg.com

March 25, 2025

Ms. Tharon Wright, CPUC Project Manager

Subject: **MOX Rebuild Project: CPUC Request to Address the Alternatives**

Dear MOX EIR Team,

I am writing to supplement my response dated March 3, 2025, to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project. The CPUC specifically requested that the Alternatives be addressed.

Alternative B provides more undergrounding and thus, more public safety than the primary PGE proposal. Despite the Oakland Hills having experienced a tragic loss of 25 lives and destruction of 3,400 homes in 1991, and the passage of SB 884 in 2022, it is my understanding that the CPUC approved a 10-year undergrounding plan that omits significant portions of the Oakland Hills.

It is imperative that the omission from the 10-year plan be corrected before another devastating tragedy. In the interim, Alternative B appears to offer greater protection against fire risk.

Sincerely,

B Rosenfeld

Barbara L. Rosenfeld

CC: Governor Newsom
Interim Mayor Jenkins
Senator Arrequin
Assemblymember Wicks
Councilmember Ramachadran
Undergrounding Montclair undergrounding.montclair@gmail.com
PGETower Group stopthepgetowersmontclair@gmail.com

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Beth Wrightson <beth.wrightson@gmail.com>
Sent: Tuesday, March 25, 2025 8:02 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project <MOX@aspeneg.com>
Subject: Support for Undergrounding All Electrical Wires in “Very High” Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission’s (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company’s (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to mandate undergrounding all electrical lines for this and future projects, in regions designated as “very high” fire danger severity zones. Recent devastating fires have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks and feeds into the homeowners’ insurance crisis, consistent with SB 884.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines, though initially more costly, offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks and redirect investment into new technology.

PGE acknowledges in its Wildfire Risk Mitigation that: “When a line is underground, we reduce nearly all wildfire ignition risk in that location.” PGE has mitigated other “very high” fire risks with undergrounding, and acknowledges current capacity, safety, reliability and longevity issues. Updated technology (undergrounding) provides the opportunity to improve service to customers, public safety and esthetics.

Undergrounding would also address PGE’s justification of its March rate increase - due to the cost of tree pruning. Undergrounding eliminates a huge recurring financial, environmental and esthetic cost. Ratepayers are entitled to a responsible use of their funds, and a forward-looking utility provider.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in “very high” fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies, consistent with the intent and goal in SB 884. Thank you for considering this critical issue. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,

Beth Wrightsonn
2410 Scout Road
Oakland, CA 94611

CC: Governor Newsom
Mayor Jenkins
Senator Arrequin
Assemblymember Wicks
Councilmember Ramachadran

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: renee cameto <reneecameto321@yahoo.com>
Sent: Tuesday, March 25, 2025 5:48 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: RENEE CAMETO
Subject: MOX REBUILD PROJECT: CPUC REQUEST TO ADDRES THE ALTERNATIVES

I AM WRITING TO COMMENT ON THE MOX REBUILD PROJECT ENVIRONMENTAL IMPACT REPORT REGARDING THE PGE MORAGA-OAKLAND X (MOX) REBUILD PROJECT ALTERNATIVES.

ALTERNATIVE B PROVIDES MORE UNDERGROUNDING AND THUS, GRREATER PUBLIC SAFETY THAN THE PRIMARY PGE PROPOSAL.

THE CURRENT PLAN DOES NOT CONTAIN ENOUGH UNDERGROUNDING TO ADEQUATELY PROTECT OAKLAND. IT IS IMPERATIVE THAT THE CURRENT PLAN BE IMPROVED TO PROVIDE MAXIMUM PROTECTION FOR OAKLAND FROM WILDFIRES.

PLEASE ADOPT ALTERNATIVE B

SINCERELY,

RENEE CAMETO
5538 BALBOA DRIVE, OAKLAND, CA 94611

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: ANEDRA GUINN <anedra.guinn@comcast.net>
Sent: Wednesday, March 26, 2025 11:04 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks. While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies. Thank you for considering this critical issue. Of course this is personal for us, as we lived through the Hills fire in the 90's, and also, our current home in Montclair sits so close to so many power lines, in fact one that sits directly on our property; however, it is the total loss of community that concerns us the very most when the next fire comes to the hills of Oakland, and it will. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,

Anedra Guinn
510.410.4650
anedra.guinn@comcast.net

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Donna Johnke <mdjohnke@att.net>
Sent: Wednesday, March 26, 2025 3:33 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: J5LR@pge.com
Subject: Concerns over the PG&E Moraga-Oakland Transmission Line Project

Dear Ms. Wright,

I am an Orinda Resident, and have been following the planning of the Moraga-Oakland Transmission Line Rebuild Program closely. I attended the public information forum at the Orinda Community Center last spring, as well as the CPUC zoom meeting on March 13th of this year. Since that time, there are already discrepancies and new concerns that I feel PG&E needs to address.

First is the concern of planned under grounding of the lines through Piedmont. At the spring information session with PG&E, I was told by their representatives that under grounding lines were not feasible due to "seismic" concerns as well as issues with property easements, and then (as always) cost. Now we have under grounding occurring in Piedmont. This makes no sense what so ever. According to the most recent Cal Fire maps made public in February, Piedmont is in a "moderate risk zone," whereas all of Orinda is in a "very high fire risk zone". Also, as for the answer that under grounding can't happen due to earthquake risk, Piedmont is literally on the Hayward Fault line. So are all of our gas lines, which are at a much greater risk of rupturing and causing fire than underground electrical lines.

I would like an answer as to why Piedmont gets electrical lines underground, and not the areas of greatest fire risk, which are the hills that separate us?

Here is my other concern with the current plan. The PG&E reps last spring stated the new towers along the this line will be 10 feet higher than the current lines and built to withstand 85 mph winds. Obviously, outdated climate models have been used, as wind gusts over 80 mph have been clocked in the east bay hills in the past two years. PG&E commercials tell us that they are making an unprecedented effort to underground lines in high fire danger areas,
https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.youtube.com/watch%3Fv%3DAxzW6TvEv8o&ved=2ahUKEwi-0t-H3KiMAxVOHjQIHQ3yJN0QwqsBegQIDBAG&usg=AOvVaw2cJQxirrMUpt9bsIC8JVlN,
but that is just not the case.

I am perplexed. Why wouldn't PG&E make the serious infrastructure investment for the future in an area that holds one of their largest substations, the Moraga Substation on Lost Valley Drive in Orinda? This substation supplies power to Contra Costa and Alameda counties. Its location? Smack dab in the highest risk zone according to Cal Fire.

I would like an answer as to why PG&E is not following through with their claims they are making in their public service announcements? This is a generational investment, a "bandaid" won't do. Now is the time to invest in the future we can't afford any less.

Why do the individual home owners have to assume all the responsibility of climate change? We are already paying higher PG&E rates, insurance payments (if we can get it)and having to spend thousands to harden our homes against fire to comply with new city, fire district and state mandates? I am happy to see PG&E step up and take maintenance and mitigation of their infrastructure seriously after years of neglect. However, more accountability needs to be placed on the utility that has been the cause of these fires to begin with.

Thank you for considering my concerns and answering my two questions. I look forward to hearing some concrete answers to my two questions.

Sincerely,

Donna Johnke
17 Lost Valley Drive
Orinda, CA 94563

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Jason Rife <jsrife@hotmail.com>
Sent: Wednesday, March 26, 2025 8:39 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: Ilaf.esuf@asm.ca.gov; assemblymember.wicks@assembly.ca.gov; gavin.newsom@gov.ca.gov; ann.oleary@gov.ca.gov
Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I implore CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones or near significant nature preserves, parks and adjacent residential areas. Recent devastating fires in California and other regions of the country have highlighted real and unnecessary risk posed by these transmission lines in these areas and lack of accountability and responsibility for doing what is necessary to maintain them and prevent such tragedies.

While a small porition is proposed to be underground this seems more of a PR token so be able to say a bit of money was spent to do so without actually addressing the risks.

I urge CPUC to reinvest our taxpayer and customer driven profits to prioritize undergrounding as the standard practice for all power line rebuilds in risk areas.

Thank you for considering this critical issue. I look forward to seeing stronger actions and commitments to this project.

Sincerely,
Jason Rife & Reem Malik
7410 Skyline Blvd
Oakland, CA 94611

Jason S. Rife
jsrife@hotmail.com
646.373.6849

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: John Campbell <johnwcampbell3rd@gmail.com>
Sent: Wednesday, March 26, 2025 12:42 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Ms. Tharon Wright, CPUC Project Manager Dear Ms. Wright and MOX EIR Team:

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge the CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I urge the CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies. In assessing the costs involved, please consider not only the increased, unmitigated risks associated with retaining overhead lines and towers, but the substantial financial and environmental costs of vegetation management over the 100 year lifespan of overhead wiring.

Sincerely,

John and Jessica Campbell
20 Marlborough Court Piedmont
510-501-4205

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Ken Heilig <hkwheilig@gmail.com>
Sent: Wednesday, March 26, 2025 6:04 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Under ground wiring now

Sent from my iPhone

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Lars Johnson <larspjohnson@gmail.com>
Sent: Wednesday, March 26, 2025 4:14 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Undergrounding power lines Oakland hills

Dear MOX EIR Team,
I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I urge you to highly consider undergrounding all high voltage power lines in the Oakland and Berkeley area. This area is very densely populated. I believe the 1991 fires and the recent Palacades fire in Los Angeles are reasons why we need to underground high voltage power lines in area of high fire risk.

I am a resident of Piedmont and I understand that a portion of these power lines are very near the south east boundary of Piedmont.
Thanks
Lars Johnson
Piedmont California
Sent from my iPhone

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Lisa Diamond <lisa_diamond@yahoo.com>
Sent: Wednesday, March 26, 2025 8:50 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Noticeof Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines offers significant long-term benefits in terms of reducing fire risks i, mproving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies.

Thank you for considering this critical issue. Of course this is personal for us, as we lived through the Hills fire in the 90's, and also, our current home in Montclair sits so close to so many power lines, in fact one that sits directly on our property; however, it is the total loss of community that concerns us the very most when the next fire comes to the hills of Oakland, and i t will. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,
Lisa Diamond
Montclair resident

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Marvin Schwartz <marvschwartz@igc.org>
Sent: Wednesday, March 26, 2025 10:28 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: PG&E Moraga to Oakland line

Dear MOX EIR Team, I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project. I strongly urge CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks. I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies.

I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,

Marvin Schwartz (survivor of the 1991 Oakland fire)
18 Ascot Lane (in the Oakland hills)
Oakland, CA 94611

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Cynthia Barbera <cynbarbera@gmail.com>
Sent: Thursday, March 27, 2025 2:22 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: URGENT - We must underground electric lines in Montclair High Fire Risk area!

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland (MOX) 115 kV Rebuild Project.

My family has resided in Montclair for over 70 years. Our home nearly burned i n the terrible 1991 firestorm that killed 25 people, burned 3800 homes and resulted in $3 billion in damages in today's dollars.

I strongly urge CPUC to consider undergrounding all electrical lines in the Montclair Hills area. The devastating fires in Los Angeles, the Palisades, and Altadena are yet another reminder to underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the overhead power lines that exacerbates these risks.

The areas in question are not at very high risk of f i re as we already have seen, but they also

Montclair area has 3 roads to safety to serve 10,000 residents. It is already perilous should a fire occur. If even one road were blocked due to a downed power line, it would be catastrophic.

Further, "hardening" of utility poles does not mitigate these dangers given the high tree-fall-in risk, as was already pointed out in PG&E's own Wildfire Mitigation Plan. Undergrounding power lines offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I again urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies.

Sincerely,

Cynthia H Barbera
Oakland, CA
cynbarbera@gmail.com

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Dave Reichmuth <dave.reichmuth@gmail.com>
Sent: Thursday, March 27, 2025 3:48 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Scoping Comments for NOP of EIR for PG&E's Moraga-Oakland X (MOX) 115 Kilovolt (kV) Rebuild Project
Attachments: PGE MOX EIR.pdf

CPUC Commissioners and MOX EIR Team,
I am submitting the following comments on the scope and content for the Environmental Impact Review of the MOX project. These comments are in addition to the joint letter submitted by Matt Solomon and Natasha Desai which I co-signed.
The Proponent's Environmental Assessment (PEA) is inadequate as it fails to evaluate the consequences of the wildfire risk of the proposed project and does not quantify the reduction in environmental impact from a lower wildfire risk alternative (Alternative B). PG&E should be directed to develop a project proposal consistent with Alternative B in an area that is known to be susceptible to hazardous wildfire. The PEA states that the primary reason to reject Alternative B is that "it would not be economical". However, there is no analysis or data provided to quantify the increase in cost for undergrounding the transmission line in these highly populated areas that are known to be at high risk for wildfire.
The PEA also does not adequately quantify the risk of wildfire nor evaluate the consequences of a wildfire initiated by overhead transmission lines. The WTRM model used appears to be based on historical condi tions and does not reflect the impact of climate change on the ignition risk over the decades that this line would be in operation. The average annual maximum temperature in California is projected to rise 3.3 to 4.4 degrees F by 2050 and up to 7.2 degrees by 2070. [1] Increased temperatures, coupled with changing precipitation patterns driven by climate change are projected to increase wildfire potential in the state dramatically. [2] This project's impacts must be considered in the context of the e nvironment that is likely to exist in the coming decades.
Even with the baseline calculations that do not account for the likely more extreme future conditions, PG&E's WTRM model shows that the project at completion would still have an annual wildfire risk of 0.331%, which i s significant given the likely lifespan of this line of decades. Over a 50-year span, this equates to a greater than 15% risk of wildfire and 22%

over 75 years. Given the non-negligible risk of wildfire, the impacts of a wildfire in the proposed overhead zones must be considered and fully quantified.

The consequences of fire in the Oakland hills is well known from the experience of the 1991 Tunnel Fire, which killed 25 people and damaged over 3,000 structures. The PEA briefly notes that over 1,500 structures - primary residences – are within 1,000 feet of the proposed overhead lines in the Montclair neighborhood and more homes are uphill from the Diamond Canyon area where the overhead lines currently cross. However, no estimate is made of the potential lives or property that would continue to be at risk from an overhead transmission line initiated fire. The PEA also does not consider the potential environmental impacts from a fire in these areas, which would be significant as well. While the full impacts of urban-interface wildfire like the Altadena fires are only beginning to be researched, early indications are that there are significant and long-lasting impacts.[3]

The PEA states Alternative B would replace approximately 4.2 miles of the existing overhead lines by underground lines. Although the wildfire risk reduction was not calculated for Alternative B, it is likely that it would result in a substantial reduction in wildfire risk. Alternative B would replace more of the lines underground and would provide an incrementally greater reduction in wildfire risk than the proposed project during the O&M project phase." Given the catastrophic impacts of utility-caused wildfire the state over the past decade, these "substantial reductions in wildfire risk" from Alternative B and other fully underground alternatives must be calculated and compared to the potential risks of the proposed project during the operation and maintenance phase.

Sincerely,

David Reichmuth
2278 Leimert Blvd
Oakland, CA 94602

[1]California's Fourth Climate Change Assessment: San Francisco Bay Area Region Report (2019) https://www.energy.ca.gov/sites/default/files/2019-11/Reg_Report-SUM-CCCA4-2018-005_SanFranciscoBayArea_ADA.pdf

[2] Projected Changes in Reference Evapotranspiration in California and Nevada: Implications for Drought and Wildland Fire Danger, McEvoy et al, (2020) https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2020EF001736

[3] Science, vol 387, issue 6741 (2025). https://www.science.org/content/article/scientists-scramble-to-track-la-wildfires-long-term-health-impacts

March 27, 2025

RE: Public Comment on EIR Scoping for the Proposed PG&E Moraga-Oakland Transmission Rebuild Project (MOX 115 kV Rebuild Project)

Dear CPUC Commissioners and MOX EIR Team,

I am submitting the following comments on the scope and content for the Environmental Impact Review of the MOX project. These comments are in addition to the joint letter submitted by Matt Solomon and Natasha Desai which I co-signed.

The Proponent's Environmental Assessment (PEA) is inadequate as it fails to evaluate the consequences of the wildfire risk of the proposed project and does not quantify the reduction in environmental impact from a lower wildfire risk alternative (Alternative B). PG&E should be directed to develop a project proposal consistent with Alternative B and evaluate a fully underground alternative to minimize fire risk from transmission lines in an area that is known to be susceptible to hazardous wildfire.

The PEA states that the primary reason to reject Alternative B is that "it would not be economical". However, there is no analysis or data provided to quantify the increase in cost for undergrounding the transmission line in these highly populated areas that are known to be at high risk for wildfire.

The PEA also does not adequately quantify the risk of wildfire nor evaluate the consequences of a wildfire initiated by overhead transmission lines. The WTRM model used appears to be based on historical conditions and does not reflect the impact of climate change on the ignition risk over the decades that this line would be in operation. The average annual maximum temperature in California is projected to rise 3.3 to 4.4 degrees F by 2050 and up to 7.2 degrees by 2070.[1] Increased temperatures, coupled with changing precipitation patterns driven by climate change are projected to increase wildfire potential in the state dramatically.[2] This project's impacts must be considered in the context of the environment that is likely to exist in the coming decades.

Even with the baseline calculations that do not account for the likely more extreme future conditions, PG&E's WTRM model shows that the project at completion would still have an

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[1]California's Fourth Climate Change Assessment: San Francisco Bay Area Region Report (2019) https://www.energy.ca.gov/sites/default/files/2019-11/Reg_Report-SUM-CCCA4-2018-005_SanFranciscoBayArea_ADA.pdf

[2] Projected Changes in Reference Evapotranspiration in California and Nevada: Implications for Drought and Wildland Fire Danger, McEvoy et al, (2020) https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2020EF001736

annual wildfire risk of 0.331%, which is significant given the likely lifespan of this line of decades. Over a 50-year span, this equates to a greater than 15% risk of wildfire and 22% over 75 years. Given the non-negligible risk of wildfire, the impacts of a wildfire in the proposed overhead zones must be considered and fully quantified.

The consequences of a fire in the Oakland hills is well known from the experience of the 1991 Tunnel Fire, which killed 25 people and damaged over 3,000 structures. The PEA briefly notes that over 1,500 structures – primarily residences – are within 1,000 feet of the proposed overhead lines in the Montclair neighborhood and more homes are uphill from the Dimond Canyon area where the overhead lines currently cross. However, no estimate is made of the potential lives or property that would continue to be at risk from an overhead transmission line initiated fire. The PEA also does not consider the potential environmental impacts from a fire in these areas, which would be significant as well. While the full impacts of urban-interface wildfires like the Altadena fires are only beginning to be researched, early indications are that there are significant and long-lasting impacts.[3]

The PEA states "Alternative B would replace approximately 4.2 miles of the existing overhead lines by underground lines. Although the wildfire risk reduction was not calculated for Alternative B, it is likely that it would result in a substantial reduction in wildfire risk. Alternative B would replace more of the lines underground and would provide an incrementally greater reduction in wildfire risk than the proposed project during the O&M project phase." Given the catastrophic impacts of utility-caused wildfire in the state over the past decade, these "substantial reductions in wildfire risk" from Alternative B and other fully underground alternatives must be calculated and compared to the potential risks of the proposed project during the operation and maintenance phase.

Sincerely,

David Reichmuth
2278 Leimert Blvd
Oakland, CA 94602

[3] Science, vol 387, issue 6741 (2025). https://www.science.org/content/article/scientists-scramble-to-track-la-wildfires-long-term-health-impacts

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: cuzzofam@jps.net
Sent: Thursday, March 27, 2025 11:54 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Response to CPUC's NOP for their EIR

Dear MOX EIRTeam,
I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) or the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.
I strongly urge CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.
While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines o ers significant long-term benefits in terms of reducing fi fire risksi, mproving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.
I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fi fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies.
Thank you for considering this critical issue. Of course this is personal for us, as we lived through the Hills fire in the 90's, and also, our current home in Montclair sits so close to so many power lines, in fact one that sits directly on our property; however, it is the total loss of community that concerns us the very most when the next fire comes to the hills of Oakland, and it will. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.
Sincerely,
Jean Marcuzzo

Dale and Roswitha Robinson
1962 Asilomar Dr.
Oakland, Ca 94611
Tel. 510-339-2769
E-mail: roswithar1022@g.mail.com

March 8, 2025

Ms. Tharon Wright, CPUC Project Manager
PUC State of California
505 Van Ness Ave
San Francisco, CA, 94107

Subject: Support for Undergrounding All Electrical Wires in "Very High" Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to mandate undergrounding all electrical lines for this and future projects, in regions designated as "very high" fire danger severity zones. Recent devastating fires have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks and feeds into the homeowners' insurance crisis, consistent with SB 884.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines, though initially more costly, offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks and redirect investment into new technology.

PGE acknowledges in its Wildfire Risk Mitigation that: "When a line is underground, we reduce nearly all wildfire ignition risk in that location." PGE has mitigated other "very high" fire risks with undergrounding, and acknowledges current capacity,

safety, reliability and longevity issues. Updated technology (undergrounding) provides the opportunity to improve service to customers, public safety and esthetics.

Undergrounding would also address PGE's justification of its March rate increase - due to the cost of tree pruning. Undergrounding eliminates a huge recurring financial, environmental and esthetic cost. Ratepayers are entitled to a responsible use of their funds, and a forward-looking utility provider.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in "very high" fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies, consistent with the intent and goal in SB 884. Thank you for considering this critical issue. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,

Dale Robinson Roswitha Robinson

Dale and Roswitha Robinson

CC: Governor Newsom
Mayor Jenkins
Senator Arrequin
Assemblymember Wicks
Councilmember Ramachadran

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Janet Hailer <jhhh.hailer@gmail.com>
Sent: Thursday, March 27, 2025 2:56 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

Ms. Tharon Wright, CPUC Project Manager Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas Dear MOX EIR Team, I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks.

While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies.

Thank you for considering this critical issue. Of course this is personal for us, as we lived through the Hills fire in the 90's, and also, our current home in Montclair sits so close to so many power lines, in fact one that sits directly on our property; however, it is the total loss of community that concerns us the very most when the next fire comes to the hills of Oakland, and it will. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,

Janet Hailer

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Brenda S. <bresshon@yahoo.com>
Sent: Friday, March 28, 2025 12:14 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: MOX Project Comment

Dear CPUC, Moc
Thank you for the opportunity to comment on the MOX Project. We are residents in the Montclair District situated in the Oakland Hills. We are gravely concerned of the wildfire risk posed by the overhead MOX transmission lines running though Montclair, especially in Shepherd Canyon located in heart of Montclair. We urge CPUC to amend the proposal submitted by PGE, to either underground the transmission line in Montclair, or relocate the transmission line to other less wooded and less densely populated area. Montclair is a heavily wooded and densely populated area, The area is often buffeted by strong canyon winds, especially during the dry season. There are very limited ingress and egress routes for a population of this size. Overhead transmission line in this area poses great wildfire risk, and the consequence of a wildfire in this area will be devastating. Therefore, we urge CPUC to amend the proposal submitted by PGE,
to either under ground the transmission line in Montclair, or relocate the transmission line tp other less wooded and less densely populated area.
Thank you,
Brenda So and Family

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: BK Doyra <bkdoyra@yahoo.com>
Sent: Friday, March 28, 2025 11:14 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Fw: MOX REBUILD PROJECT: SUPPLEMENT TO CPUC SUBMISSION: ALTERNATIVE B
Attachments: CPUC Supplemental Submission.pdf

Hello,

I agree with Barbara Rosenfeld. The wires will eventually need to be undergrounded. Why not do it now and save the time and expense of dealing with the problem twice minimizing the fire hazard in the process.

Sincerely BK Doyra

----- Forwarded Message -----
From: Barbara Rosenfeld <jdorchid@me.com>
To: "mox@aspeneg.com" <mox@aspeneg.com>
Cc: Montclair PGETowers <stopthepgetowersmontclair@gmail.com>; Undergrounding Montclair <undergrounding.montclair@gmail.com>; Janani Ramachadran <district4@oaklandca.gov>; Erika Neal <erika.neal@sen.ca.gov>; Ilaf Esuf <ilaf.esuf@asm.ca.gov>; Daijon Jackson <daijon.jackson@asm.ca.gov>
Sent: Tuesday, March 25, 2025 at 03:45:29 PM PDT
Subject: MOX REBUILD PROJECT: SUPPLEMENT TO CPUC SUBMISSION: ALTERNATIVE B

Attached please find my supplemental submission.

BARBARA L. ROSENFELD
1965 Asilomar Drive
Oakland, CA. 94611
Tel. 510-817-4869
Cell: 310-709-4329
E-mail: jdorchid@me.com

Email: MOX@aspeneg.com

March 25, 2025

Ms. Tharon Wright, CPUC Project Manager

Subject: **MOX Rebuild Project: CPUC Request to Address the Alternatives**

Dear MOX EIR Team,

I am writing to supplement my response dated March 3, 2025, to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project. The CPUC specifically requested that the Alternatives be addressed.

Alternative B provides more undergrounding and thus, more public safety than the primary PGE proposal. Despite the Oakland Hills having experienced a tragic loss of 25 lives and destruction of 3,400 homes in 1991, and the passage of SB 884 in 2022, it is my understanding that the CPUC approved a 10-year undergrounding plan that omits significant portions of the Oakland Hills.

It is imperative that the omission from the 10-year plan be corrected before another devastating tragedy. In the interim, Alternative B appears to offer greater protection against fire risk.

Sincerely,

B Rosenfeld

Barbara L. Rosenfeld

CC: Governor Newsom
Interim Mayor Jenkins
Senator Arrequin
Assemblymember Wicks
Councilmember Ramachadran
Undergrounding Montclair undergrounding.montclair@gmail.com
PGETower Group stopthepgetowersmontclair@gmail.com

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Denis Neema <dneema@yahoo.com>
Sent: Wednesday, March 26, 2025 7:00 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Support for Undergrounding All Electrical Wires in High Fire Danger Areas

Dear MOX EIR Team,

I am writing in response to the California Public Utilities Commission's (CPUC) Notice of Preparation (NOP) for the Environmental Impact Report (EIR) regarding the Pacific Gas and Electric Company's (PG&E) Moraga-Oakland X (MOX) 115 kV Rebuild Project.

I strongly urge CPUC to consider undergrounding all electrical lines for this and future projects, especially in regions designated as high fire danger zones. Recent devastating fires in Los Angeles, the Palisades, and Altadena have underscored the critical risks posed by overhead power lines in wildfire-prone areas. These fires have not only caused tragic loss of life and property but have also highlighted the urgent need to address the infrastructure that exacerbates these risks. While I recognize that the proposed MOX Project includes a small segment of underground lines, I believe that a more comprehensive solution is necessary to protect both communities and the environment. Undergrounding power lines offers significant long-term benefits in terms of reducing fire risks, improving grid reliability, and protecting public safety. With the increasing frequency and intensity of wildfires in California, it is imperative that we take every possible measure to mitigate these risks.

I urge CPUC to prioritize undergrounding as the standard practice for all power line rebuilds in high fire risk zones. By taking this step, we can create a safer, more resilient energy infrastructure that will help prevent future tragedies. Thank you for considering this critical issue. Of course this is personal for us, as we lived through the Hills fire in the 90's, and also, our current home in Montclair sits so close to so many power lines, in fact one that sits directly on our property; however, it is the total loss of community that concerns us the very most when the next fire comes to the hills of Oakland, and it will. I look forward to seeing stronger commitments to wildfire risk reduction in the environmental review process for this project.

Sincerely,

--

Denis Neema, Realtor®
CalDRE#: 02008548

m: 415.254.0838
A little about me

COMPASS

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: andrewjeffries@comcast.net
Sent: Wednesday, March 26, 2025 11:50 AM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Cc: 'Jeffries Patty'
Subject: Seeking additional information

Thank you for sharing the PPT of the poposed project.

My name is Andrew Jeffries, and I am a property owner at 7075 Sayre Drive, Oakland. There are two towers on our lot very close to our house, with our automobile parking and gardens underneath the wires.
As you might expect, we are concerned about the scope of the project and what effects it may have on our living environment and access to our home during this project.

Several Questions/Comments

1) Please add my name to an email distribution list and include me in all further communication.
    a. Andrew and Patricia Jeffries
    b. adjeffries@comcast.net
    c. 510-684-5040
2) Will these two towers be fully replaced?
    a. Taken down and replaced with new frames and cables?
    b. What is the estimated length of time the construction equipment will be on the property?
    c. If the towers are new, must they be on the same footprint?
    d. How tall will they be? How many wires?
    e. The cables currently run over our garden areas, with many small fruit trees and landscaping. How will this be protected?
    f. If new, would it be possible to have them moved somewhat forwards or backwards along the lines to further avoid the house and the major disruption of the construction.
3) Is there a recording available from the earlier Zoom presentation.
4) What is the next public opportunity to discuss and ask questions?
5) Please describe various alternative options listed on the last page of the presentation.

Many thanks for your answers.

Sincerely,
Andrew Jeffries

PG&E Moraga-Oakland X 115 kV Rebuild Project

From: Linda <lcdannin@gmail.com>
Sent: Thursday, March 27, 2025 6:26 PM
To: PG&E Moraga-Oakland X 115 kV Rebuild Project
Subject: Extreme fire danger in Oakland hills

I am a longtime resident in the Montclair area of Oakland-centrally located in the Oakland Hills. To think that we are not in an extreme fire zone is unbelievable and dangerous to the residents, homes, businesses and wildlife in this beautiful heavily-wooded area. We are next to the area that burned and killed in 1991 and only survived due to a change in wind direction. Egress from this area is very limited, and like 1991 many of us will DIE if there is a fire. Your job is to keep us safe and take the extreme fire danger seriously. We are in need of undergrounding wires and have brought this to your attention already. Drones, warnings, tree decimation is not the answer, only possible stopgap measures. You should know that already. A decision should be made in the interest of all residents and not the ineffective ideas of PGE. We are sick of this monopoly getting its way at our expense.
Linda Walton Oakland Hills resident since 1975.
Sent from my iPhone

Appendix D

FEDERAL AVIATION ADMINISTRATION DETERMINATIONS

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1021-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Transmission Line Tower 74036853-MORAGA-OAKLAND #1 & #2-001/009
Location:	Canyon, CA
Latitude:	37-50-27.47N NAD 83
Longitude:	122-10-56.88W
Heights:	967 feet site elevation (SE) 79 feet above ground level (AGL) 1046 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

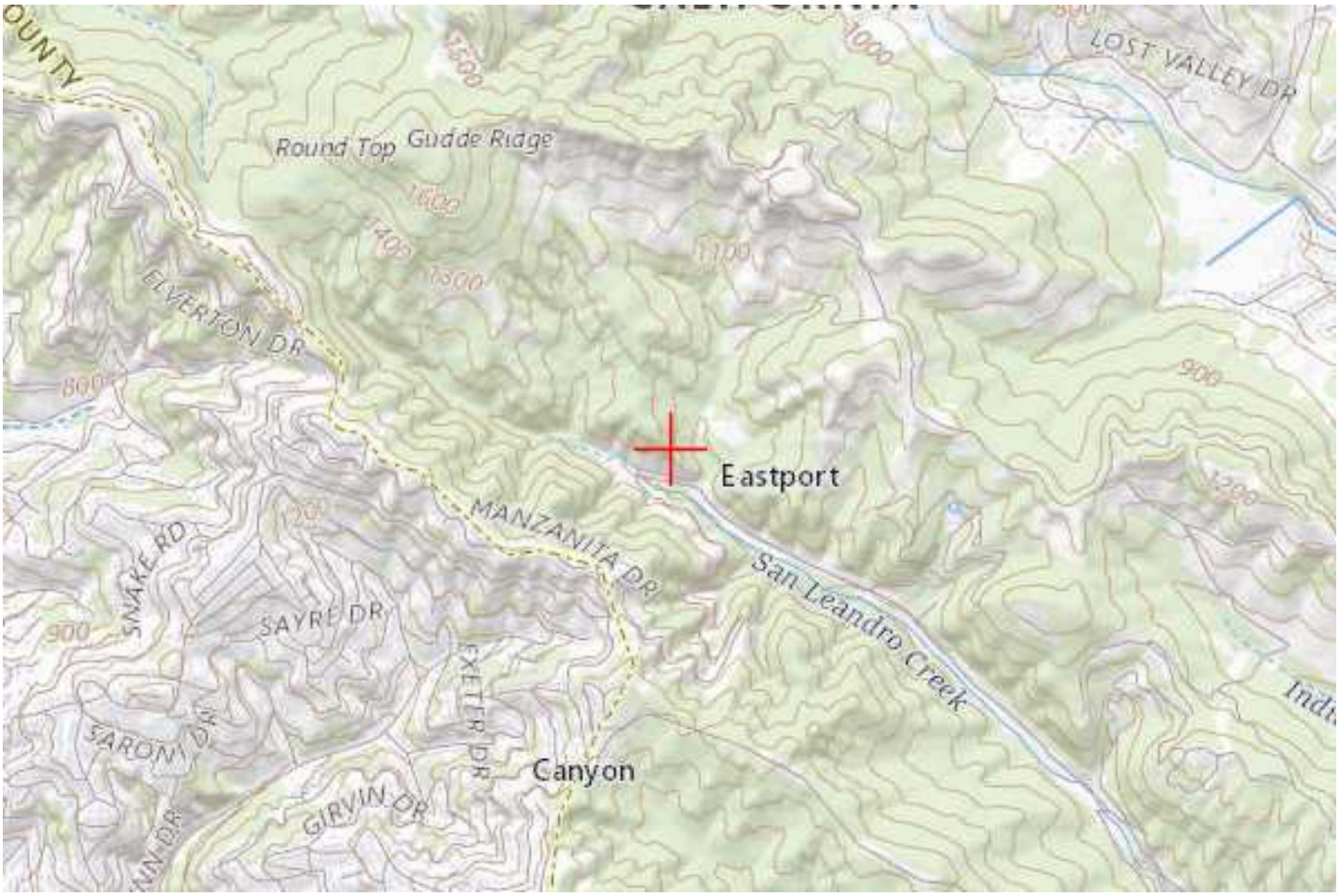
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1021-OE.

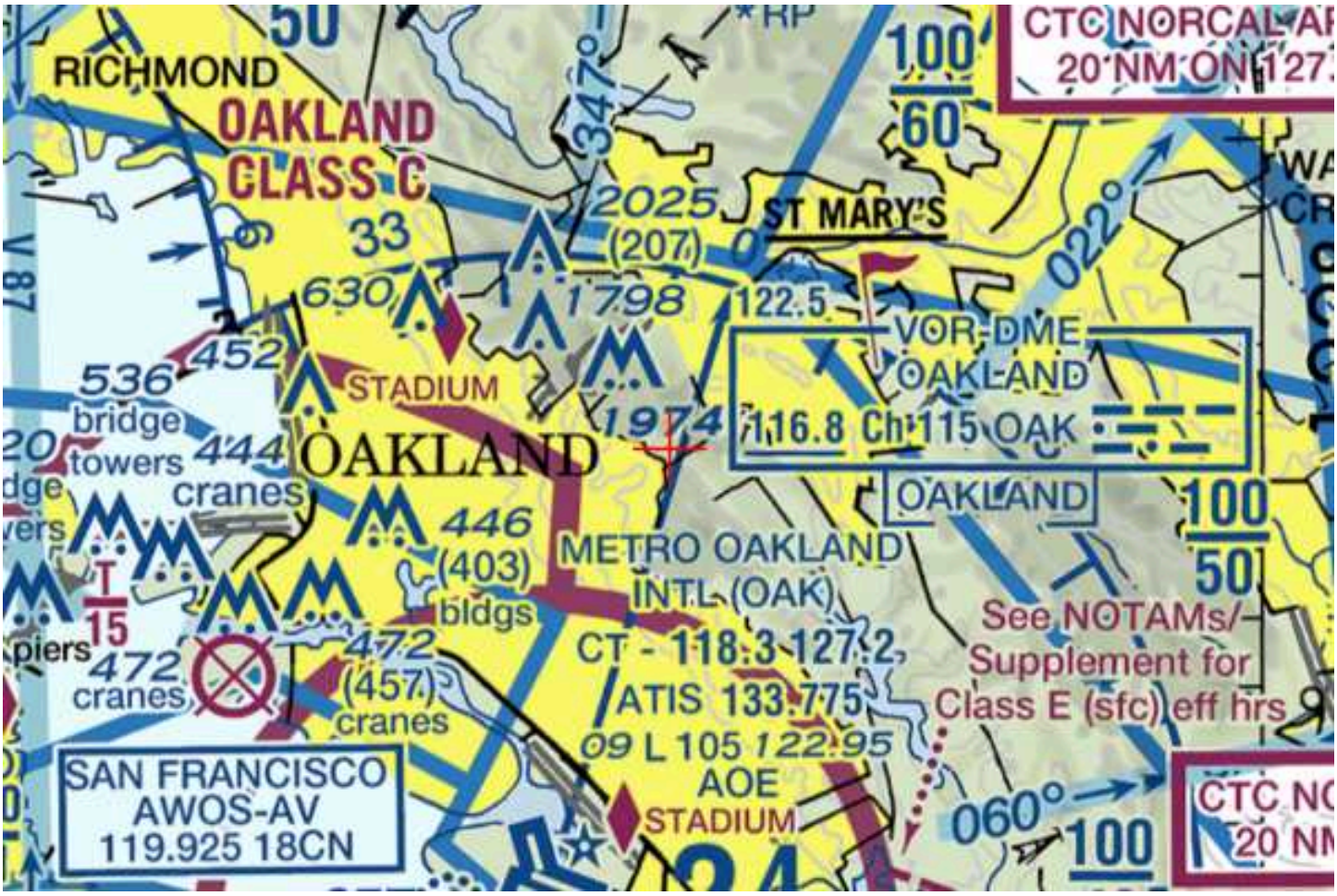
Signature Control No: 610363125-618509142 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1021-OE



Sectional Map for ASN 2024-AWP-1021-OE



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1043-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Transmission Line Tower 74036854-MORAGA-OAKLAND #3 & #4-001/009
Location:	Canyon, CA
Latitude:	37-50-27.11N NAD 83
Longitude:	122-10-56.37W
Heights:	951 feet site elevation (SE) 77 feet above ground level (AGL) 1028 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

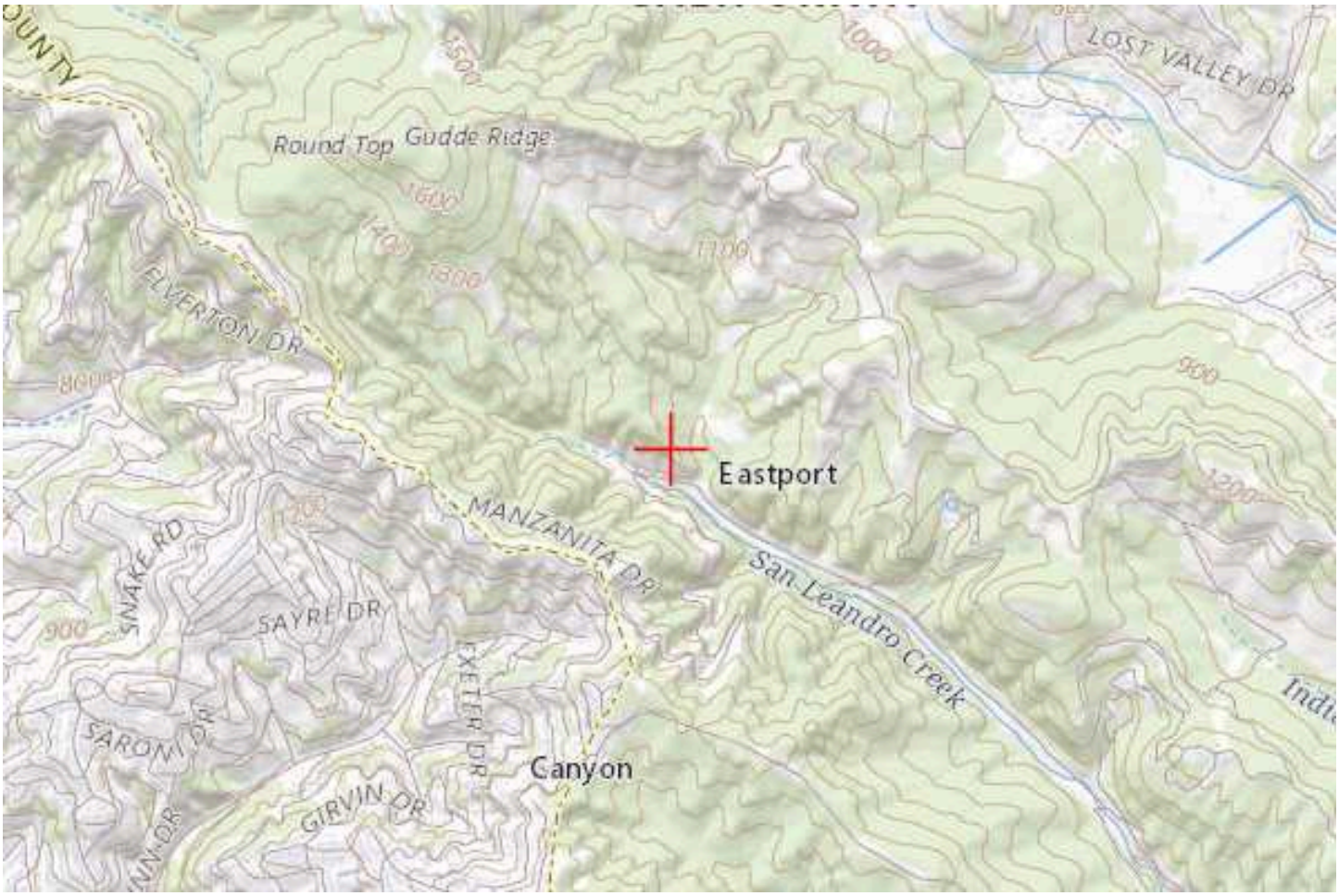
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

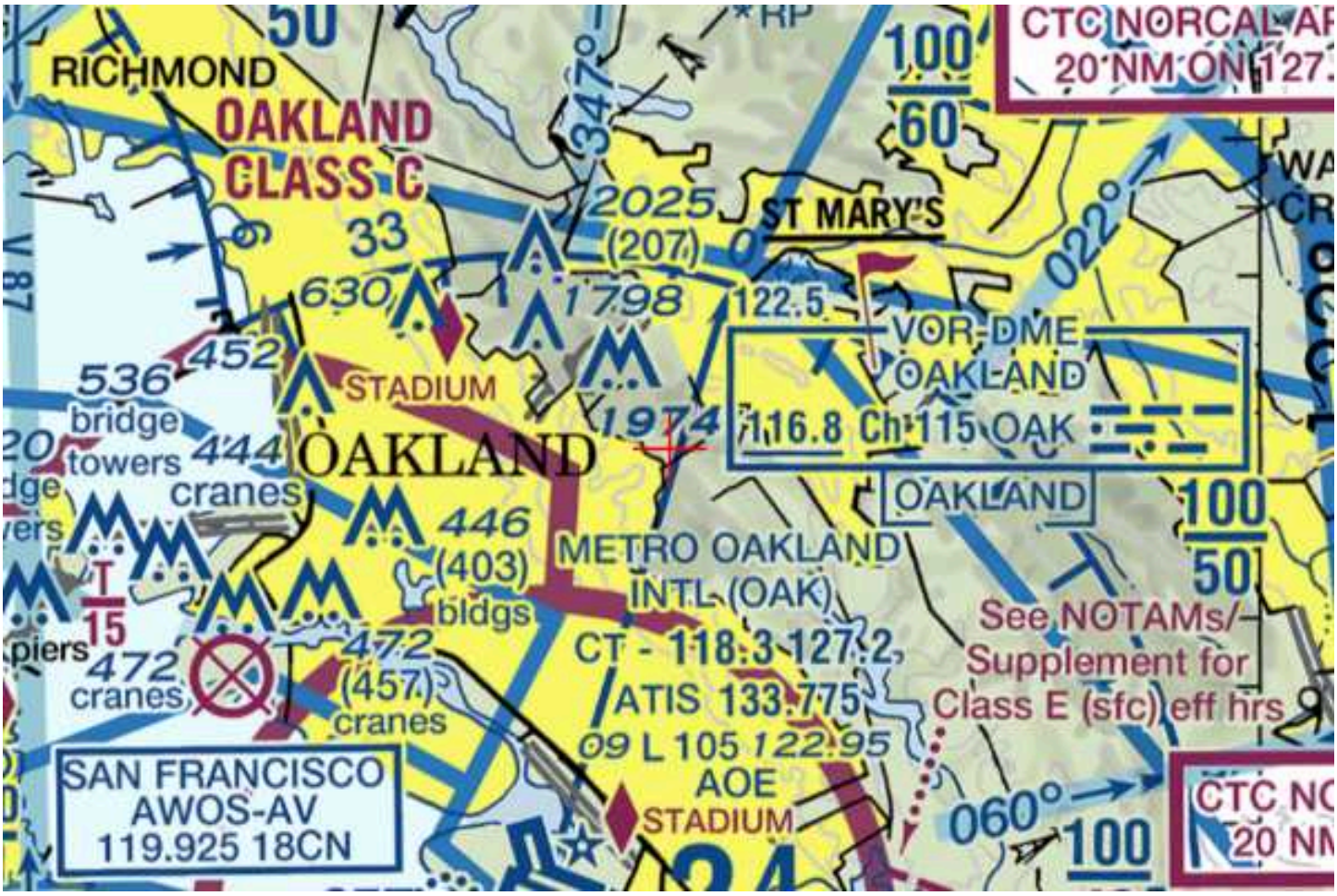
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1043-OE.

Signature Control No: 610465079-618509141 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1043-OE

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See NOTAMs/
Supplement for
Class E (sfc) eff hrs
060°
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CTC NORCAL AP
20 NM ON 127.

Mail Processing Center
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Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1595-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Begin 1/8
Location:	Canyon, CA
Latitude:	37-50-35.45N NAD 83
Longitude:	122-10-42.87W
Heights:	1086 feet site elevation (SE) 86 feet above ground level (AGL) 1172 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

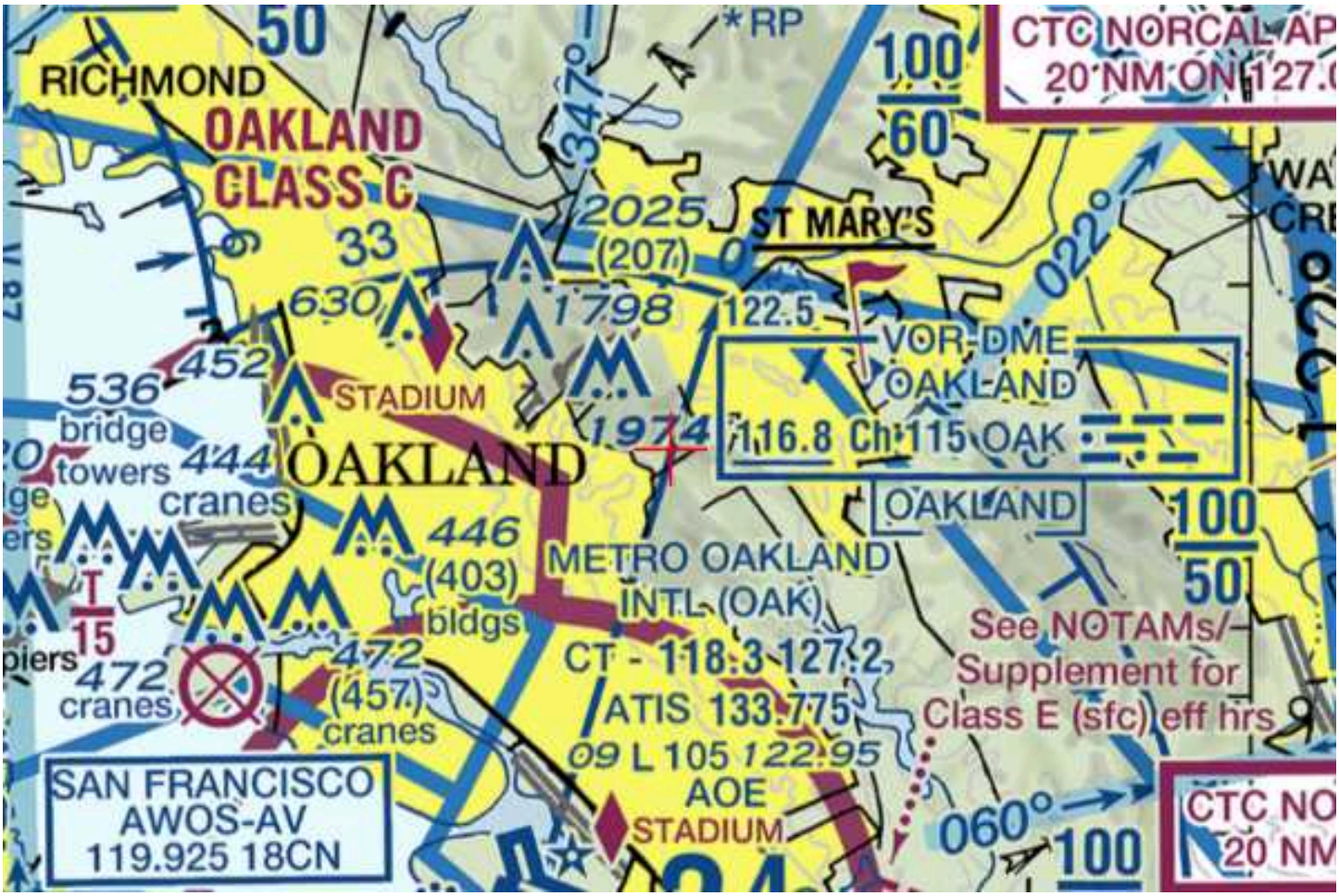
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1595-OE.

Signature Control No: 611452882-618508781 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1595-OE

Sectional Map for ASN 2024-AWP-1595-OE



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Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1596-OE

Issued Date: 04/09/2024

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Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Highest 1/8-1/9
Location:	Canyon, CA
Latitude:	37-50-30.16N NAD 83
Longitude:	122-10-52.16W
Heights:	791 feet site elevation (SE) 255 feet above ground level (AGL) 1046 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

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This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

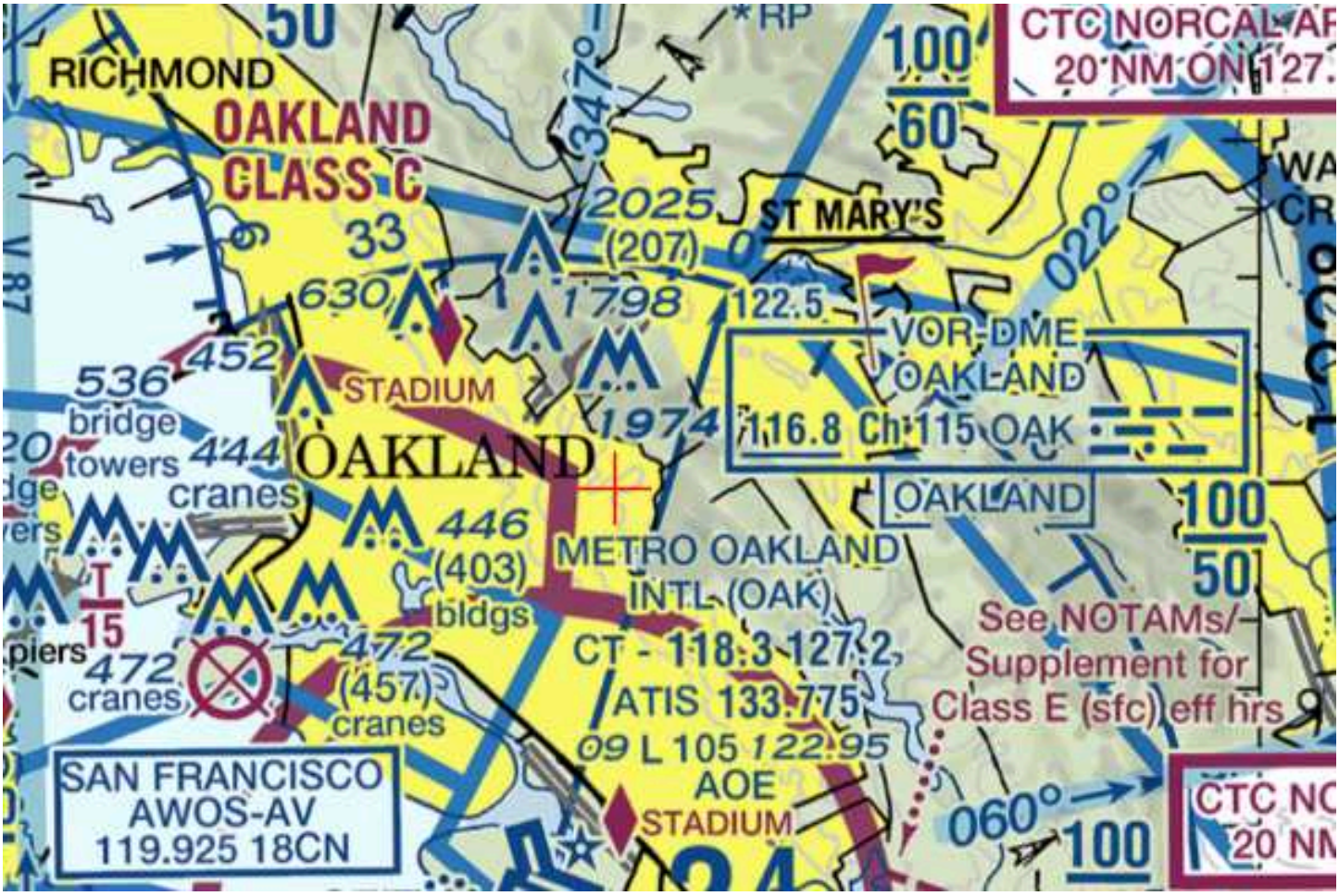
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1596-OE.

Signature Control No: 611452883-618506329 (DNE)
William Wills
Specialist

Attachment(s)
Additional Information
Map(s)

Marking and lighting was considered but deemed unnecessary due to the surrounding rising terrain. To the northeast the terrain rises to 1084 feet MSL, to the northwest it rises to 982 feet MSL, to the southwest it rises to 1028 feet MSL, and to the southeast it rises up 934 feet MSL. The structures will be located in a valley at 791 feet MSL and 789 feet MSL. Therefore, with respect to the terrain marking or lighting this structure would serve no useful purpose.

TOPO Map for ASN 2024-AWP-1596-OE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Aeronautical Study No.
2024-AWP-1597-OE

Issued Date: 04/09/2024

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**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Highest 1/9-1/10
Location:	Canyon, CA
Latitude:	37-50-24.85N NAD 83
Longitude:	122-11-01.49W
Heights:	787 feet site elevation (SE) 313 feet above ground level (AGL) 1100 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

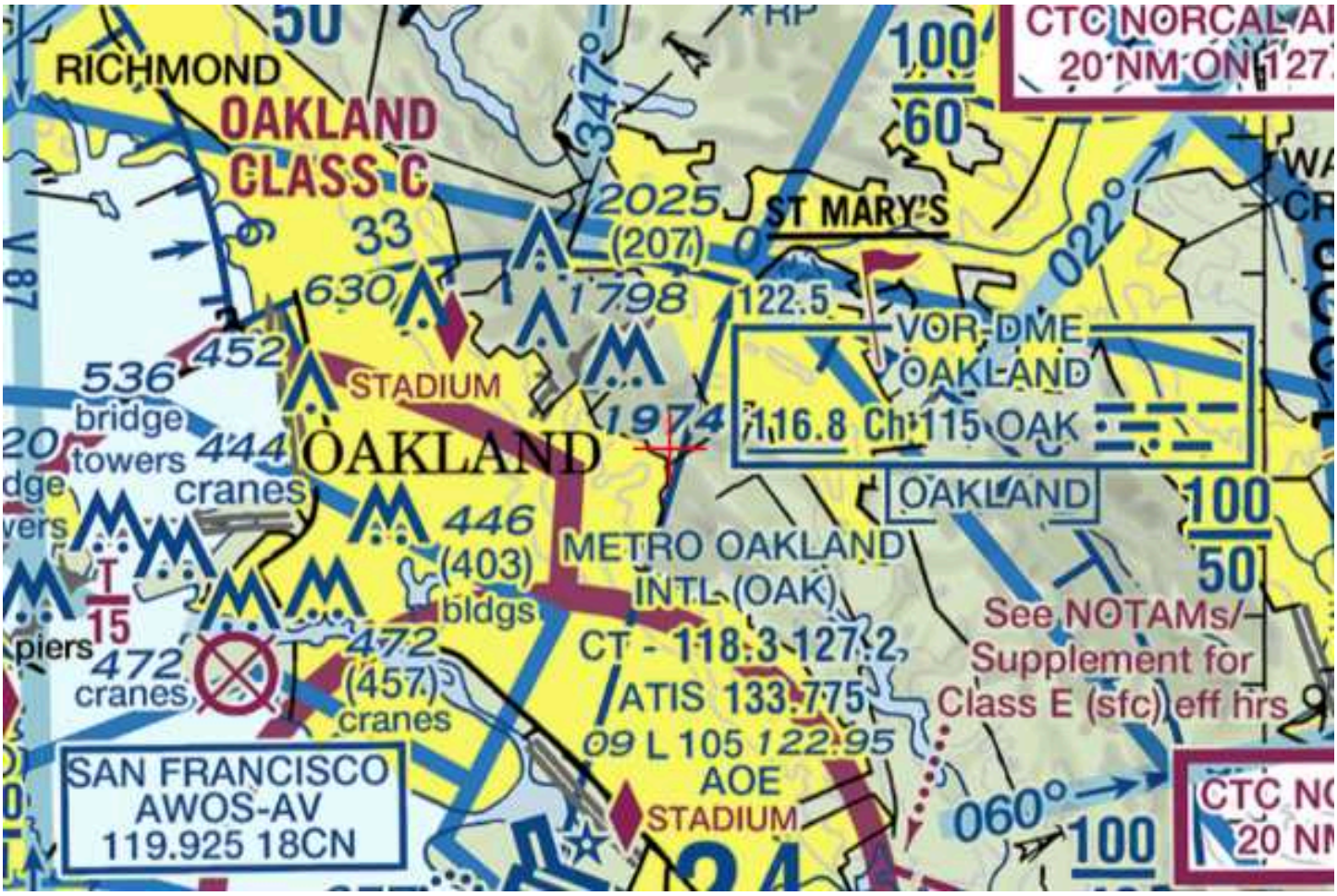
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1597-OE.

Signature Control No: 611452884-618504954 (DNE)
William Wills
Specialist

Attachment(s)
Additional Information
Map(s)

Marking and lighting was considered but deemed unnecessary due to the surrounding rising terrain. To the northeast the terrain rises to 1016 feet MSL, to the northwest it rises to 1210 feet MSL, to the southwest it rises to 1119 feet MSL, and to the southeast it rises up 945 feet MSL. The structures will be located in a valley at 785 feet MSL and 787 feet MSL. Therefore, with respect to the terrain marking or lighting this structure would serve no useful purpose.

TOPO Map for ASN 2024-AWP-1597-OE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Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1598-OE

Issued Date: 04/09/2024

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**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-End 1/10
Location:	Canyon, CA
Latitude:	37-50-17.46N NAD 83
Longitude:	122-11-14.50W
Heights:	1346 feet site elevation (SE) 136 feet above ground level (AGL) 1482 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

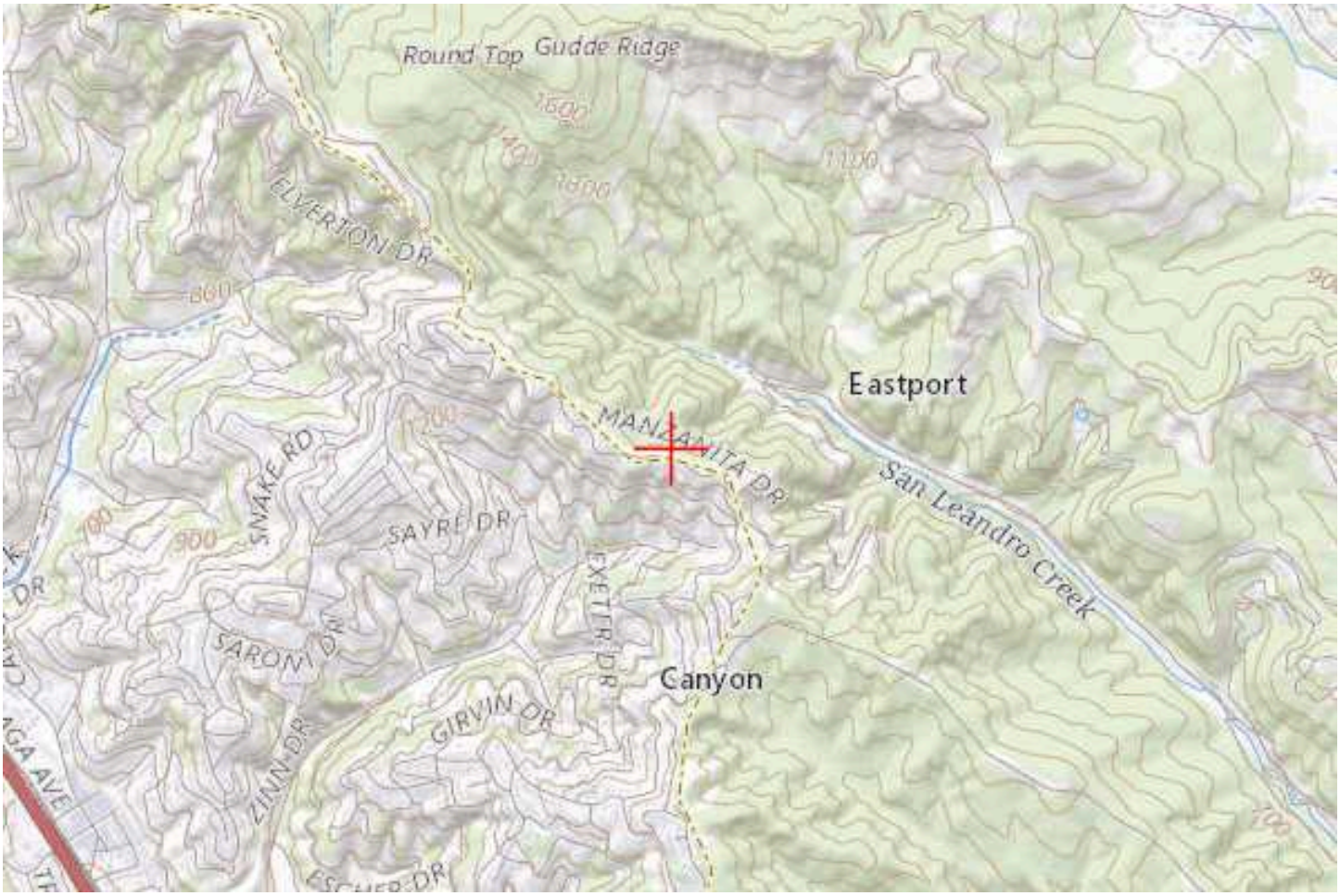
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1598-OE.

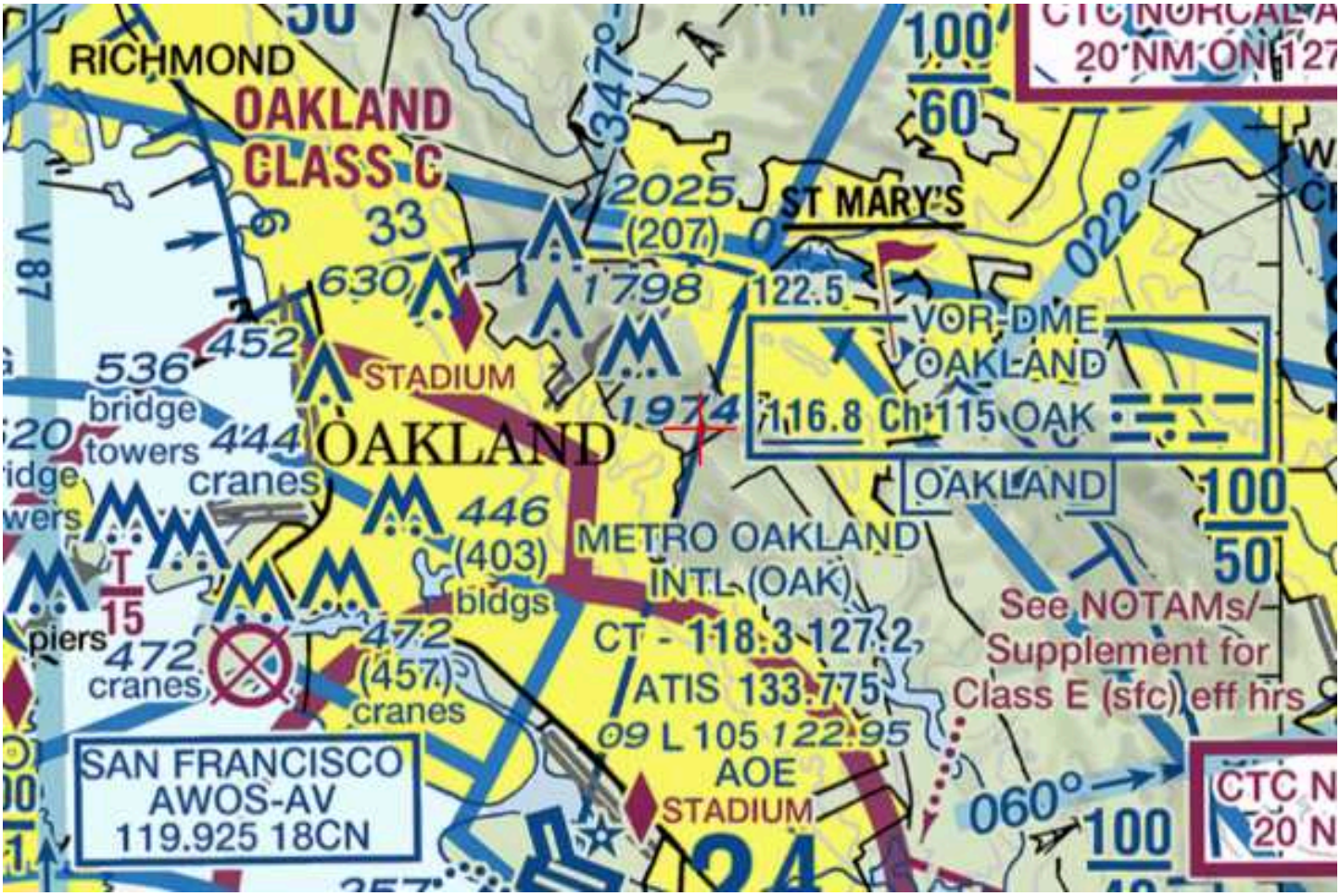
Signature Control No: 611452885-618508776 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1598-OE



Sectional Map for ASN 2024-AWP-1598-OE



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Southwest Regional Office
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10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1599-OE

Issued Date: 04/09/2024

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**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Begin 1/12
Location:	Canyon, CA
Latitude:	37-50-08.55N NAD 83
Longitude:	122-11-29.98W
Heights:	1051 feet site elevation (SE) 81 feet above ground level (AGL) 1132 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
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NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

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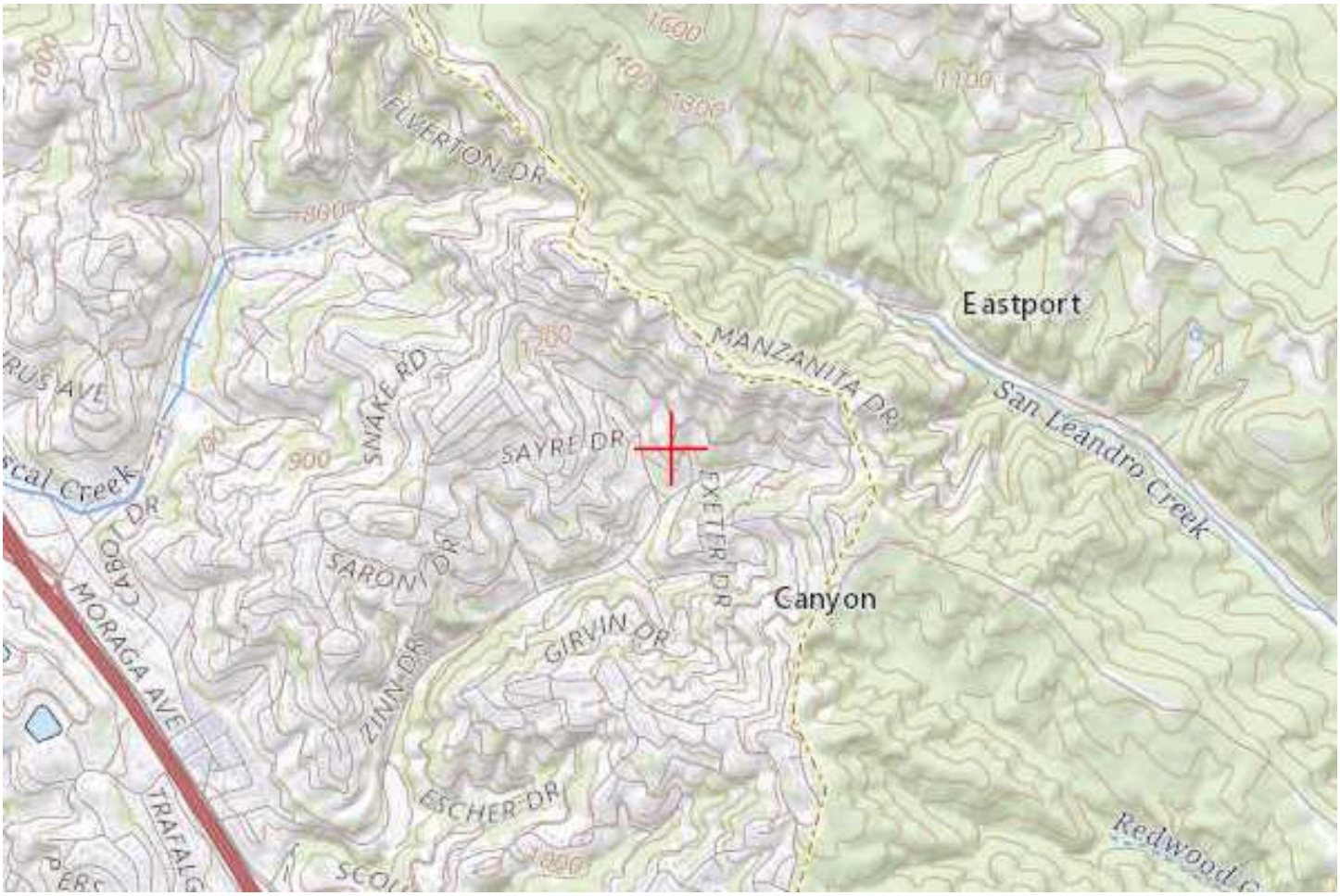
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1599-OE.

Signature Control No: 611452886-618508779 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1599-OE



RICHMOND
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CLASS C
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INTL (OAK)
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AOE
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Aeronautical Study No.
2024-AWP-1600-OE

Issued Date: 04/09/2024

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**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Highest 1/12-2/13
Location:	Canyon, CA
Latitude:	37-50-06.56N NAD 83
Longitude:	122-11-33.47W
Heights:	911 feet site elevation (SE)
	205 feet above ground level (AGL)
	0 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

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__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

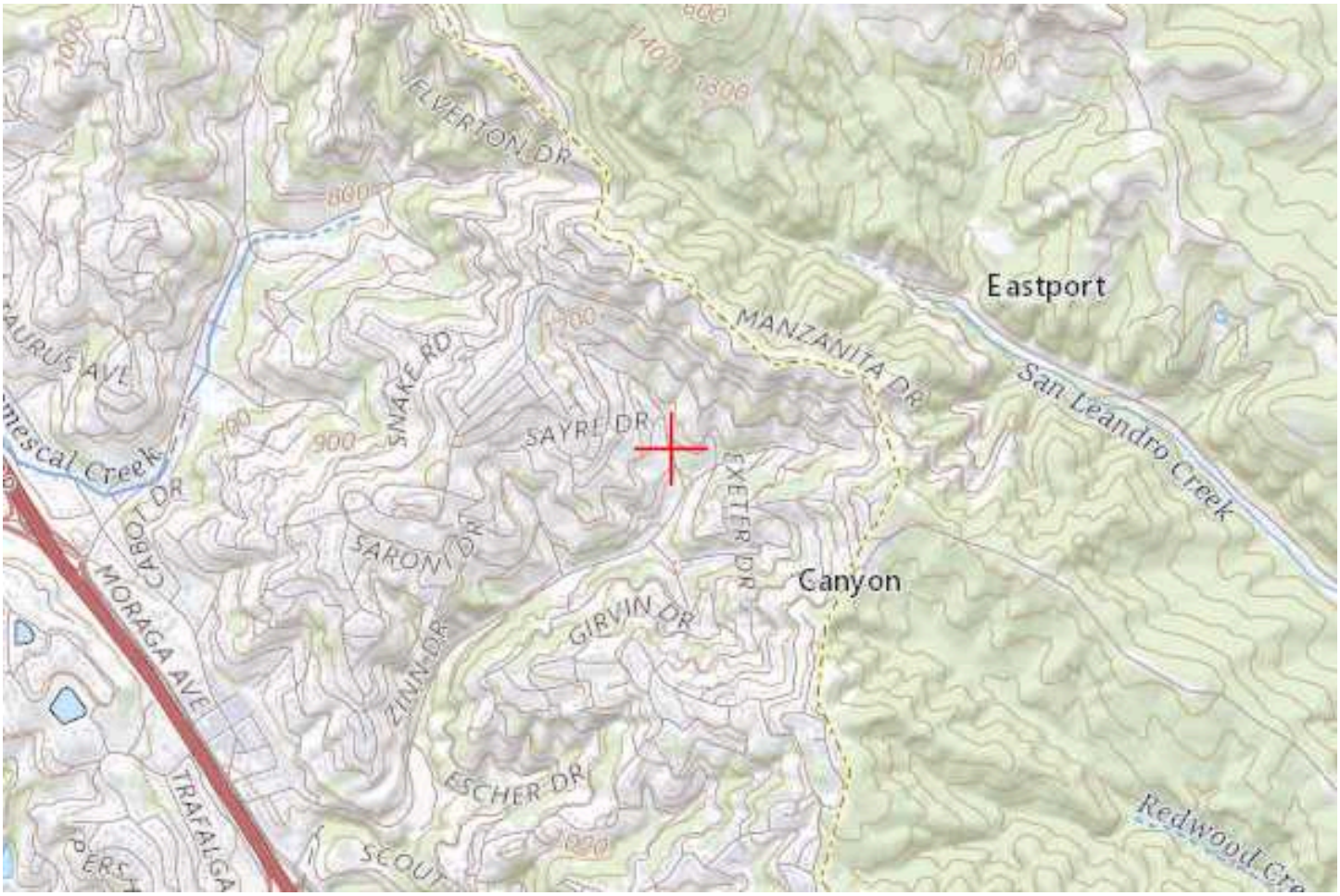
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1600-OE.

Signature Control No: 611452887-618507879 (DNE)
William Wills
Specialist

Attachment(s)
Additional Information
Map(s)

Marking and lighting was considered but deemed unnecessary due to the surrounding rising terrain. To the northeast the terrain rises to 1168 feet MSL, to the northwest it rises to 1074 feet MSL, to the southwest it rises to 1046 feet MSL, and to the southeast it rises to 1090 feet MSL. The structure will be located in a valley at 911 feet MSL. Therefore, with respect to the terrain marking or lighting this structure would serve no useful purpose.

TOPO Map for ASN 2024-AWP-1600-OE



Sectional Map for ASN 2024-AWP-1600-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1601-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-End 2/13
Location:	Canyon, CA
Latitude:	37-50-03.02N NAD 83
Longitude:	122-11-39.68W
Heights:	1059 feet site elevation (SE) 86 feet above ground level (AGL) 1145 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

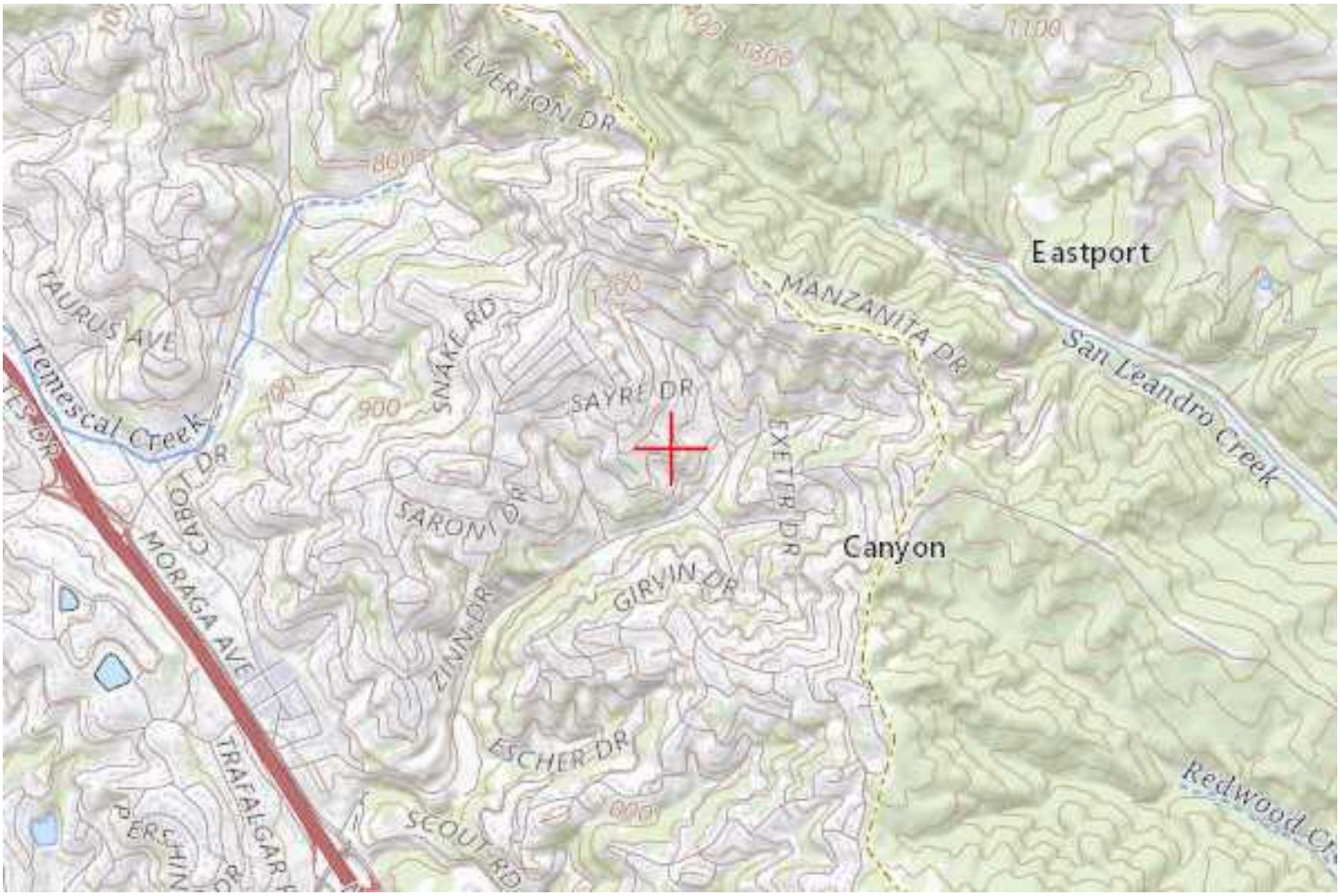
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1601-OE.

Signature Control No: 611452888-618508782 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1601-OE



Sectional Map for ASN 2024-AWP-1601-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1602-OE

Issued Date: 04/09/2024

Andrew Davies
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220 Newport Center Dr.
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Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Begin 2/14
Location:	Canyon, CA
Latitude:	37-50-00.09N NAD 83
Longitude:	122-11-45.01W
Heights:	1039 feet site elevation (SE) 86 feet above ground level (AGL) 1125 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

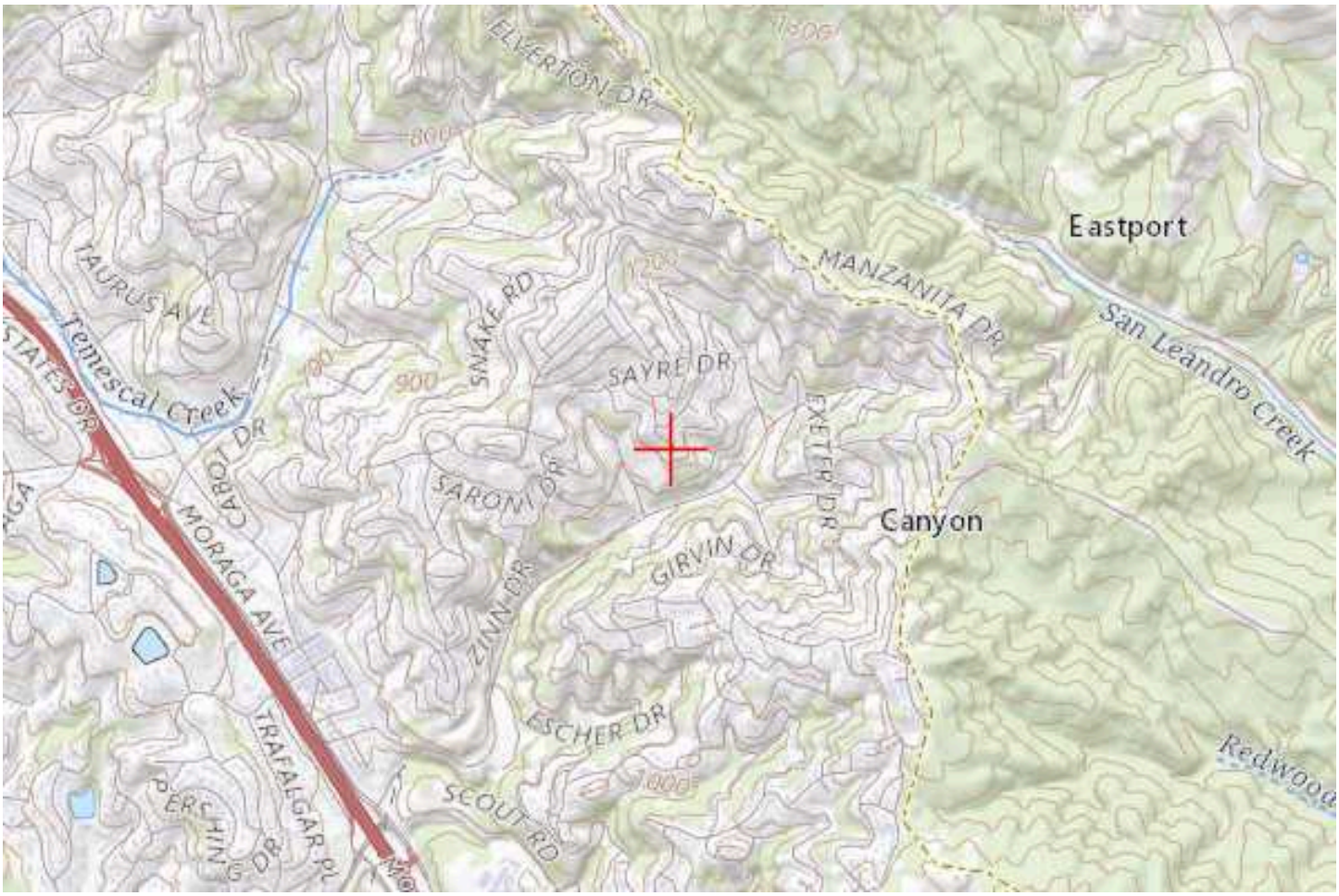
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1602-OE.

Signature Control No: 611452889-618508784 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1602-OE



Sectional Map for ASN 2024-AWP-1602-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1603-OE

Issued Date: 04/09/2024

Andrew Davies
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Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Highest 2/14-2/15
Location:	Canyon, CA
Latitude:	37-49-56.65N NAD 83
Longitude:	122-11-51.11W
Heights:	864 feet site elevation (SE) 225 feet above ground level (AGL) 1089 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

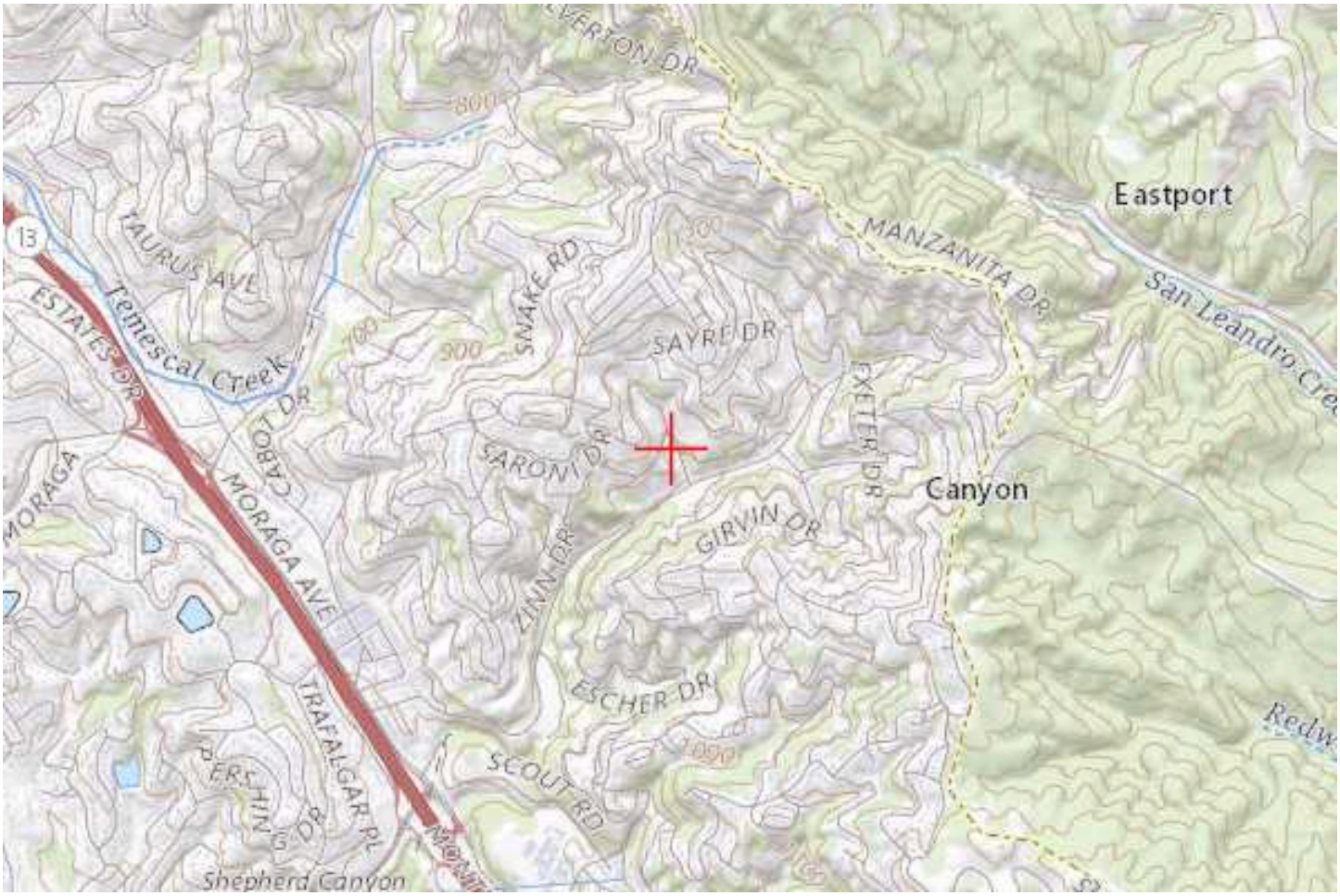
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1603-OE.

Signature Control No: 611452890-618508148 (DNE)
William Wills
Specialist

Attachment(s)
Additional Information
Map(s)

Marking and lighting was considered but deemed unnecessary due to the surrounding rising terrain. To the northeast the terrain rises to 1054 feet MSL, to the northwest it rises to 1023 feet MSL, to the southwest it rises to 1099 feet MSL, and to the southeast it rises to 1052 feet MSL. The structure will be located in a valley at 864 feet MSL. Therefore, with respect to the terrain marking or lighting this structure would serve no useful purpose.

TOPO Map for ASN 2024-AWP-1603-OE



Sectional Map for ASN 2024-AWP-1603-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1604-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-End 2/15
Location:	Canyon, CA
Latitude:	37-49-55.34N NAD 83
Longitude:	122-11-53.42W
Heights:	961 feet site elevation (SE) 133 feet above ground level (AGL) 1094 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

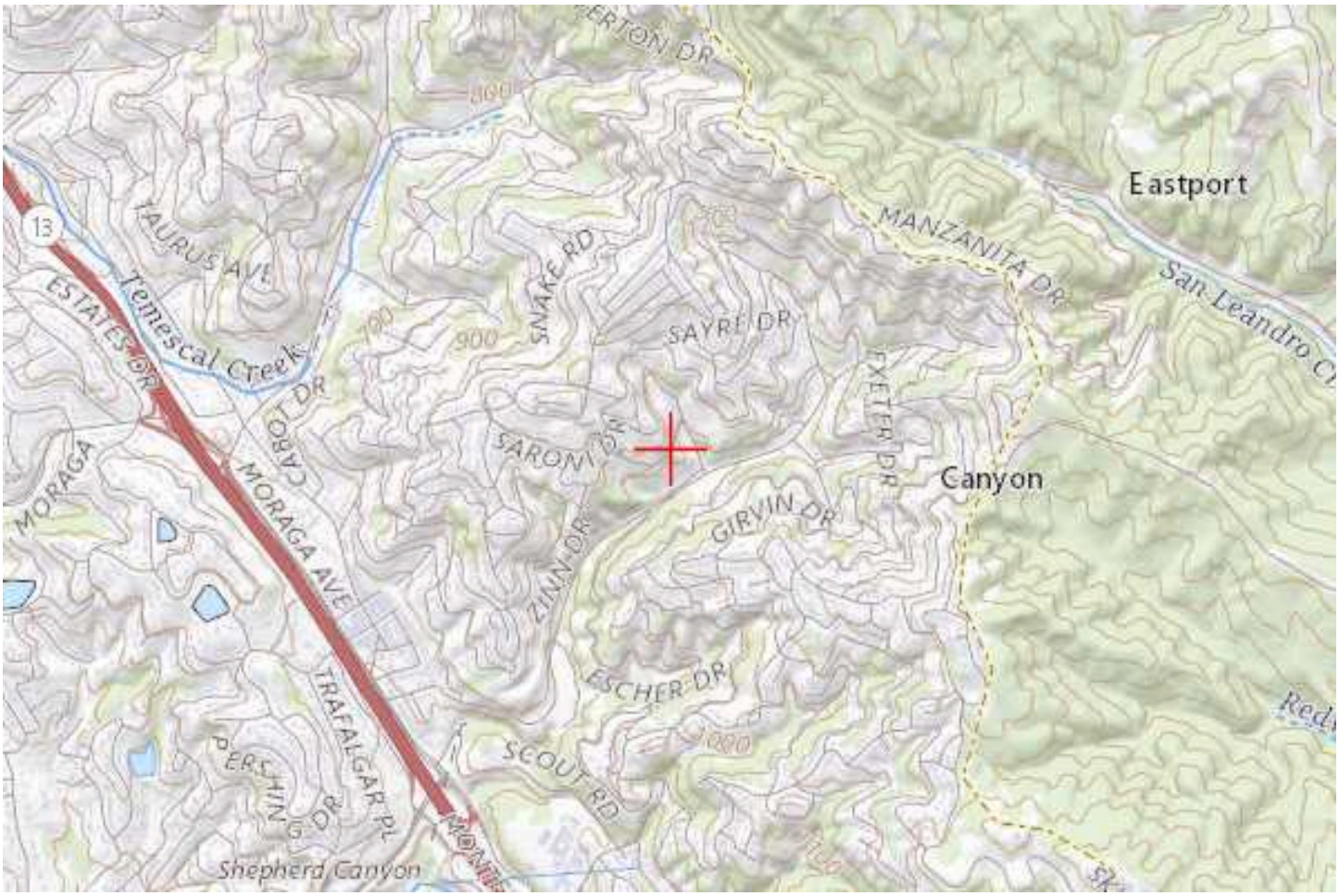
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1604-OE.

Signature Control No: 611452891-618508789 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1604-OE



Sectional Map for ASN 2024-AWP-1604-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1605-OE

Issued Date: 04/09/2024

Andrew Davies
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220 Newport Center Dr.
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Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Begin 2/17
Location:	Canyon, CA
Latitude:	37-49-46.83N NAD 83
Longitude:	122-12-07.93W
Heights:	946 feet site elevation (SE) 112 feet above ground level (AGL) 1058 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

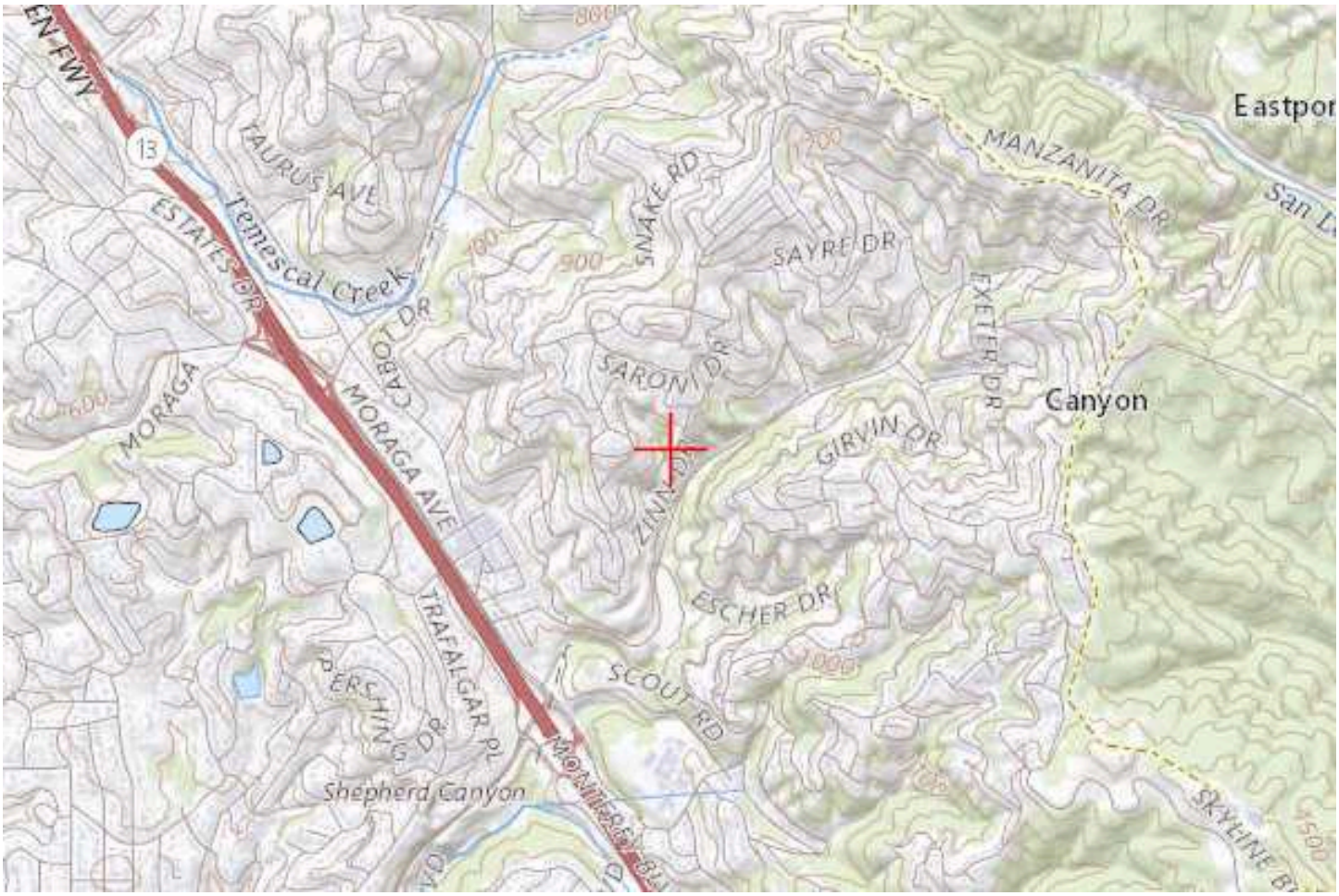
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1605-OE.

Signature Control No: 611452892-618508777 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1605-OE



Sectional Map for ASN 2024-AWP-1605-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1606-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Highest 2/17-2/18
Location:	Canyon, CA
Latitude:	37-49-41.94N NAD 83
Longitude:	122-12-09.84W
Heights:	751 feet site elevation (SE) 214 feet above ground level (AGL) 965 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

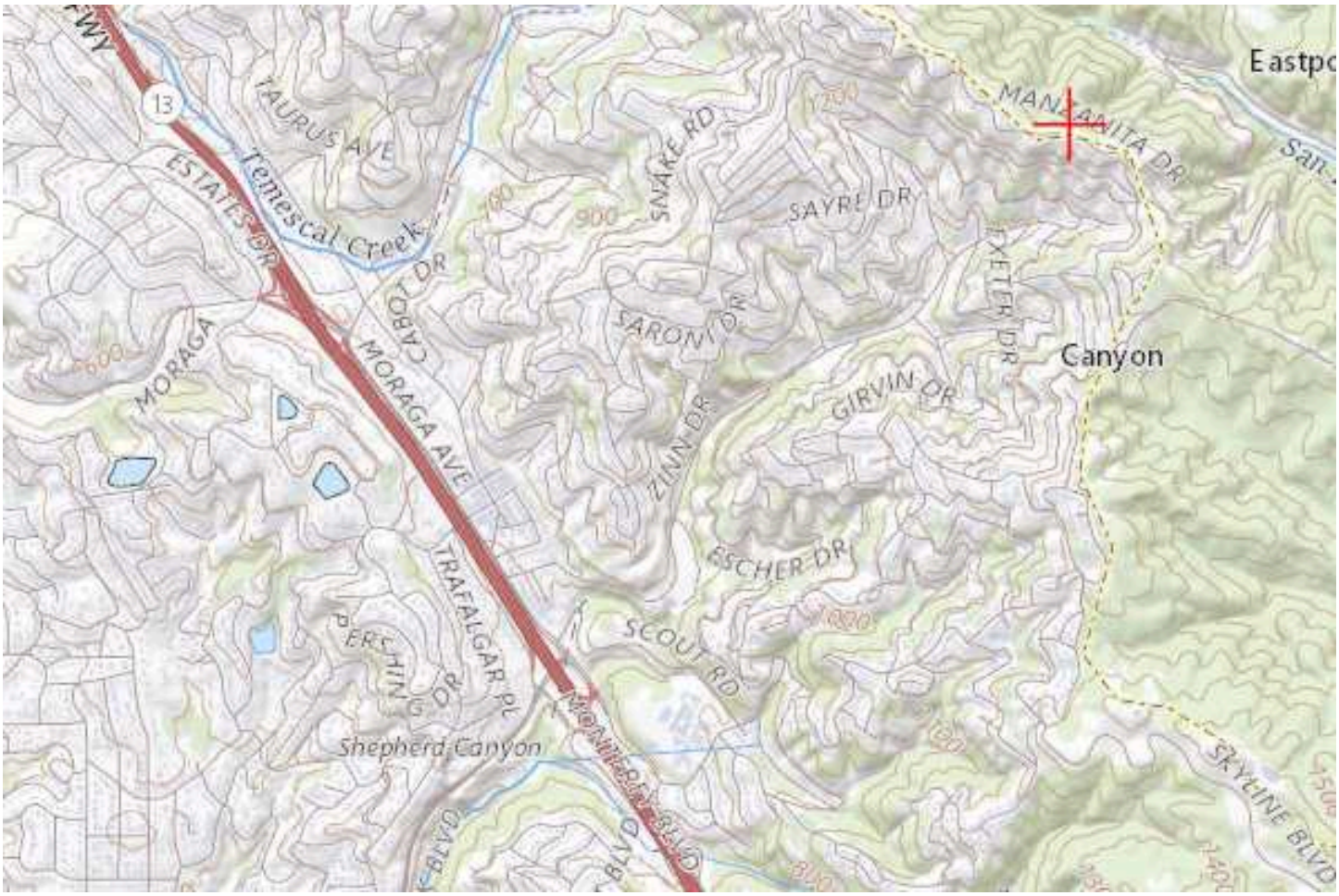
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1606-OE.

Signature Control No: 611452893-618508219 (DNE)
William Wills
Specialist

Attachment(s)
Additional Information
Map(s)

Marking and lighting was considered but deemed unnecessary due to the surrounding rising terrain. To the northeast the terrain rises to 1008 feet MSL, to the northwest it rises to 917 feet MSL, to the southwest it rises to 955 feet MSL, and to the southeast it rises to 1095 feet MSL. The structure will be located in a valley at 751 feet MSL. Therefore, with respect to the terrain marking or lighting this structure would serve no useful purpose.

TOPO Map for ASN 2024-AWP-1606-OE



Sectional Map for ASN 2024-AWP-1606-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1607-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-End 2/18
Location:	Canyon, CA
Latitude:	37-49-37.72N NAD 83
Longitude:	122-12-11.50W
Heights:	760 feet site elevation (SE) 168 feet above ground level (AGL) 928 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

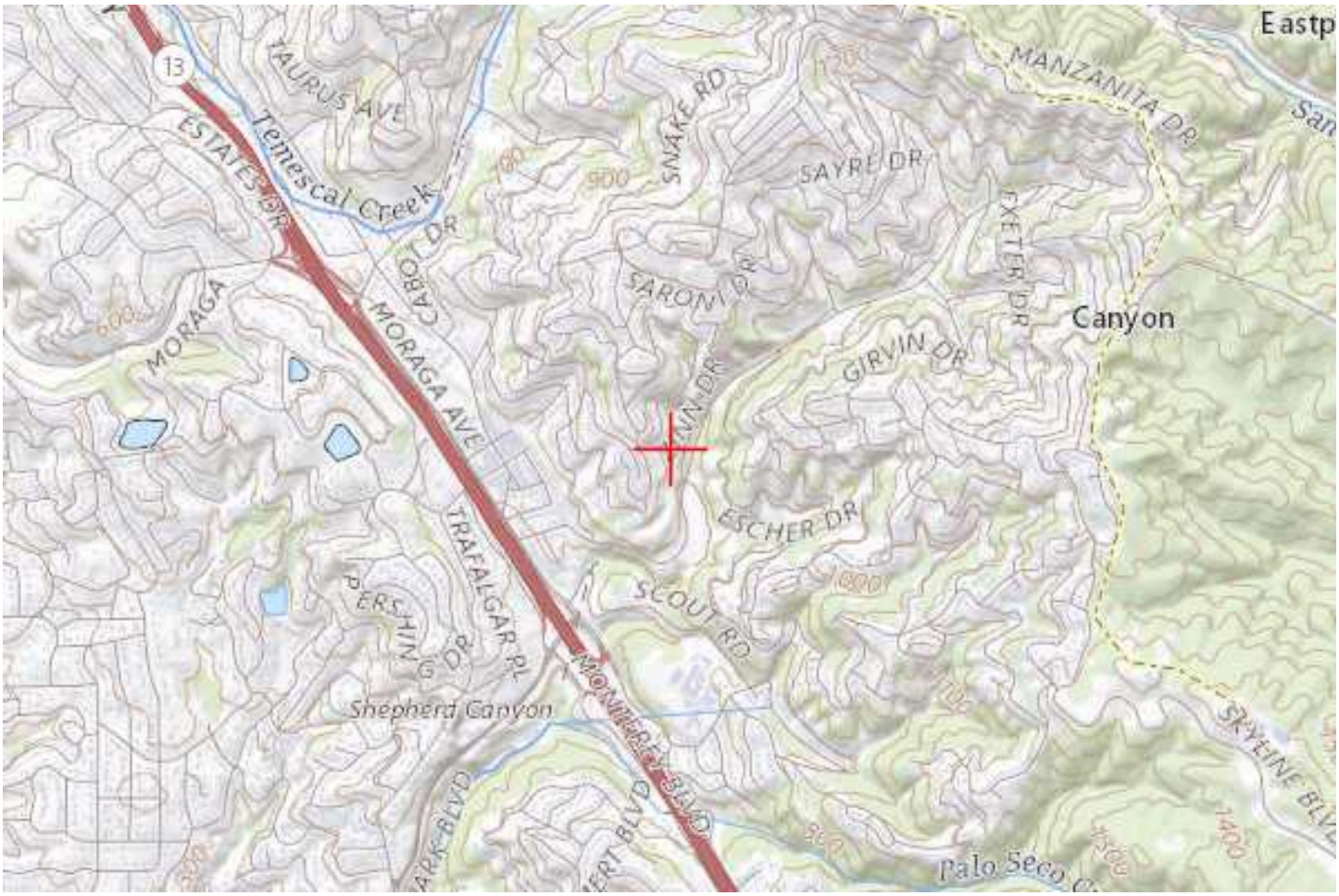
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1607-OE.

Signature Control No: 611452894-618508778 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1607-OE



Sectional Map for ASN 2024-AWP-1607-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1608-OE

Issued Date: 04/09/2024

Andrew Davies
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Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Begin 2/19
Location:	Canyon, CA
Latitude:	37-49-28.38N NAD 83
Longitude:	122-12-14.54W
Heights:	776 feet site elevation (SE) 133 feet above ground level (AGL) 909 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

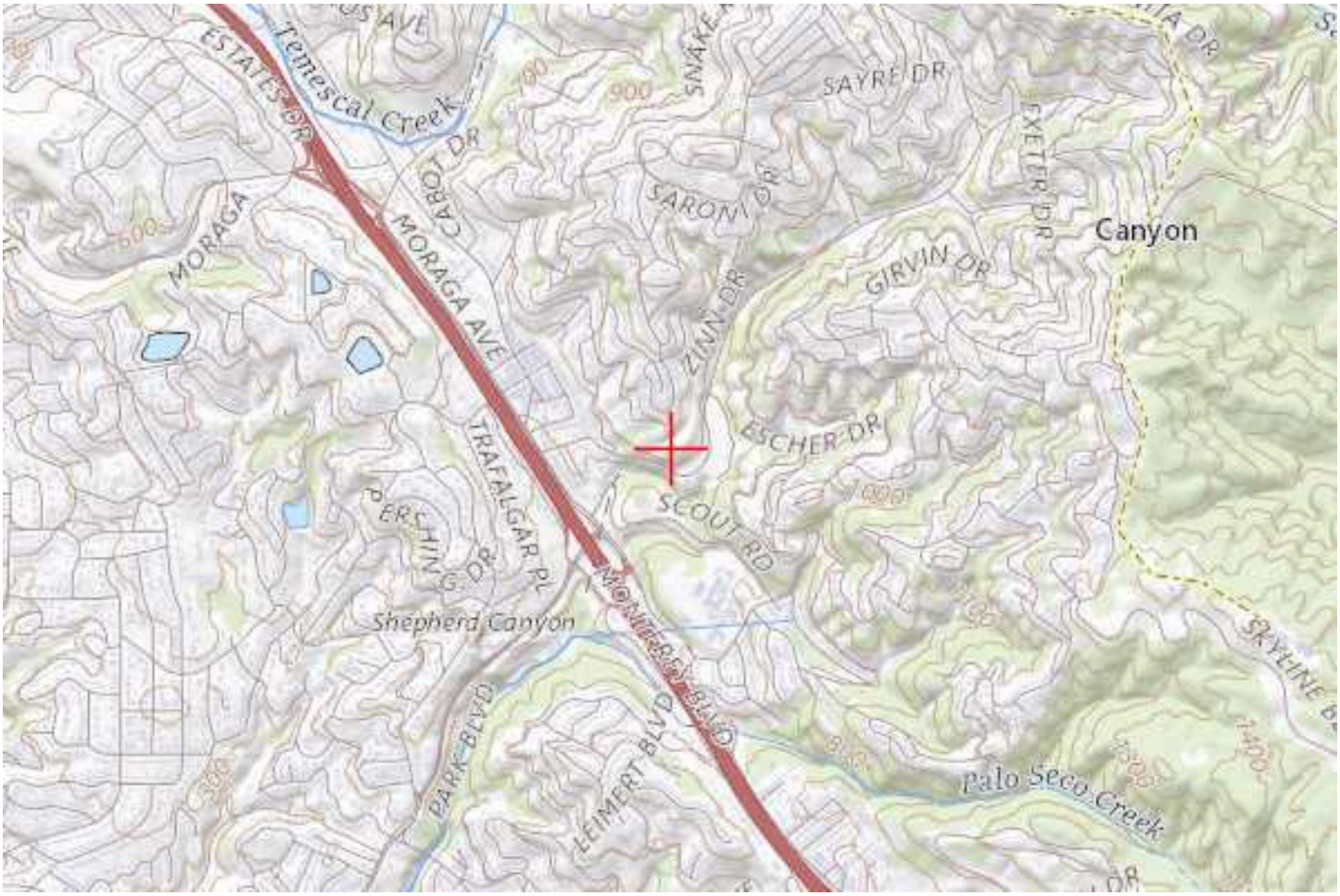
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1608-OE.

Signature Control No: 611452895-618508780 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1608-OE



Sectional Map for ASN 2024-AWP-1608-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1609-OE

Issued Date: 04/09/2024

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Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Highest 2/19-2/20
Location:	Canyon, CA
Latitude:	37-49-24.92N NAD 83
Longitude:	122-12-16.00W
Heights:	557 feet site elevation (SE) 237 feet above ground level (AGL) 794 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

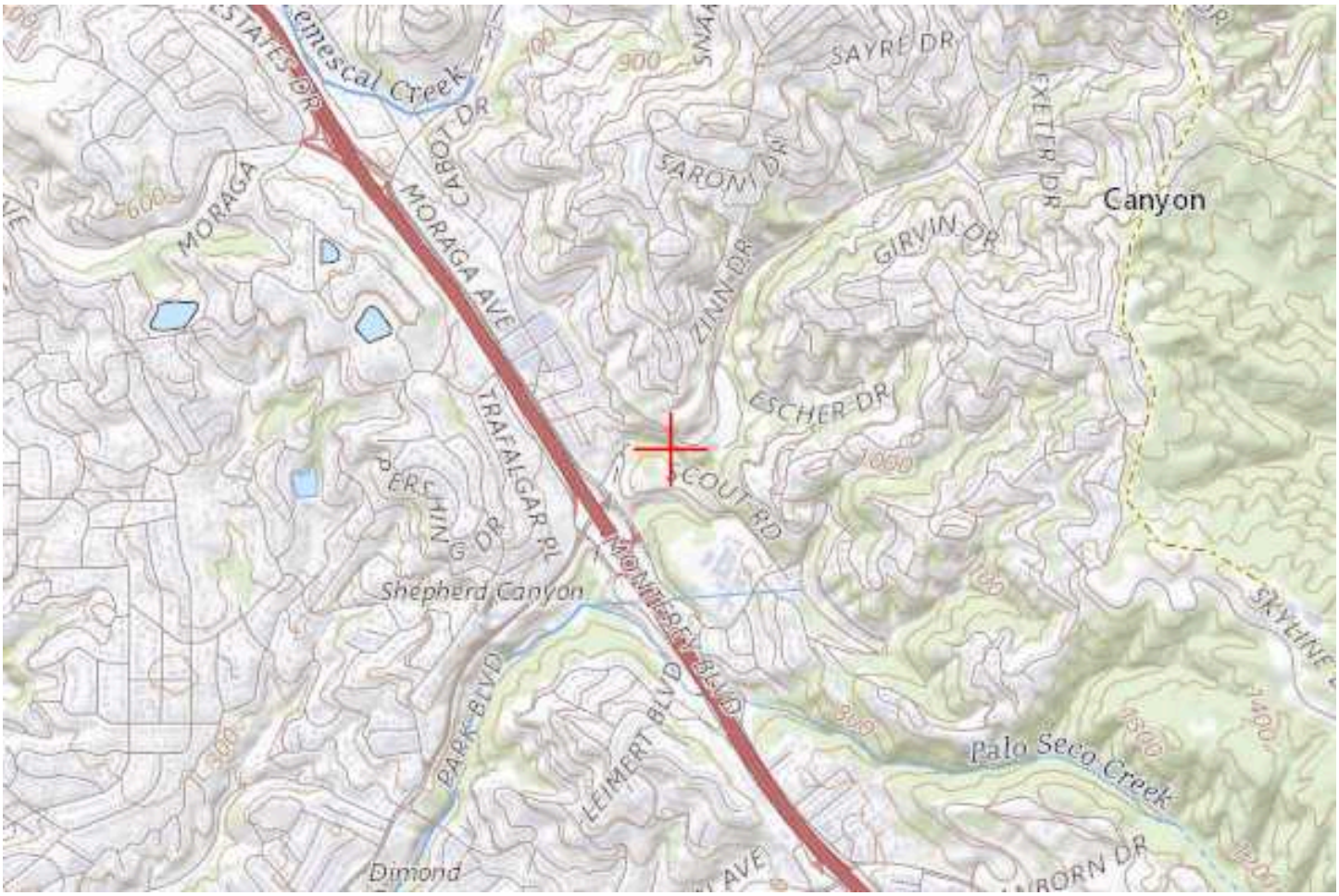
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1609-OE.

Signature Control No: 611452896-618508479 (DNE)
William Wills
Specialist

Attachment(s)
Additional Information
Map(s)

Marking and lighting was considered but deemed unnecessary due to the surrounding rising terrain. To the northeast the terrain rises to 814 feet MSL, to the west it rises to 645 feet MSL, to the southwest it rises to 685 feet MSL, and to the southeast it rises to 1010 feet MSL. The structures will be located in a valley at 557 feet MSL and 558 feet MSL. Therefore, with respect to the terrain marking or lighting this structure would serve no useful purpose.

TOPO Map for ASN 2024-AWP-1609-OE



Sectional Map for ASN 2024-AWP-1609-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1610-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-End 2/20
Location:	Canyon, CA
Latitude:	37-49-21.27N NAD 83
Longitude:	122-12-17.52W
Heights:	628 feet site elevation (SE) 81 feet above ground level (AGL) 709 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

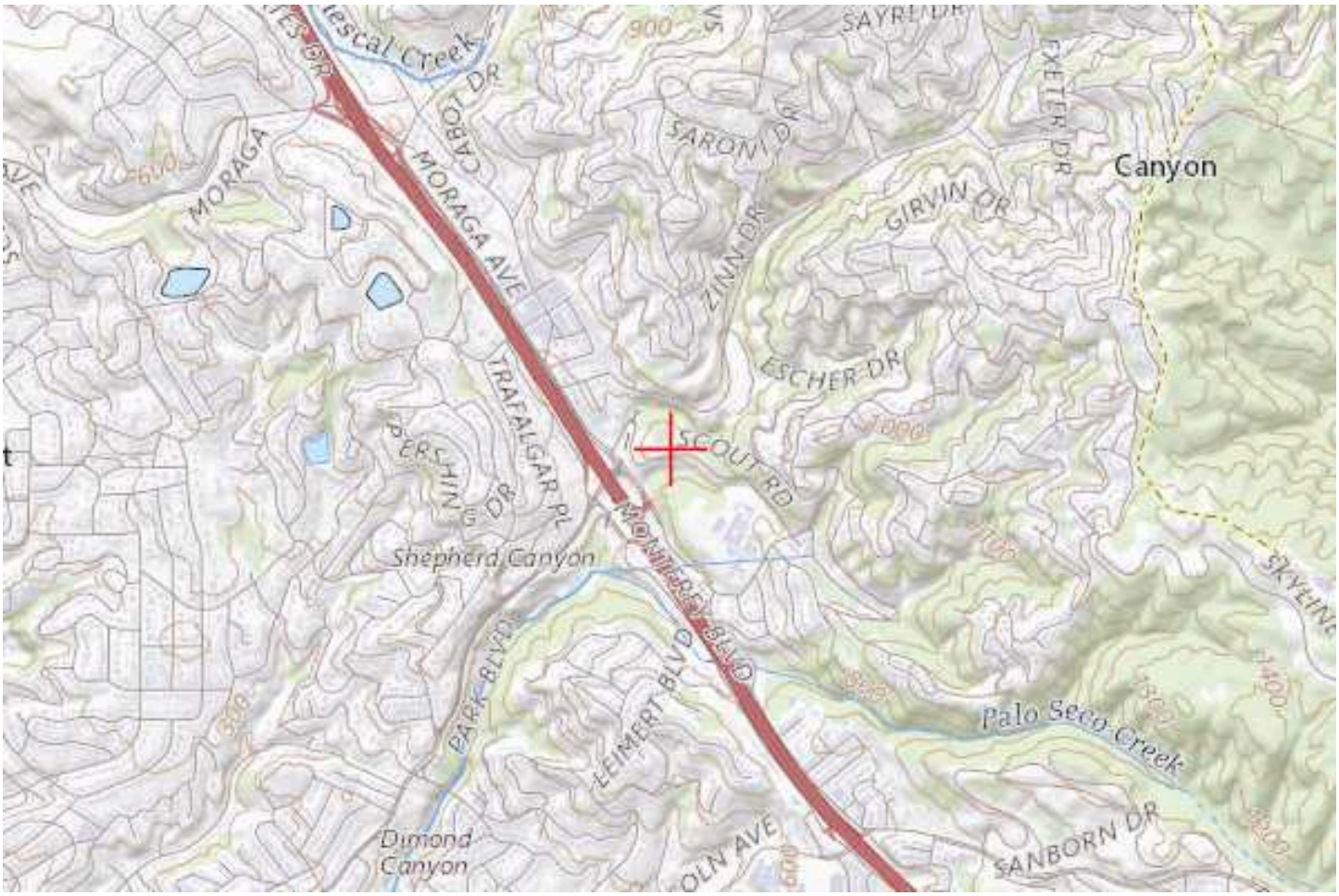
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1610-OE.

Signature Control No: 611452897-618508787 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1610-OE



Sectional Map for ASN 2024-AWP-1610-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1611-OE

Issued Date: 04/09/2024

Andrew Davies
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220 Newport Center Dr.
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Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Begin 3/25
Location:	Canyon, CA
Latitude:	37-48-57.40N NAD 83
Longitude:	122-12-39.12W
Heights:	505 feet site elevation (SE) 83 feet above ground level (AGL) 588 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

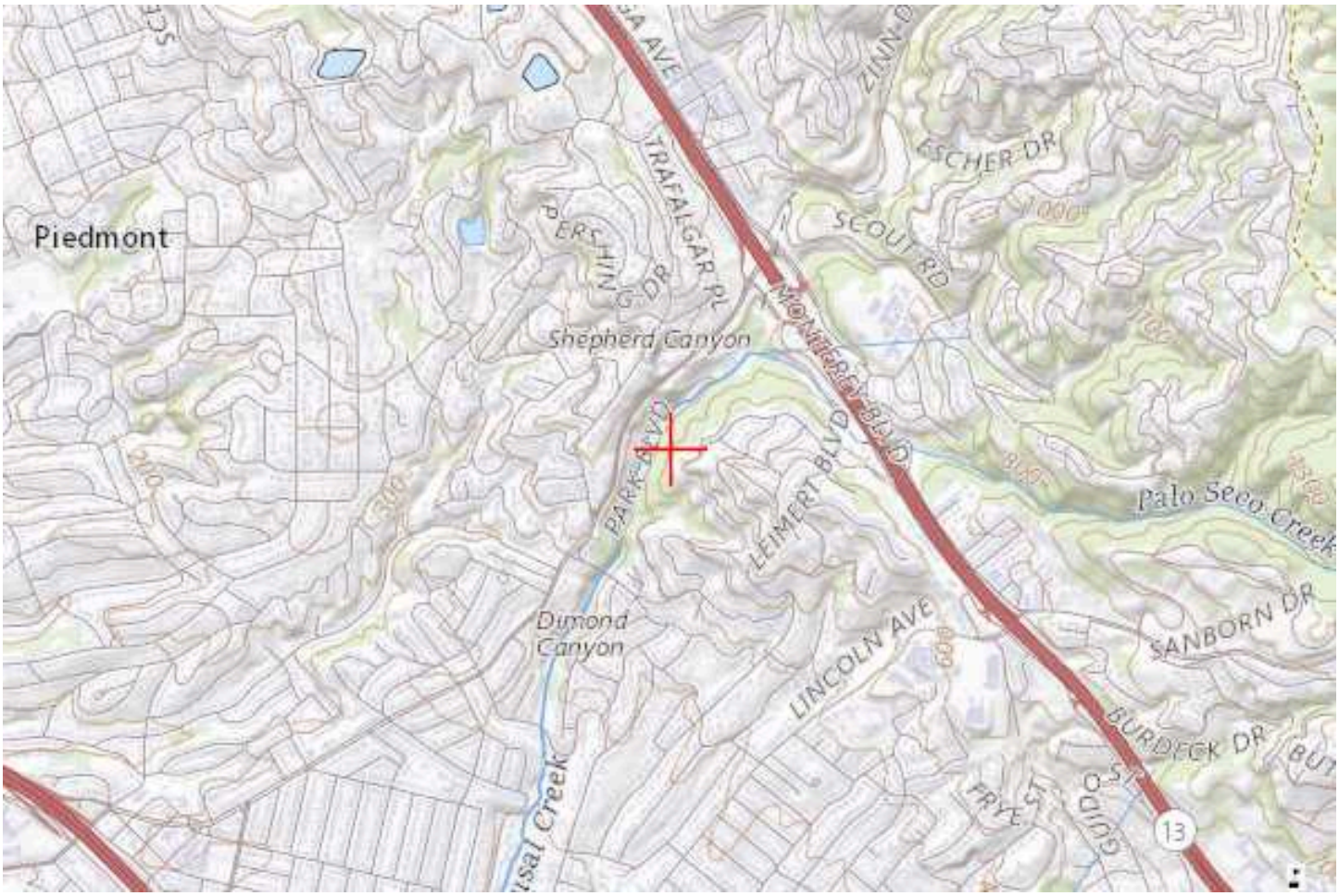
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1611-OE.

Signature Control No: 611452898-618508786 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1611-OE



Sectional Map for ASN 2024-AWP-1611-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1612-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-Highest 3/25-3/26
Location:	Canyon, CA
Latitude:	37-48-53.92N NAD 83
Longitude:	122-12-44.10W
Heights:	297 feet site elevation (SE) 230 feet above ground level (AGL) 527 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

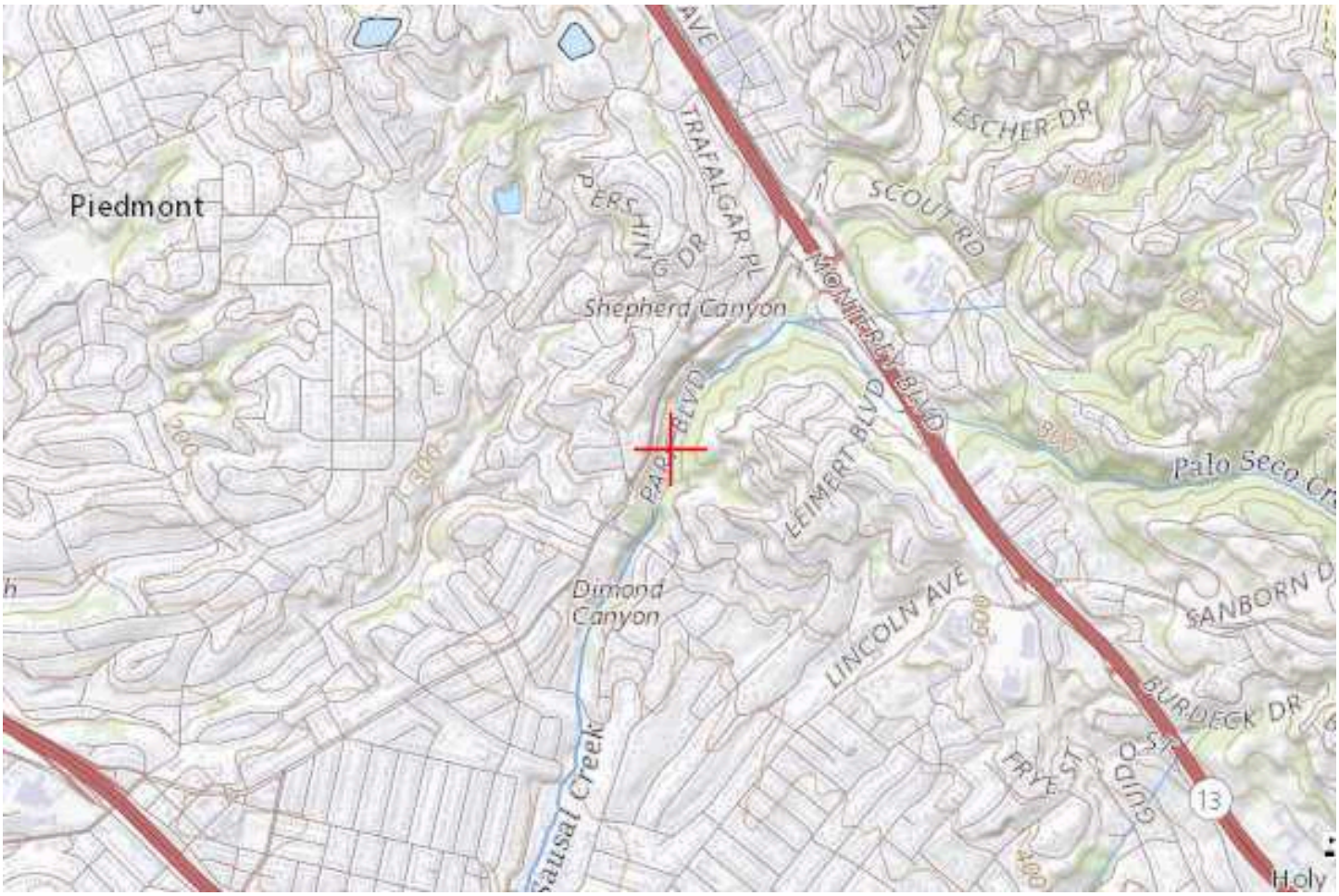
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1612-OE.

Signature Control No: 611452899-618508600 (DNE)
William Wills
Specialist

Attachment(s)
Additional Information
Map(s)

Marking and lighting was considered but deemed unnecessary due to the surrounding rising terrain. To the northeast the terrain rises to 422 feet MSL, to the northwest it rises to 414 feet MSL, to the southwest it rises to 481 feet MSL, and to the southeast it rises to 567 feet MSL. The structures will be located in the Sausal Creek valley at 297 feet MSL and 288 feet MSL. Therefore, with respect to the terrain marking or lighting this structure would serve no useful purpose.

TOPO Map for ASN 2024-AWP-1612-OE



Sectional Map for ASN 2024-AWP-1612-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1613-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036853-MRGA-OKLND #1&2-End 3/26
Location:	Canyon, CA
Latitude:	37-48-51.95N NAD 83
Longitude:	122-12-46.91W
Heights:	396 feet site elevation (SE) 122 feet above ground level (AGL) 518 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

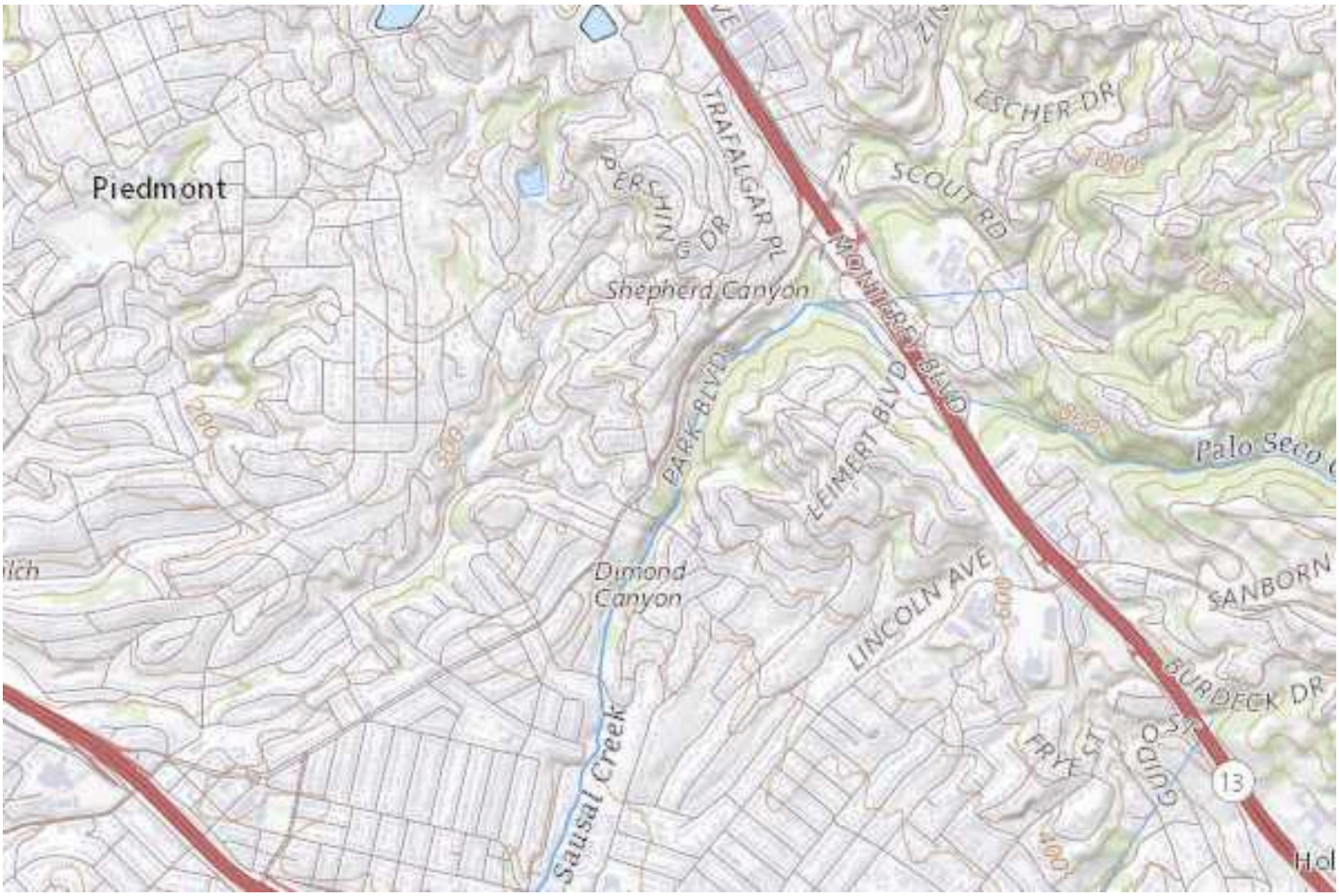
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1613-OE.

Signature Control No: 611452900-618508791 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1613-OE



Sectional Map for ASN 2024-AWP-1613-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1614-OE

Issued Date: 04/09/2024

Andrew Davies
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220 Newport Center Dr.
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Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-Begin 1/8
Location:	Canyon, CA
Latitude:	37-50-35.29N NAD 83
Longitude:	122-10-42.03W
Heights:	1085 feet site elevation (SE) 101 feet above ground level (AGL) 1186 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

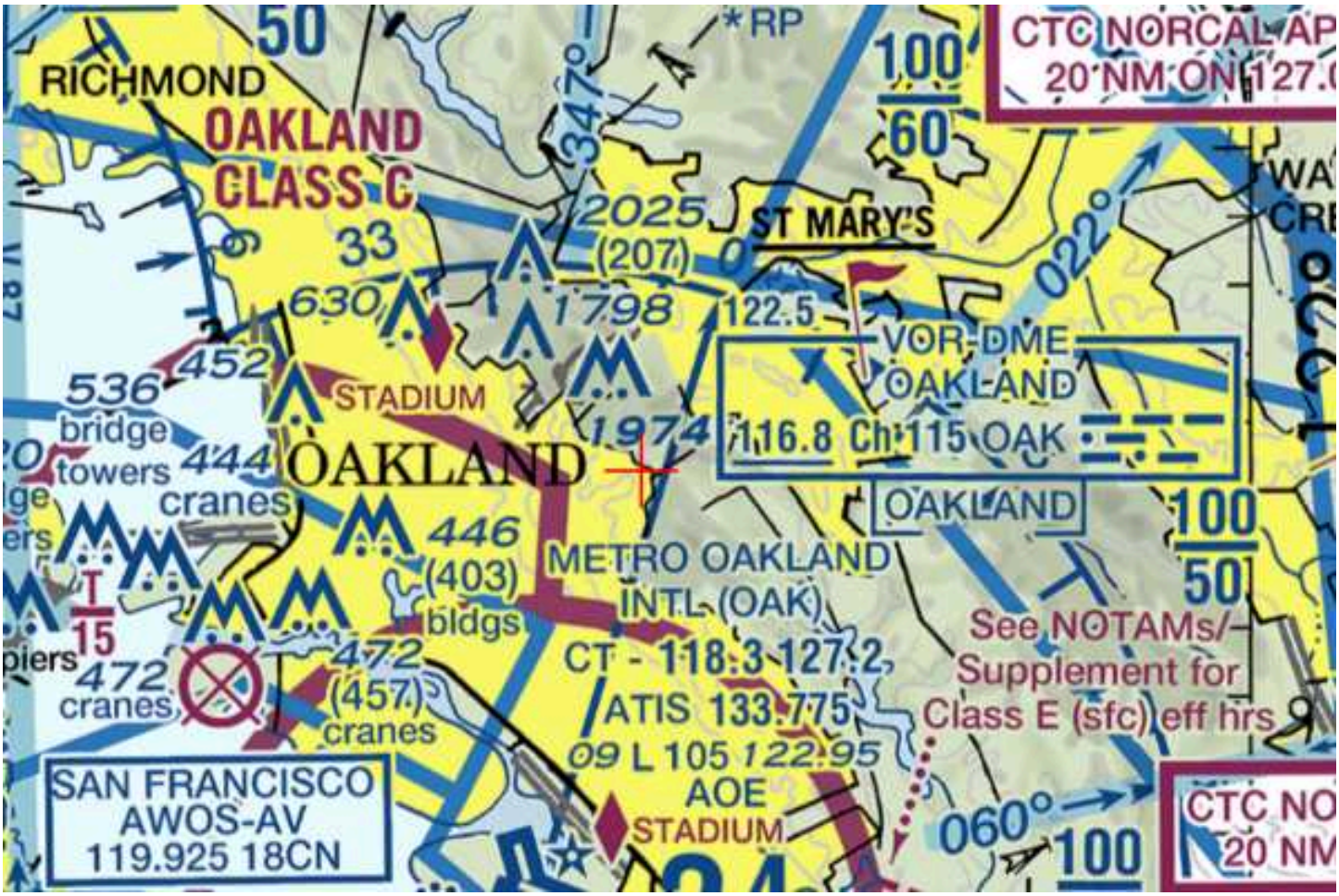
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1614-OE.

Signature Control No: 611458080-618508788 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1614-OE

Sectional Map for ASN 2024-AWP-1614-OE



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Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1615-OE

Issued Date: 04/09/2024

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Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-Highest 1/8-1/9
Location:	Canyon, CA
Latitude:	37-50-29.37N NAD 83
Longitude:	122-10-52.41W
Heights:	789 feet site elevation (SE) 242 feet above ground level (AGL) 1031 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

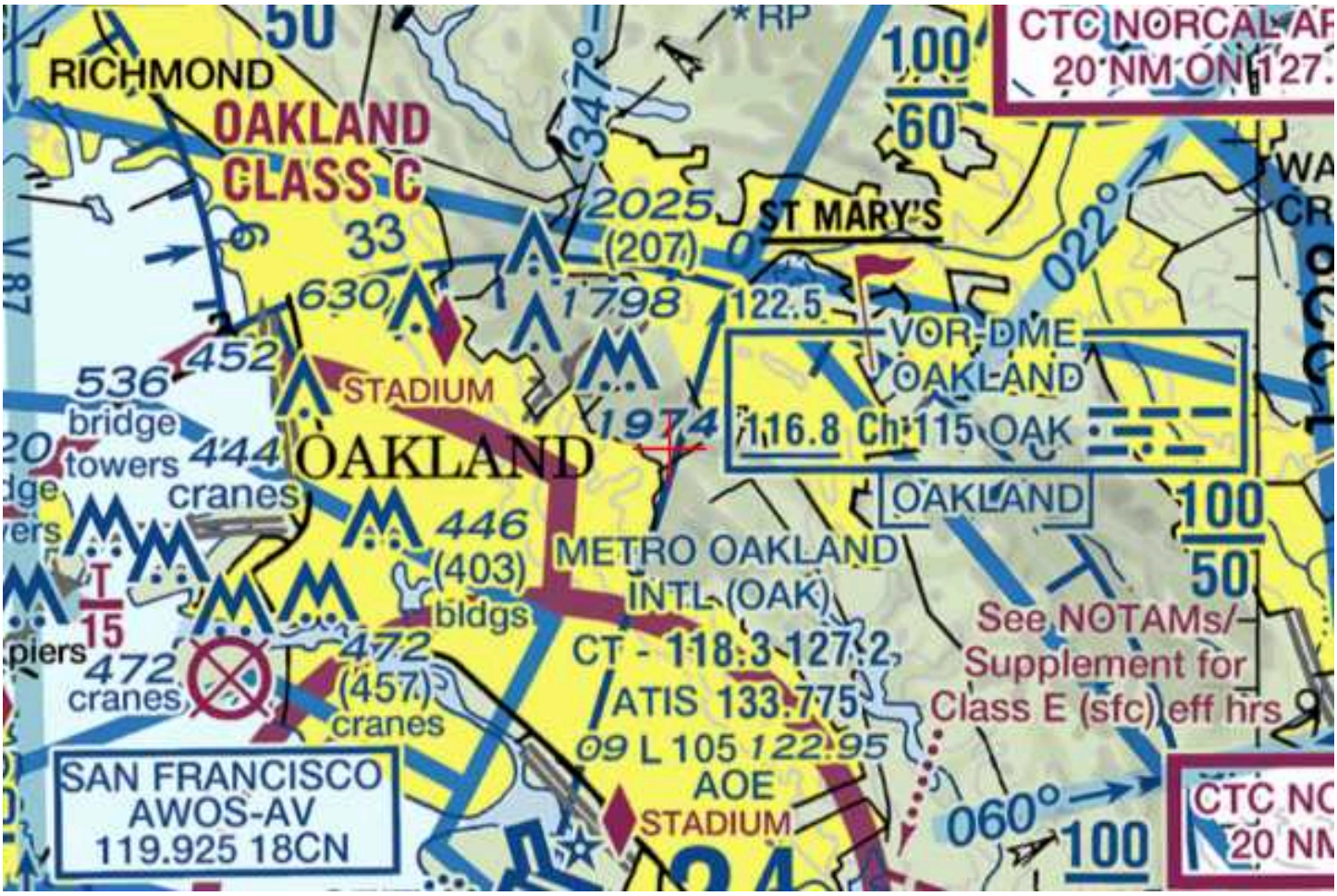
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1615-OE.

Signature Control No: 611458081-618506330 (DNE)
William Wills
Specialist

Attachment(s)
Additional Information
Map(s)

Marking and lighting was considered but deemed unnecessary due to the surrounding rising terrain. To the northeast the terrain rises to 1084 feet MSL, to the northwest it rises to 982 feet MSL, to the southwest it rises to 1028 feet MSL, and to the southeast it rises up 934 feet MSL. The structures will be located in a valley at 791 feet MSL and 789 feet MSL. Therefore, with respect to the terrain marking or lighting this structure would serve no useful purpose.

TOPO Map for ASN 2024-AWP-1615-OE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INTL (OAK)
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Obstruction Evaluation Group
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Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1616-OE

Issued Date: 04/09/2024

Andrew Davies
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Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-Highest 1/9-1/10
Location:	Canyon, CA
Latitude:	37-50-24.52N NAD 83
Longitude:	122-11-00.88W
Heights:	785 feet site elevation (SE) 297 feet above ground level (AGL) 1082 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

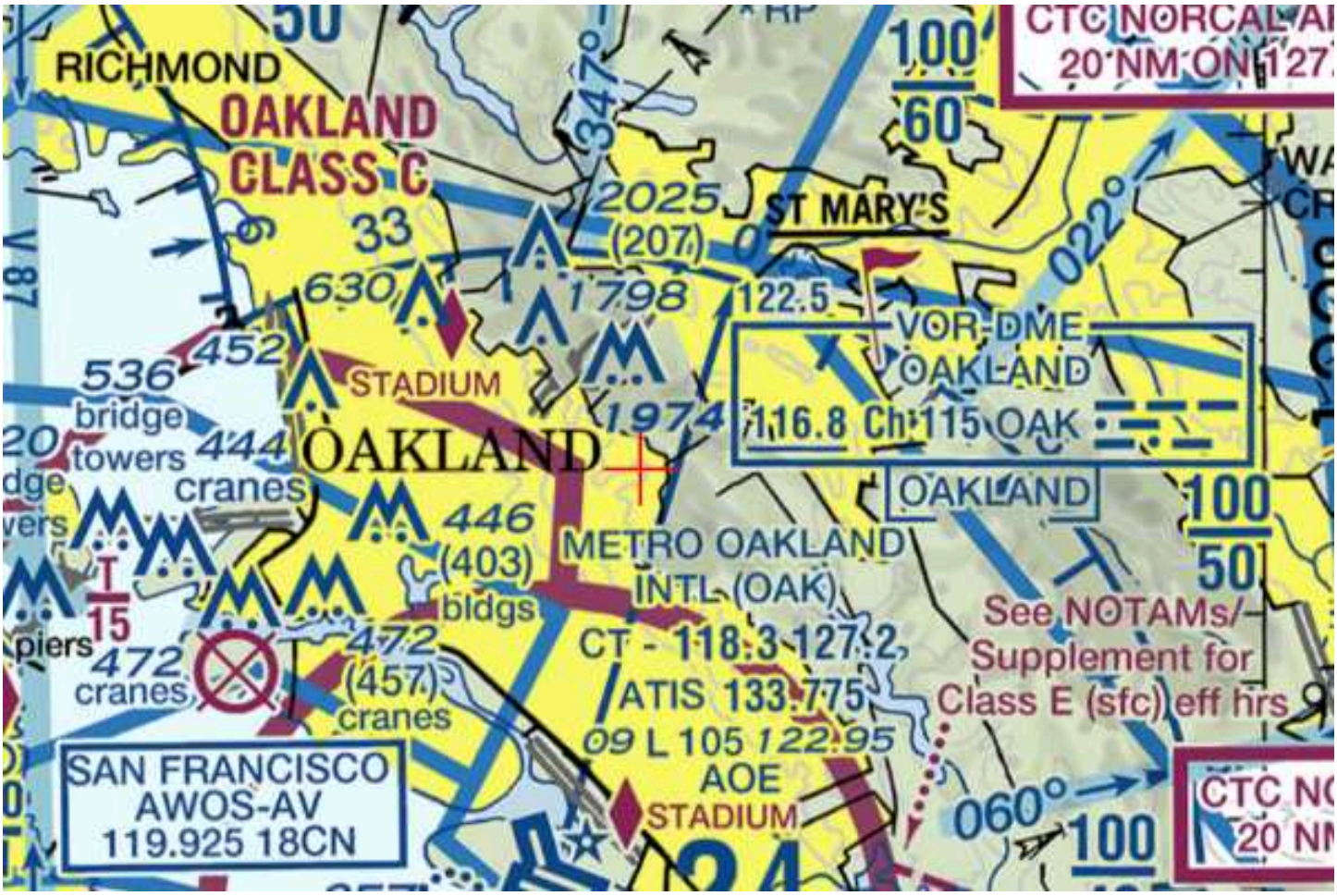
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1616-OE.

Signature Control No: 611458082-618504955 (DNE)
William Wills
Specialist

Attachment(s)
Additional Information
Map(s)

Marking and lighting was considered but deemed unnecessary due to the surrounding rising terrain. To the northeast the terrain rises to 1016 feet MSL, to the northwest it rises to 1210 feet MSL, to the southwest it rises to 1119 feet MSL, and to the southeast it rises up 945 feet MSL. The structures will be located in a valley at 785 feet MSL and 787 feet MSL. Therefore, with respect to the terrain marking or lighting this structure would serve no useful purpose.

TOPO Map for ASN 2024-AWP-1616-OE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Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1617-OE

Issued Date: 04/09/2024

Andrew Davies
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220 Newport Center Dr.
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Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-End 1/10
Location:	Canyon, CA
Latitude:	37-50-16.86N NAD 83
Longitude:	122-11-14.27W
Heights:	1360 feet site elevation (SE) 126 feet above ground level (AGL) 1486 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

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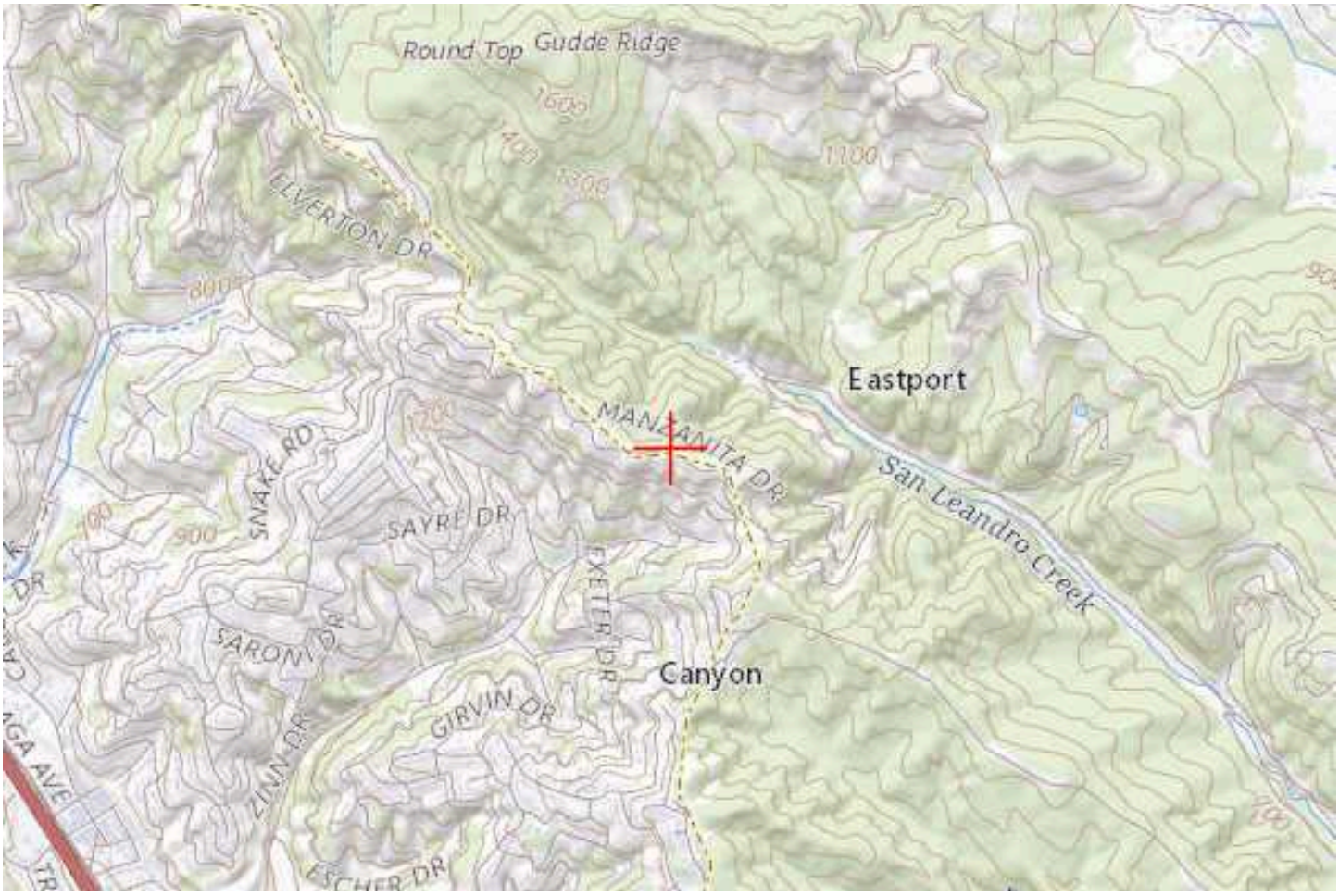
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1617-OE.

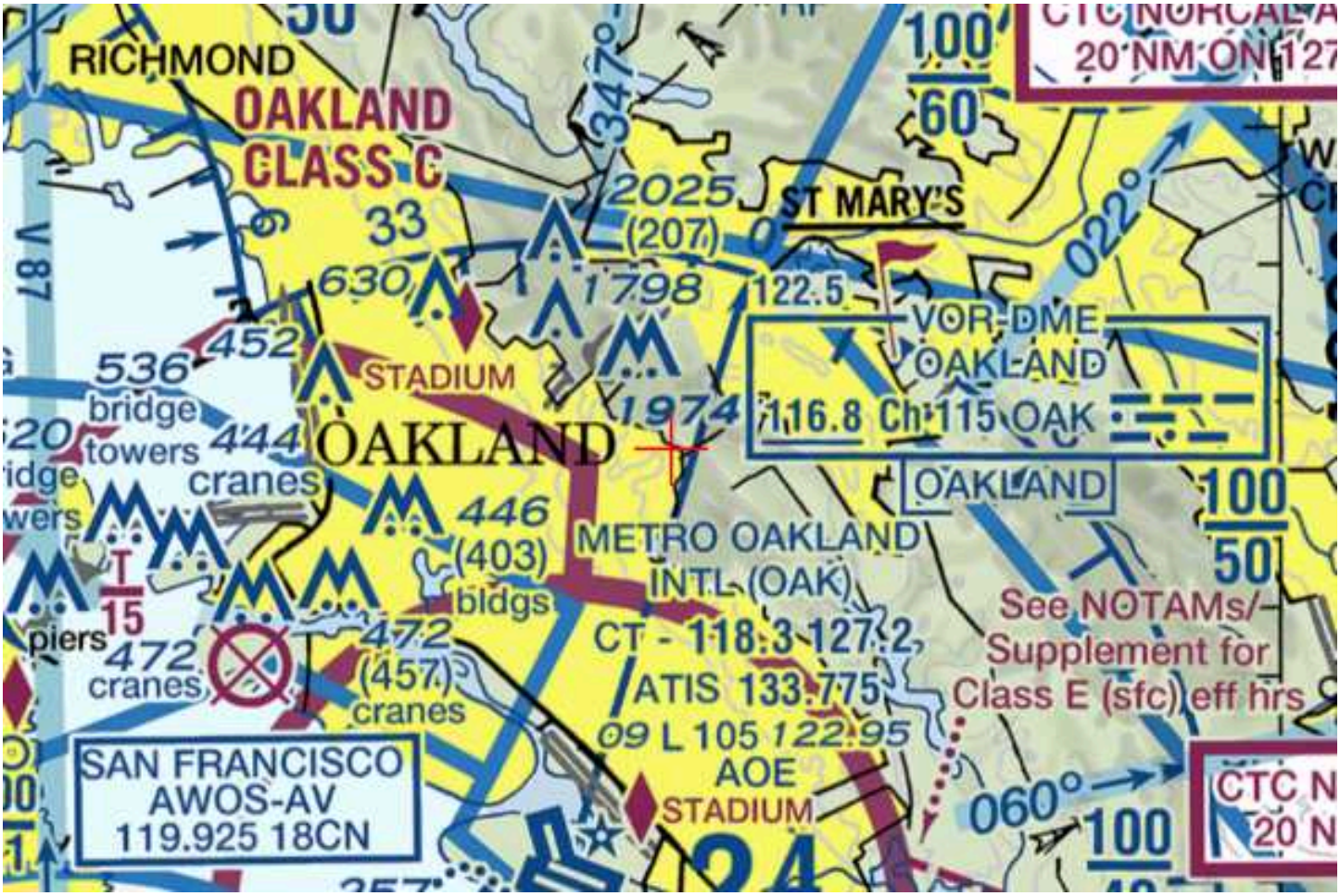
Signature Control No: 611458083-618508793 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1617-OE



Sectional Map for ASN 2024-AWP-1617-OE



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Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1618-OE

Issued Date: 04/09/2024

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**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-Begin 2/19
Location:	Canyon, CA
Latitude:	37-49-28.23N NAD 83
Longitude:	122-12-13.88W
Heights:	779 feet site elevation (SE) 118 feet above ground level (AGL) 897 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

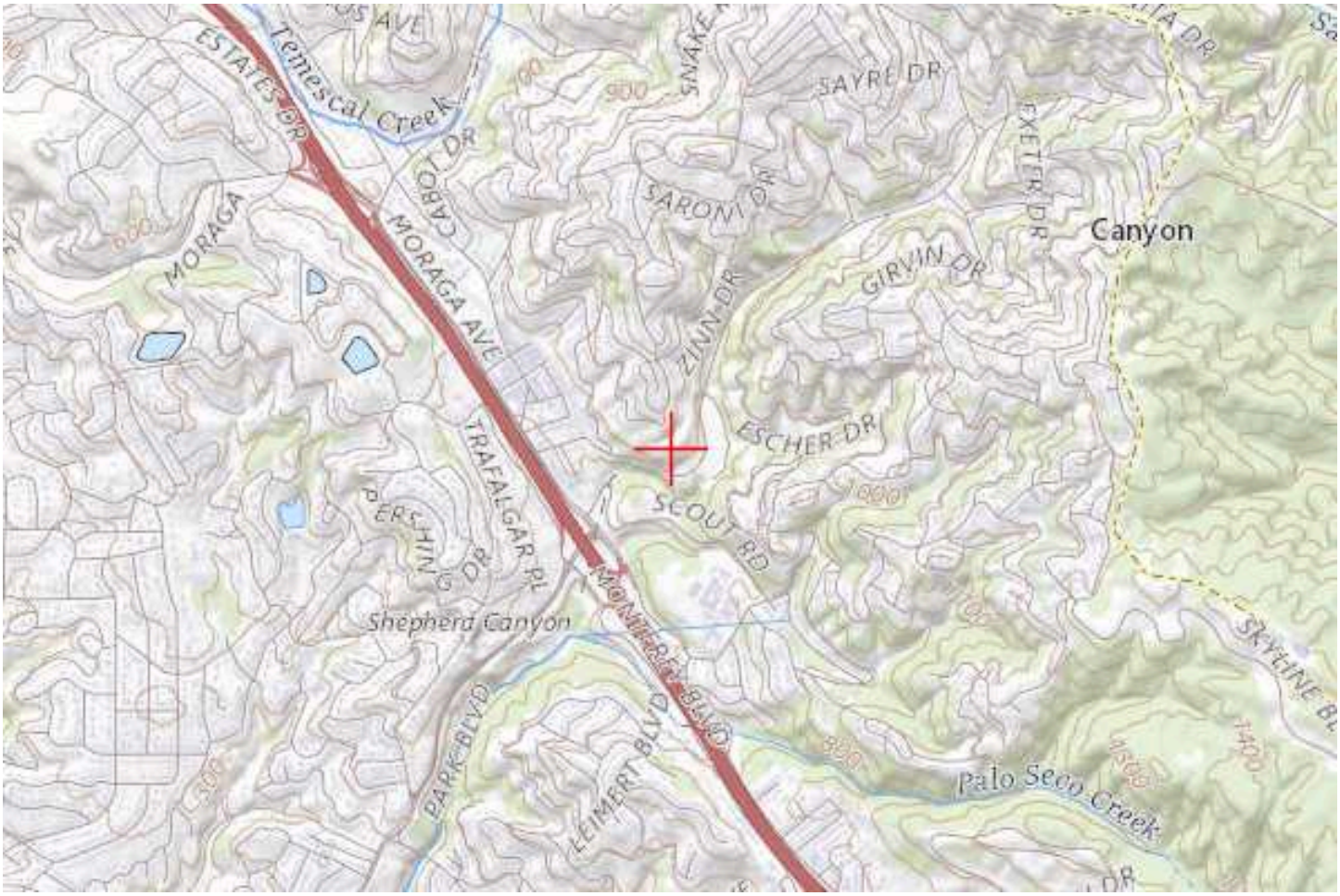
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1618-OE.

Signature Control No: 611458084-618508785 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1618-OE



Sectional Map for ASN 2024-AWP-1618-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1619-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-Highest 2/19-2/20
Location:	Canyon, CA
Latitude:	37-49-24.52N NAD 83
Longitude:	122-12-15.46W
Heights:	558 feet site elevation (SE) 226 feet above ground level (AGL) 784 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

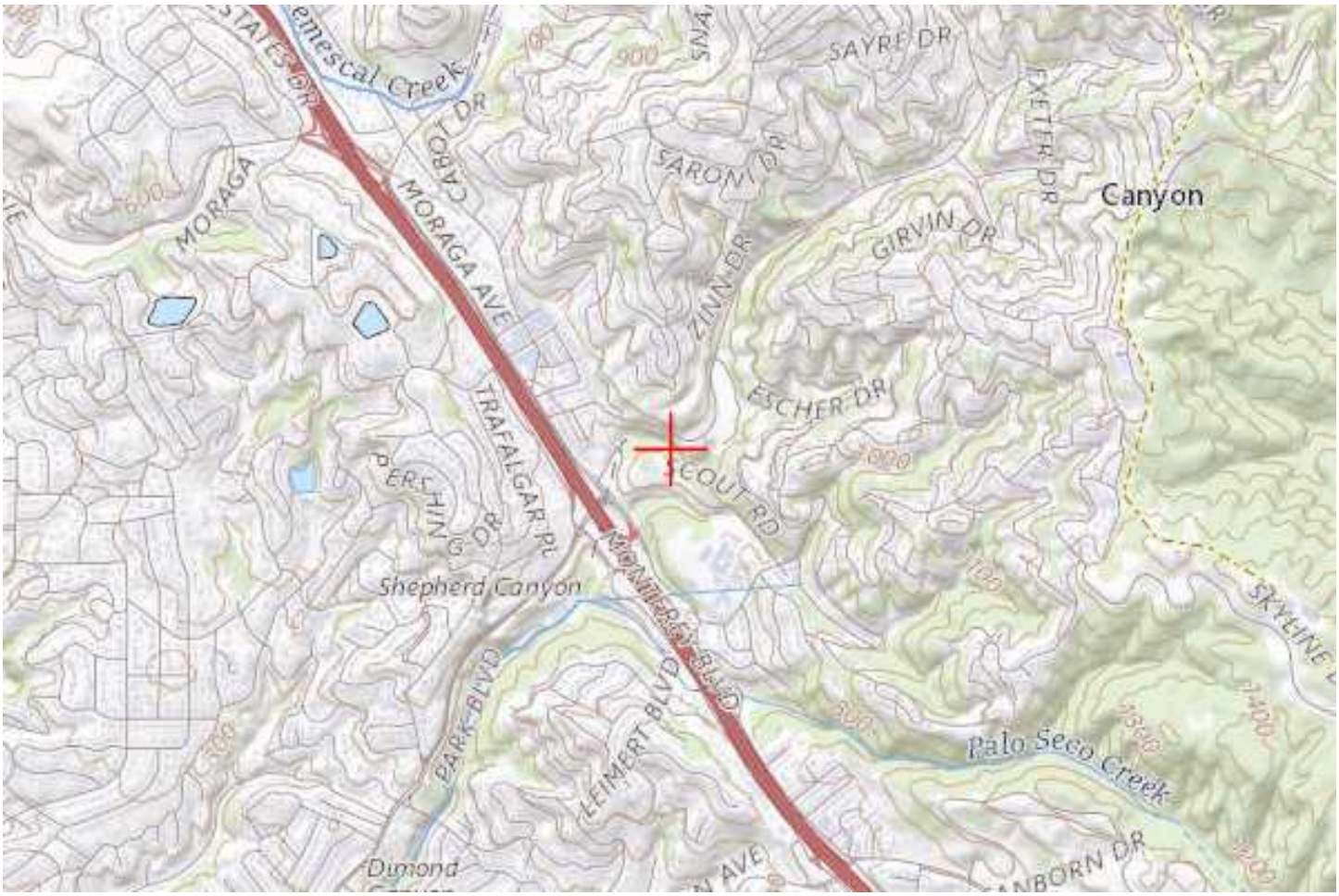
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1619-OE.

Signature Control No: 611458085-618508480 (DNE)
William Wills
Specialist

Attachment(s)
Additional Information
Map(s)

Marking and lighting was considered but deemed unnecessary due to the surrounding rising terrain. To the northeast the terrain rises to 814 feet MSL, to the west it rises to 645 feet MSL, to the southwest it rises to 685 feet MSL, and to the southeast it rises to 1010 feet MSL. The structures will be located in a valley at 557 feet MSL and 558 feet MSL. Therefore, with respect to the terrain marking or lighting this structure would serve no useful purpose.

TOPO Map for ASN 2024-AWP-1619-OE



Sectional Map for ASN 2024-AWP-1619-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1620-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-End 2/20
Location:	Canyon, CA
Latitude:	37-49-21.10N NAD 83
Longitude:	122-12-16.92W
Heights:	626 feet site elevation (SE) 81 feet above ground level (AGL) 707 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

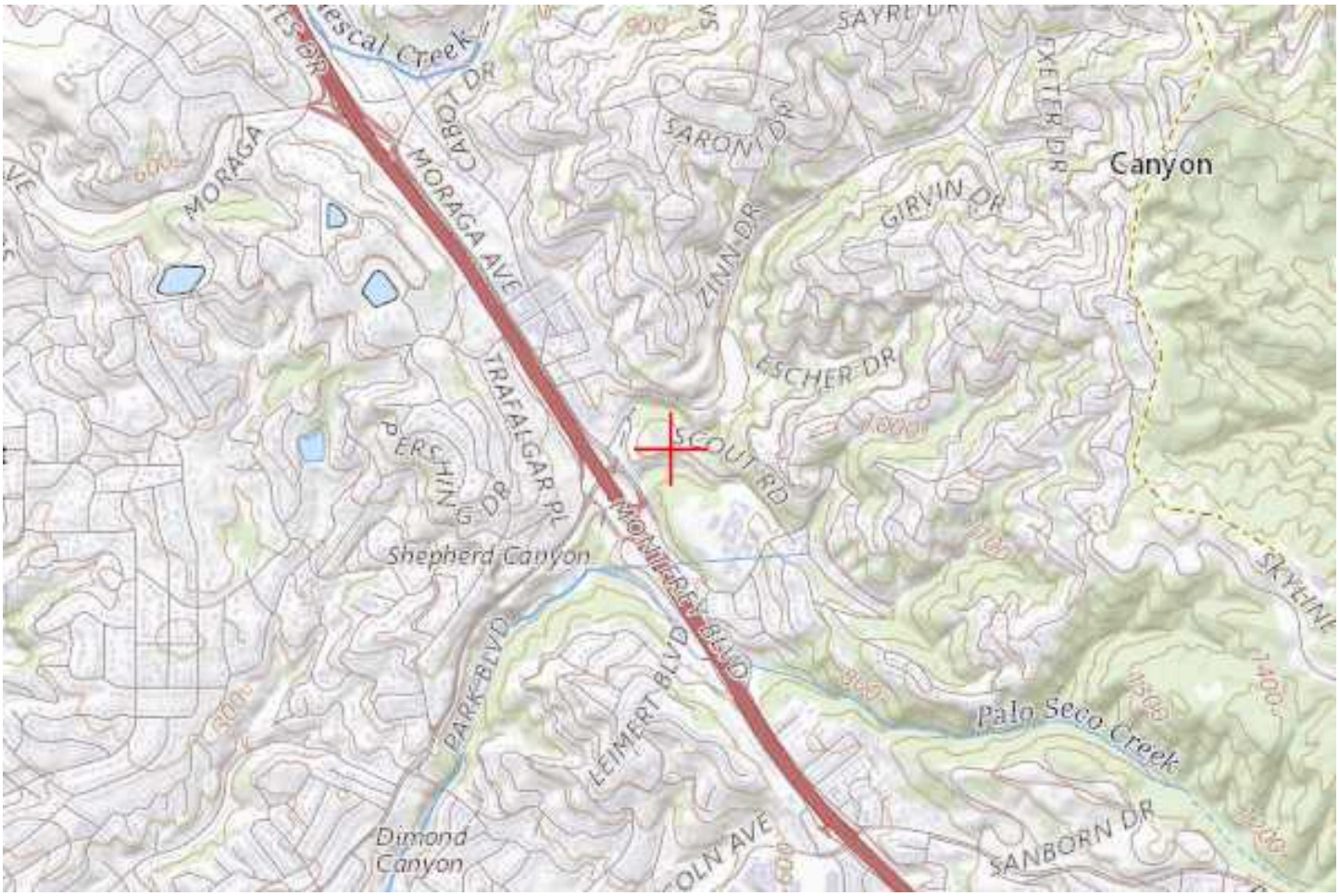
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1620-OE.

Signature Control No: 611458086-618508790 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1620-OE



Sectional Map for ASN 2024-AWP-1620-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1621-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-Begin 3/25
Location:	Canyon, CA
Latitude:	37-48-56.99N NAD 83
Longitude:	122-12-38.67W
Heights:	529 feet site elevation (SE) 88 feet above ground level (AGL) 617 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

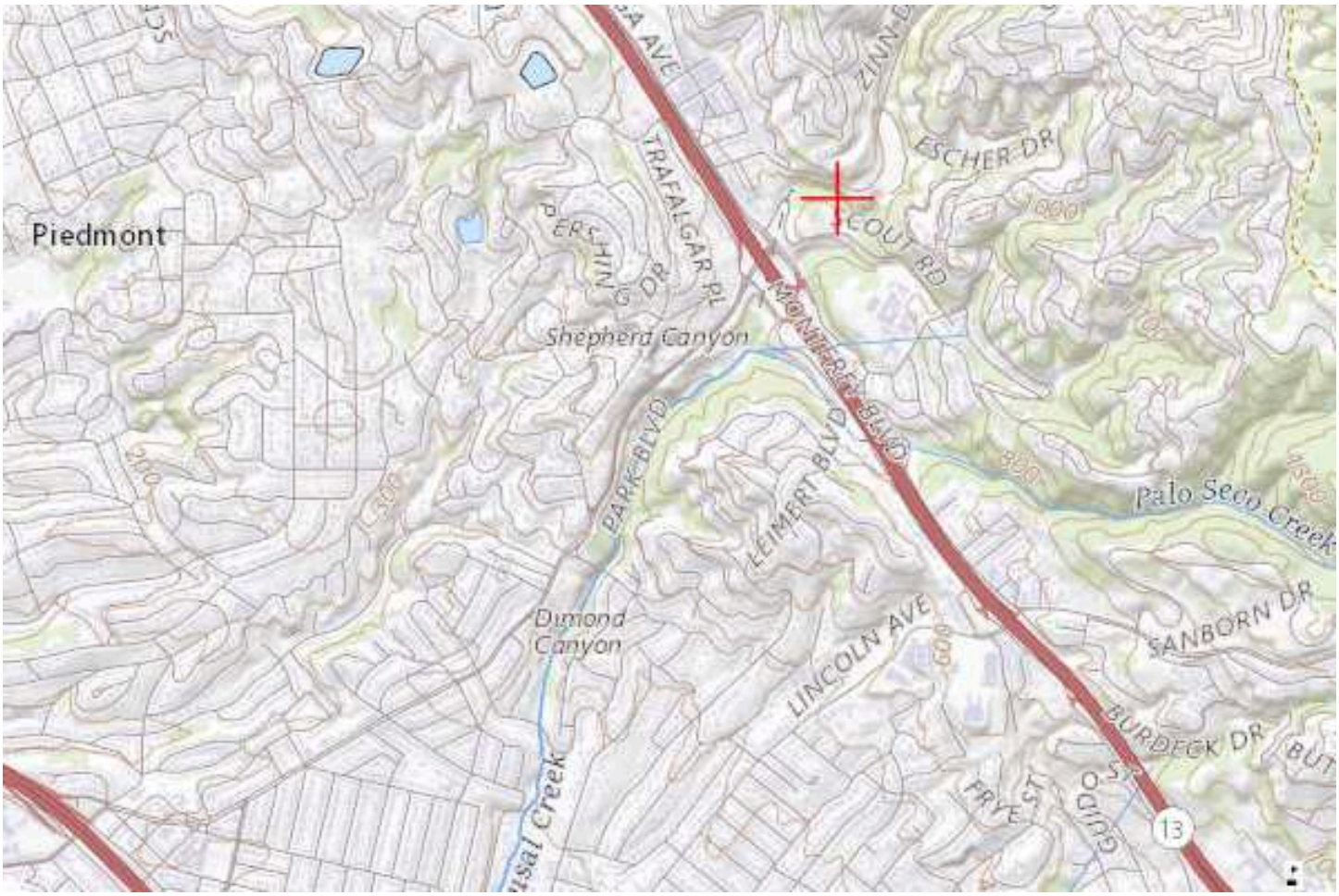
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1621-OE.

Signature Control No: 611458087-618508783 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1621-OE



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Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1622-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-Highest 3/25-3/26
Location:	Canyon, CA
Latitude:	37-48-53.05N NAD 83
Longitude:	122-12-44.35W
Heights:	288 feet site elevation (SE) 202 feet above ground level (AGL) 490 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

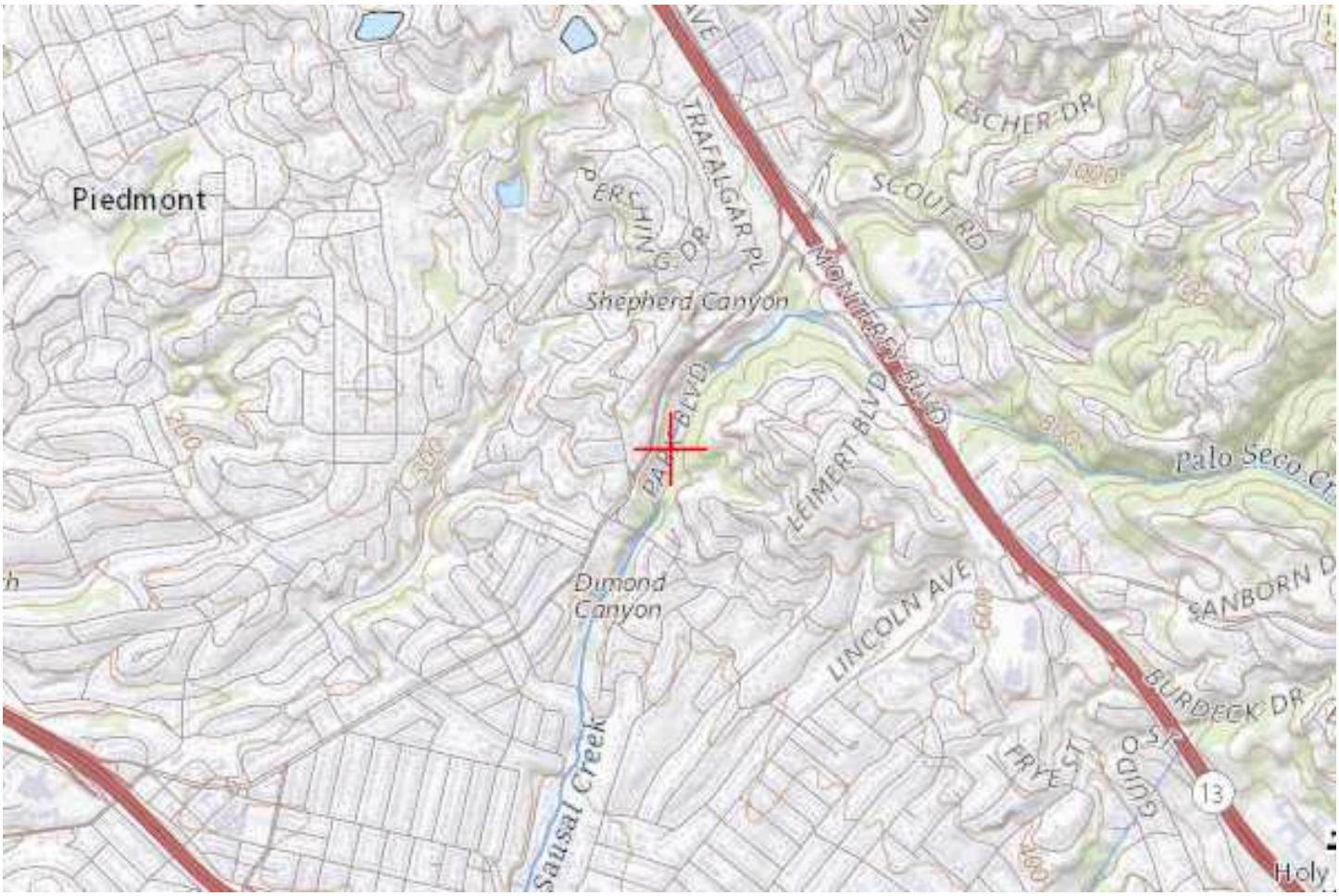
If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1622-OE.

Signature Control No: 611458088-618508599 (DNE)
William Wills
Specialist

Attachment(s)
Additional Information
Map(s)

Marking and lighting was considered but deemed unnecessary due to the surrounding rising terrain. To the northeast the terrain rises to 422 feet MSL, to the northwest it rises to 414 feet MSL, to the southwest it rises to 481 feet MSL, and to the southeast it rises to 567 feet MSL. The structures will be located in the Sausal Creek valley at 297 feet MSL and 288 feet MSL. Therefore, with respect to the terrain marking or lighting this structure would serve no useful purpose.

TOPO Map for ASN 2024-AWP-1622-OE



Sectional Map for ASN 2024-AWP-1622-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1623-OE

Issued Date: 04/09/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-End 3/26
Location:	Canyon, CA
Latitude:	37-48-51.55N NAD 83
Longitude:	122-12-46.52W
Heights:	370 feet site elevation (SE) 92 feet above ground level (AGL) 462 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/09/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

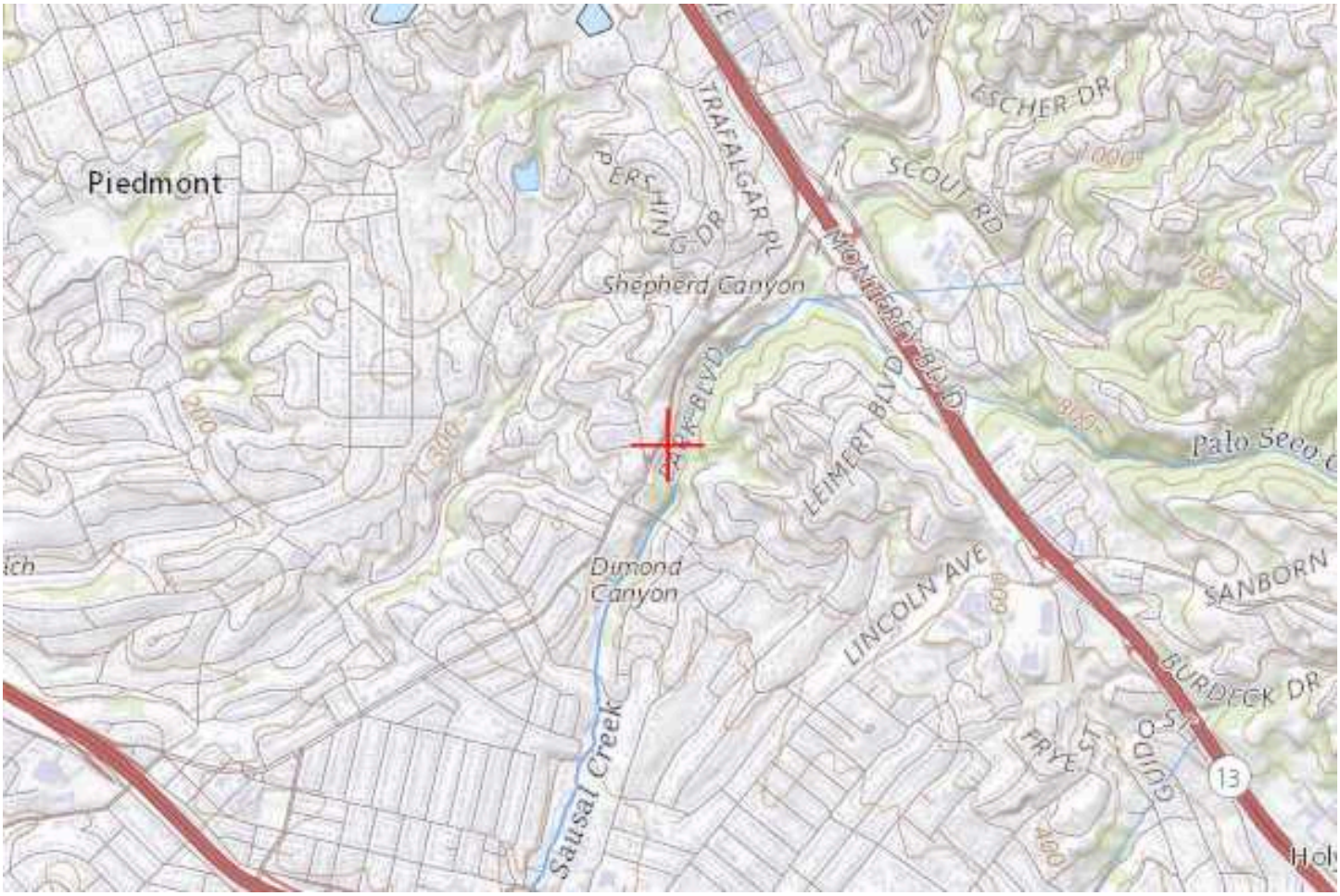
This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (847) 294-7572, or william.e.wills@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1623-OE.

Signature Control No: 611458089-618508792 (DNE)
William Wills
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1623-OE



Sectional Map for ASN 2024-AWP-1623-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1754-OE

Issued Date: 04/04/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-Begin 2/14
Location:	Piedmont, CA
Latitude:	37-49-59.65N NAD 83
Longitude:	122-11-44.69W
Heights:	1036 feet site elevation (SE) 86 feet above ground level (AGL) 1122 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/04/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO

SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

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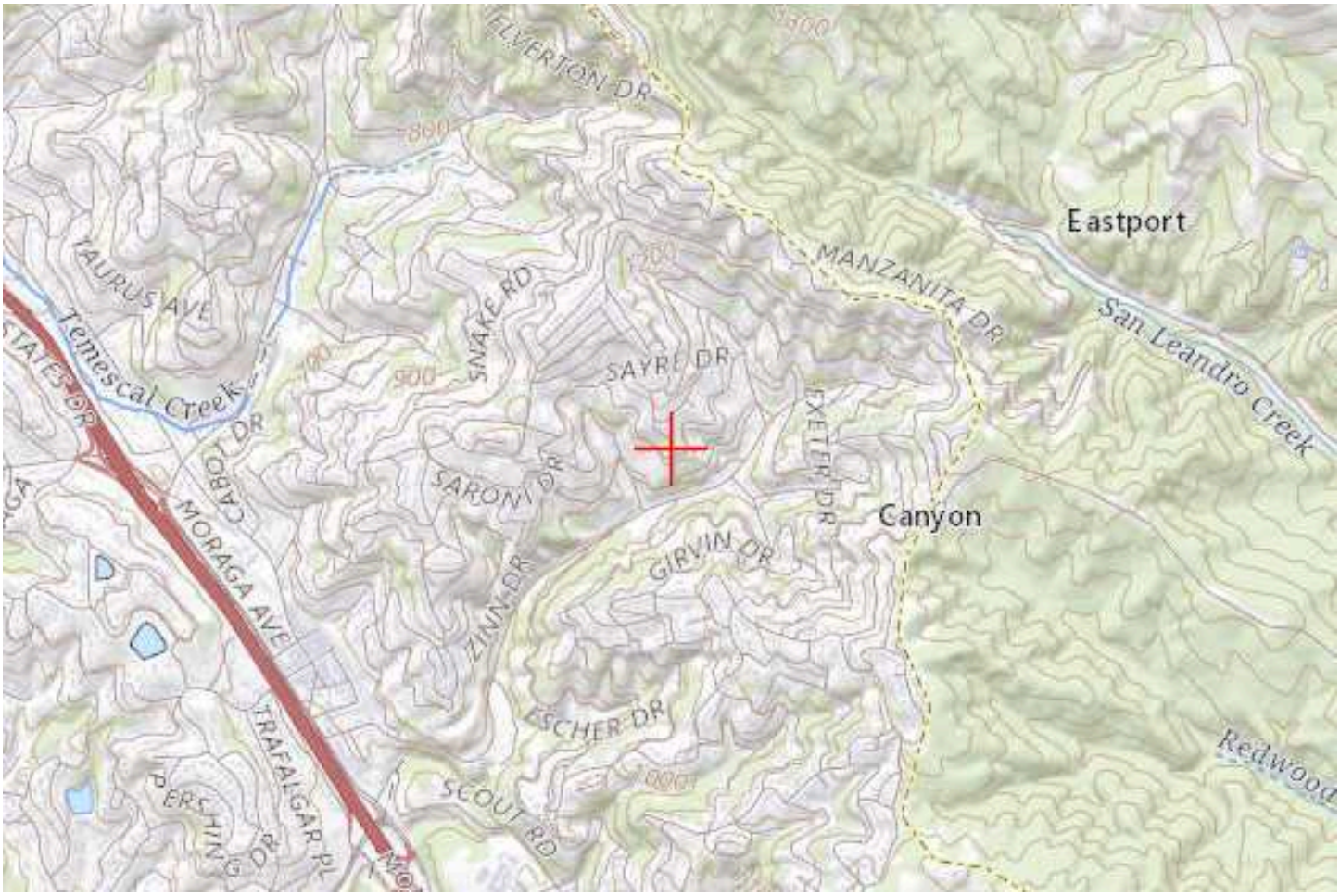
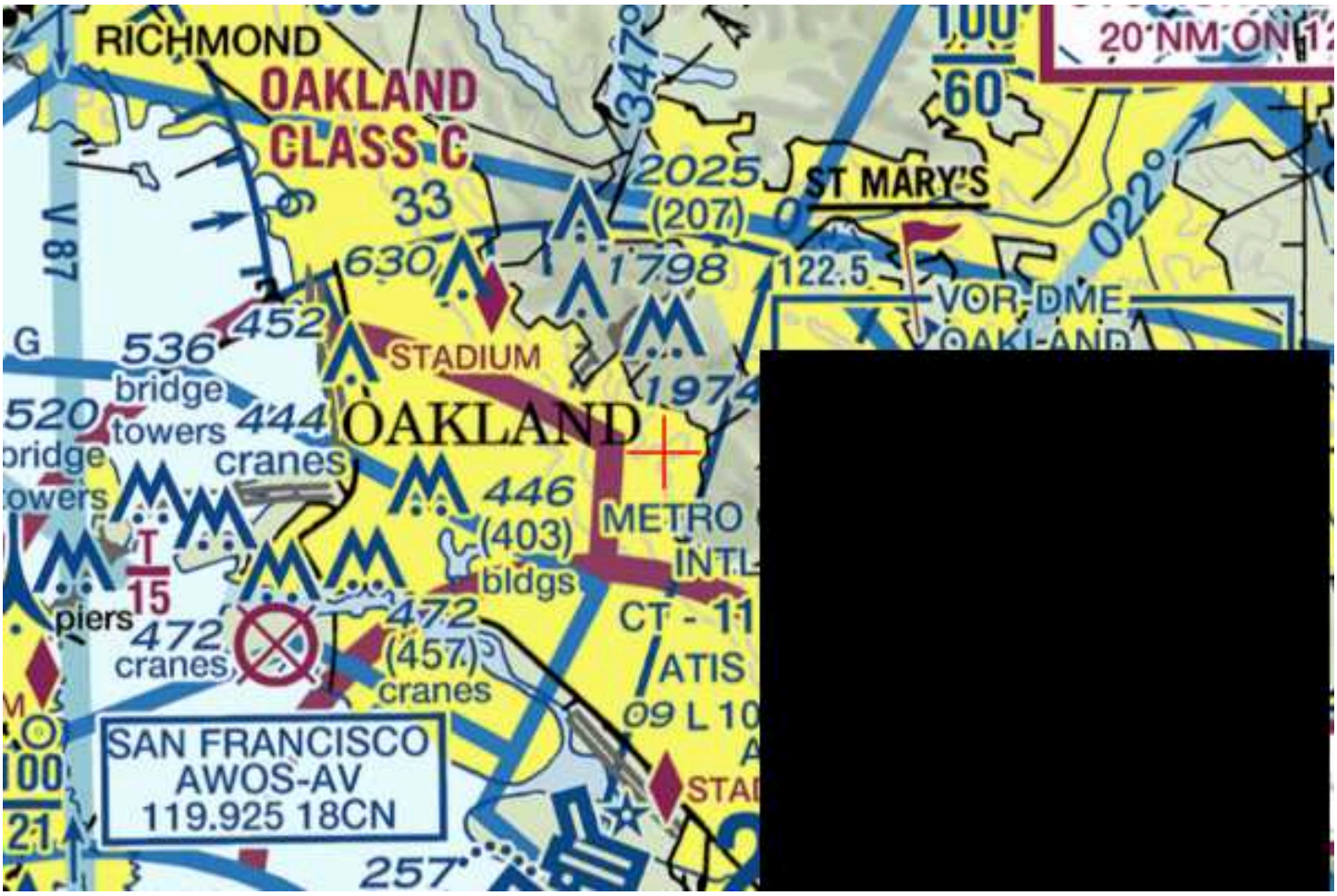
If we can be of further assistance, please contact our office at (847) 294-7575, or vivian.vilaro@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1754-OE.

Signature Control No: 611906931-617978341 (DNE)
Vivian Vilaro
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1754-OE

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Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1755-OE

Issued Date: 04/04/2024

Andrew Davies
PG&E
220 Newport Center Dr.
SUITE 11-262
Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-Highest 2/14-2/15
Location:	Piedmont, CA
Latitude:	37-49-56.15N NAD 83
Longitude:	122-11-50.82W
Heights:	855 feet site elevation (SE) 219 feet above ground level (AGL) 1074 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.
Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/04/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

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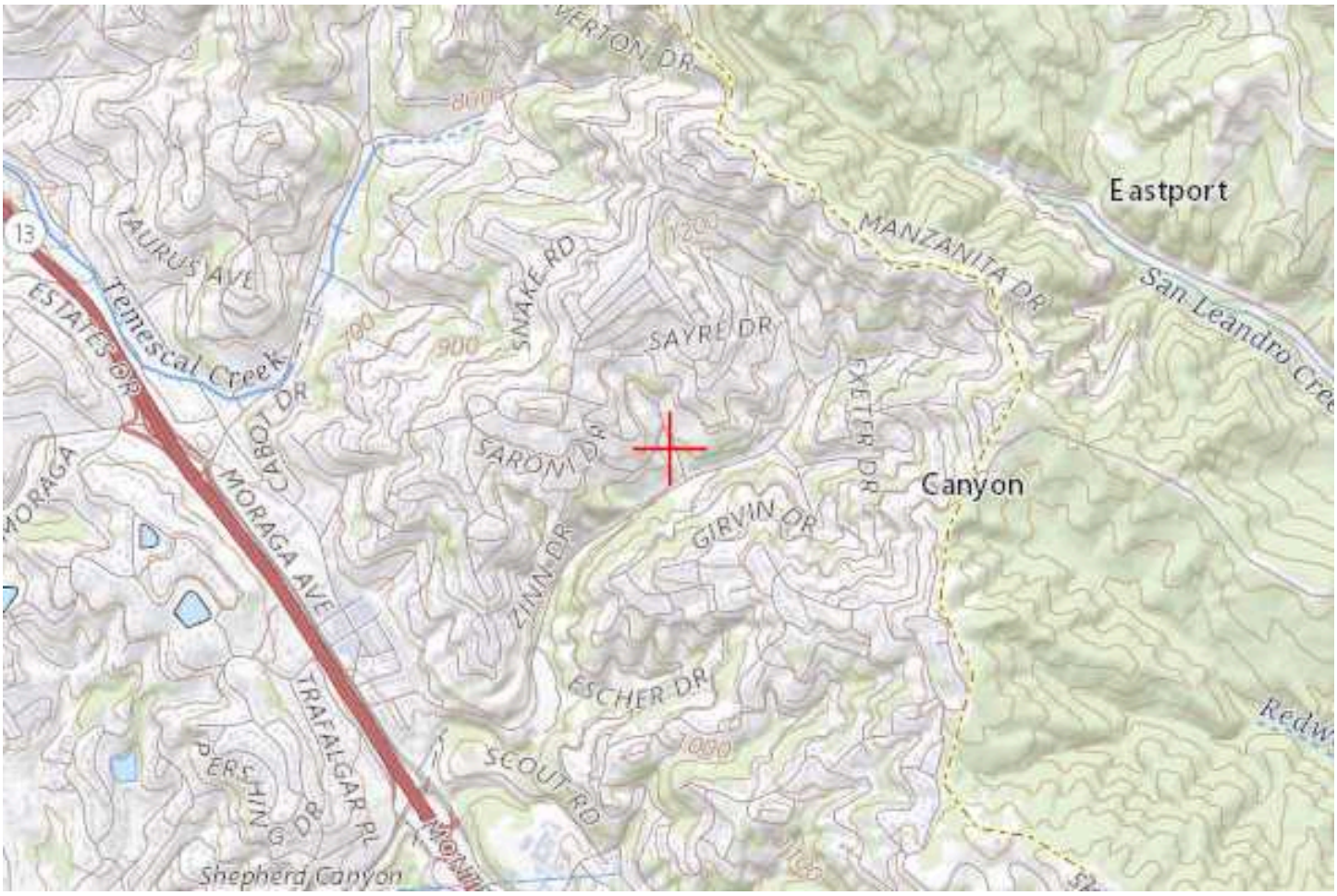
If we can be of further assistance, please contact our office at (847) 294-7575, or vivian.vilaro@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2024-AWP-1755-OE.

Signature Control No: 611906932-617980454 (DNE)
Vivian Vilaro
Specialist

Attachment(s)
Additional Information
Map(s)

Marking and lighting was considered but deemed unnecessary due to the surrounding rising terrain. In accordance with CFR Part 91 regulations, pilots operating under VFR must be able to operate the aircraft with visual reference to the ground, and by visually avoiding obstructions and other aircraft.

TOPO Map for ASN 2024-AWP-1755-OE



Sectional Map for ASN 2024-AWP-1755-OE

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10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2024-AWP-1756-OE

Issued Date: 04/04/2024

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Newport Beach, CA 92660

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Catenary Wire 74036854-MRGA-OKLND #3&4-End 2/15
Location:	Piedmont, CA
Latitude:	37-49-54.91N NAD 83
Longitude:	122-11-53.01W
Heights:	944 feet site elevation (SE) 133 feet above ground level (AGL) 1077 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 10/04/2025 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

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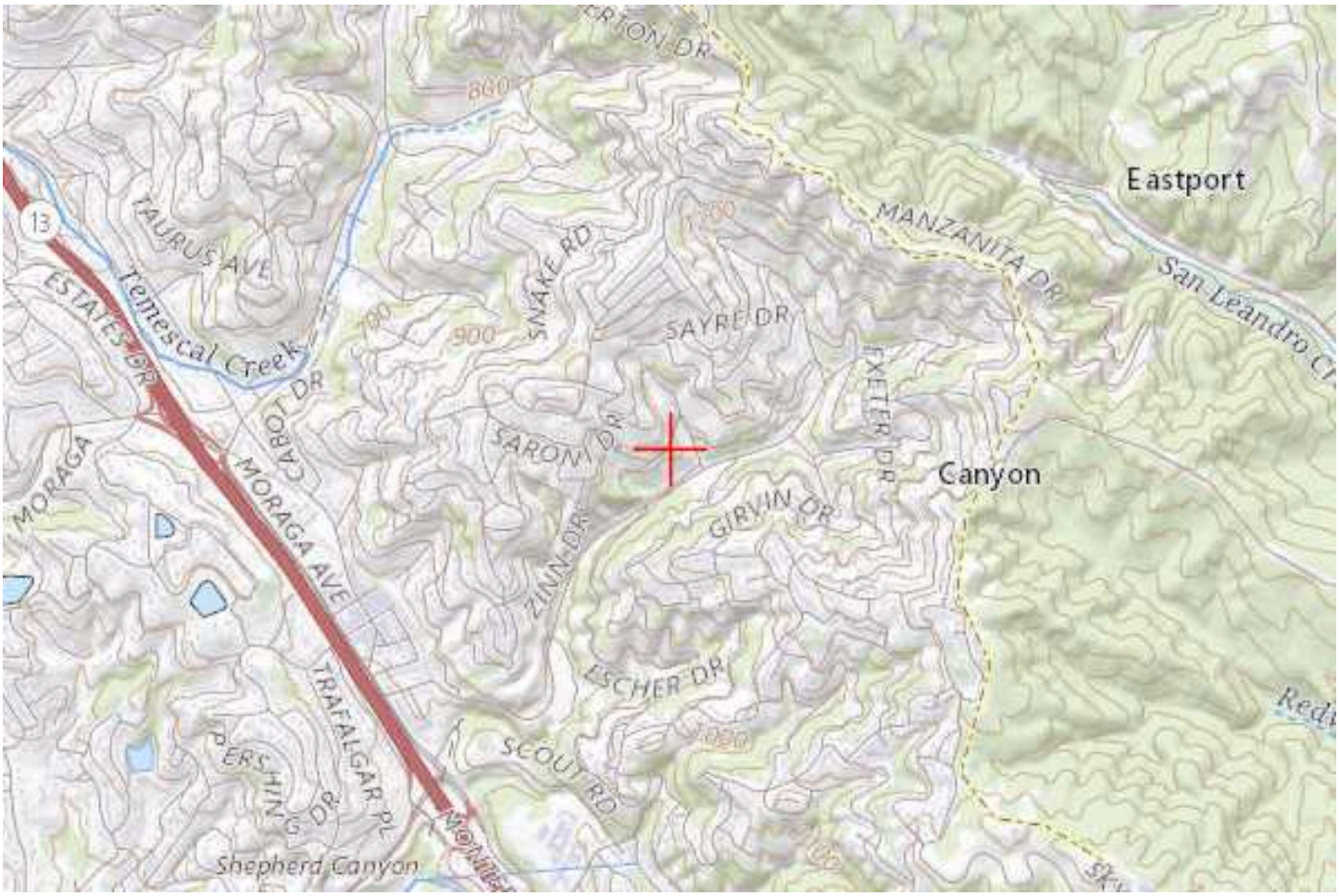
Signature Control No: 611906933-617978342 (DNE)
Vivian Vilaro
Specialist

Attachment(s)
Map(s)

TOPO Map for ASN 2024-AWP-1756-OE



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Appendix E

AESTHETICS

APPENDIX E: Aesthetics
Visual Sensitivity – Visual Change System

Under the Visual Sensitivity – Visual Change (VS-VC) System, the existing landscape is first assessed to determine landscape character and overall visual sensitivity to change. Once the overall visual sensitivity has been determined at representative viewing locations (key observation points) the proposed Project and alternatives are assessed to determine the extent of Project-induced visual change. The determined level of overall visual change is then considered within the context of the determined overall visual sensitivity of the existing landscape and viewing dynamics to arrive at an impact determination relative to the appropriate CEQA impact significance criteria. Each of the factors considered in the evaluation of the existing landscape and the determination of overall visual change is generally expressed as Low, Low-to-Moderate, Moderate, Moderate-to-High, or High.

Visual Setting Analysis

Key Observation Points (KOPs) are stationary viewing locations selected for the purpose of analyzing and describing existing aesthetic resources in the Project area and for preparing visual simulations and assessing Project-induced visual change. Under the VS-VC System, the existing landscape at each KOP was characterized for visual quality, viewer concern, and viewer exposure (with each factor ranging in value from Low to High or Subordinate to Dominant (for project dominance)

Visual Quality is a measure of the overall impression or appeal of an area as determined by landscape characteristics such as landforms, rockforms, water features, vegetation patterns, and built structures as well as associated public values. The attributes of variety, vividness, coherence, uniqueness, harmony, and pattern contribute to visual quality classifications of indistinctive (Low), common (Moderate), and distinctive (High). Visual quality is studied as a point of reference to assess whether a proposed project would appear compatible with the established features of the setting or would contrast noticeably and unfavorably with them. Additional guidance for determining the visual quality rating is presented in Table E-1.

Viewer Concern addresses the level of interest or concern of viewers regarding an area's aesthetic resources and is closely associated with viewers' expectations for the area. Viewer concern reflects the importance placed on a given landscape based on the human perceptions of the intrinsic beauty and coherence of the existing landscape features. In areas of more distinctive visual quality such as designated scenic highways or roads, parks, and recreation and natural areas, viewer concern is characteristically more pronounced. In areas of more indistinctive or common visual quality, sensitivity to change tends to be less pronounced depending on the level of viewer exposure.

Viewer Exposure describes the degree to which viewers are exposed to views of the landscape. Viewer exposure considers: (1) landscape visibility (the ability to see the landscape); (2) distance zones (proximity of viewers to the subject landscape); (3) number of viewers; and (4) the duration of view. For the purposes of describing a project's visual setting, the project viewshed can be broken down into three distance zones consisting of the foreground, middleground, and background. The foreground can typically be defined as within 0.25 mile to 0.5 mile of the viewer; the middleground can be defined as the zone that extends from the foreground to a maximum of 3 to 5 miles from the viewer; and the background can be defined as extending beyond the middleground. However, distance zones are substantially influenced by the existing landscape and viewing characteristics. Specifically, confined landscapes with limited viewing distances due to terrain and vegetation obstruction warrant a tighter bracketing of the distance zones. Such is the case for the proposed Project. In this case, the foreground is defined as within 0.25 mile of the viewer. The middleground is defined as extending from the foreground (0.25 mile) to 0.5 mile from the viewer,

and the background is defined as extending beyond 0.5 mile from the viewer. Landscape visibility can be a function of several interconnected considerations including: (1) proximity to viewing point; (2) degree of discernible detail; (3) seasonal variations (snow, fog, and haze can obscure landscapes, while access and visitation can vary); (4) time of day; and/or (5) presence or absence of screening features such as landforms, vegetation, and/or built structures. Even though a landscape may be highly visible, it may be remote, receiving relatively few visitors and, thus, have a lower degree of viewer exposure. Conversely, a subject landscape or project may be situated in close proximity to a major road or highway utilized by a substantial number of motorists and yet still result in relatively low viewer exposure if the rate of travel speed is high, viewing times are brief, the angle of view is beyond the primary cone of vision (approximately 45 degrees either side of the direction of travel), or if the landscape is partially screened by vegetation or structures (as in densely populated urban and suburban areas). Frequently, it is the subject area's proximity to viewers or distance zone that is of particular importance in determining viewer exposure. Landscapes are generally subdivided into three or four distance zones based on relative visibility from travel routes or observation points. Distance zones typically include foreground, middleground, and background. The actual number of zones and distance assigned to each zone is dependent on the existing terrain characteristics and public policy and is often determined on a project-by-project basis.

Overall Visual Sensitivity is a concluding assessment as to an existing landscape's susceptibility to an adverse visual outcome (rated from Low to High). A landscape with a High degree of visual sensitivity can accommodate only a lower degree of adverse visual change without resulting in a significant aesthetic impact. A landscape with a Low degree of visual sensitivity can accommodate a higher degree of visual change before exhibiting a significant aesthetic impact. Overall visual sensitivity is derived from a summation of the equally weighted existing visual quality, viewer concern, and viewer exposure.

Table E-1. Visual Quality Rating Guidance

Visual Quality Rating	Visual Quality
High	■ Landscape elements (landforms, vegetative patterns, water characteristics, and cultural features) have high visual appeal ■ Landscape has high degree of variety, vividness, intactness, harmony, and uniqueness (attributes) ■ Distinctive landscape that attracts people to view
Moderate to High	■ Landscape elements have moderate to high visual appeal ■ Landscape attributes have a mix of moderate and high values ■ Landscape may contain built features that neither complement nor detract from overall visual quality
Moderate	■ Landscape elements are moderately appealing ■ Landscape attributes have common or ordinary values ■ Landscape may contain discordant, built features, but they are subordinate
Low to Moderate	■ Landscape elements have low to moderate appeal ■ Landscape has weak or missing attributes ■ Landscape may have prominent, though not dominant, discordant, built features
Low	■ Landscape elements have low to no appeal ■ Landscape is missing some attributes ■ Landscape is dominated by discordant, built features

Impact Assessment

Under the VS-VC System, overall visual change is determined at each KOP based on an assessment and equal weighting of project-induced visual contrast, project dominance, and view blockage/impairment and an evaluation of a visual simulation of the project. Project-induced visual change could result from: 1) aboveground facilities, 2) vegetation removal, 3) landform modification, 4) component size or scale

relative to existing landscape characteristics, and 5) the placement of project components relative to developed features. The experience of visual change can also be affected by the degree of available screening by: 1) vegetation, landforms, and/or structures; 2) distance from the observers; 3) atmospheric conditions; and 4) angle of view. Each of the key factors contributing to visual change is discussed below.

Visual Contrast describes the degree to which a project's visual characteristics or elements (consisting of form, line, color, texture, and scale) differ from the same visual elements established in the existing landscape. The degree of contrast can range from Low to High and is generally defined as follows.

- **Low** – Contrast can be seen but does not attract attention.
- **Moderate** – Contrast begins to attract attention and dominate the characteristic landscape.
- **High** – Contrast demands the viewer's attention and cannot be overlooked.

The presence of forms, lines, colors, and textures in the landscape, and features of similar scale like those of a project's components, indicates a landscape more capable of accepting those project characteristics than a landscape where those elements are absent.

Project Dominance is a measure of a project's apparent size relative to other visible landscape features and the total field of view. A project's dominance is affected by its relative location in the field of view and the distance between the viewer and the project. The level of dominance can range from Subordinate to Dominant and, in effect, is a measure of the degree to which a project feature demands the attention of the casual observer. Co-dominance is a mid-range rating that suggests the feature is equally dominant with other visible landscape features in the field of view.

View Blockage/Impairment describes the extent to which any previously visible landscape features are blocked from view because of a project's scale and/or position or are lost from view through removal (impairment). Blockage or impairment of higher-quality landscape features by lower quality project features or project actions causes adverse aesthetic impacts. This is particularly true with respect to scenic views, which refers to the degree to which a project would block or adversely affect scenic view corridors, particularly those identified in public policies. The degree of view blockage/impairment can range from Low to High.

Overall Visual Change is a concluding assessment as to the degree of change that would be caused by a project. Overall visual change is derived by combining the three equally weighted factors of visual contrast, project dominance, and view blockage/impairment, and can range from Low to High. Overall visual change is then considered within the context of the determined overall visual sensitivity of the existing landscape and viewing dynamics, and an impact significance conclusion is made per the appropriate CEQA impact criteria. Table E-2 illustrates the general interrelationship between overall visual sensitivity and overall visual change in determining impact significance and is used as a consistency check between individual KOP evaluations. Actual parameter determinations (e.g., visual contrast, project dominance, and view blockage/impairment) are based on site-specific circumstances and analyst experience.

While the interrelationships presented in Table E-2 are intended as guidance only, it is reasonable to conclude that lower visual sensitivity ratings paired with lower visual change ratings will generally correlate with lower degrees of impact when viewed in the field. Conversely, higher visual sensitivity ratings paired with higher visual change ratings will tend to result in higher degrees of aesthetic impact. Implicit in this rating method is the acknowledgment that for an aesthetic impact to be considered significant, two conditions generally exist: (1) the existing landscape is of reasonably high quality and is relatively valued by viewers, and (2) the perceived incompatibility of one or more project elements or characteristics tends toward the high extreme, leading to a substantial reduction in visual quality.

Table E-2. General Guidance for Consistency Review of Impact Significance

Overall Visual Sensitivity	Overall Visual Change				
	Low	Low to Moderate	Moderate	Moderate to High	High
Low	No impact[1]	No impact	Less Than Significant[2]	Less Than Significant	Less Than Significant
Low to Moderate	No impact	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant with Mitigation Incorporated [3]
Moderate	Less Than Significant	Less Than Significant	Less Than Significant	Less Than Significant with Mitigation Incorporated	Less Than Significant with Mitigation Incorporated
Moderate to High	Less Than Significant	Less Than Significant	Less Than Significant with Mitigation Incorporated	Less Than Significant with Mitigation Incorporated	Potentially Significant and Unavoidable
High	Less Than Significant	Less Than Significant with Mitigation Incorporated	Less Than Significant with Mitigation Incorporated	Potentially Significant and Unavoidable[4]	Potentially Significant and Unavoidable

1 - No Impact – Impacts may or may not be perceptible but are considered minor in the context of existing landscape characteristics and view opportunity.
2 - Less Than Significant – Impacts are perceived as negative but do not exceed environmental thresholds.
3 - Less Than Significant with Mitigation Incorporated – Impacts are perceived as negative and may exceed environmental thresholds depending on project and site-specific circumstances but are less than significant with effective mitigation incorporated.
4 - Potentially Significant and Unavoidable – Impacts that are perceived as substantial (exceeding environmental thresholds) but likely cannot be mitigated to a less-than-significant level, even with feasible measures.

Appendix F

BIOLOGICAL RESOURCES

APPENDIX F: Biological Resources Supporting Information

This appendix contains the following information:

F.1. Vegetation F-1
F.1.1. Vegetation Communities Classification F-2
F.1.2. Upland Herbaceous Vegetation Types F-4
F.1.3. Wetland Herbaceous Dominated Vegetation Types F-10
F.1.4. Other Land Cover Types F-11
F.1.5. Sensitive Natural Communities F-12
F.2. Common Wildlife F-12
F.3. Special-Status Plant Species F-12
F.4. Special Status Wildlife Species F-17
F.5. Protective Measures from BAHCP, O&M ITP, and O&M ITP EIR F-33
F.6. References F-46

TABLES

Table F-1. Vegetation Communities Present in the Botanical Study and Survey Area F-1
Table F-2. Vegetation Communities Classification/Mapping Comparison F-2
Table F-3. CLN Vegetation Communities Present in the BSA F-3
Table F-4. Special-Status Plant Species with Potential to Occur in the BSA F-15
Table F-5. Special-Status Wildlife Species and Potential to Occur in Project Area F-26
Table F-6. Relevant Field Protocols from the BAHCP F-33
Table F-7. Relevant Species-specific Avoidance and Minimization Measures from the BAHCP F-35
Table F-8. Relevant CDFW Measures from the Bay Area O&M ITP F-35
Table F-9. Relevant Applicant-proposed Measures from the ITP FEIR F-41

The following biological resources baseline setting information is based on PG&E's Proponent's Environmental Assessment, submitted to the CPUC in November 2024 (PG&E, 2024). PG&E conducted biological database queries and reviewed literature sources for information on natural communities and special-status plants and wildlife that have potential to occur in the BSA. Pertinent biological database queries were re-run and additional database queries were conducted. Database queries and literature sources are further described in the EIR, Section 3.4.1.1, Methodology and Biological Study Area.

F.1. Vegetation

PG&E's vegetation mapping is based on Conservation Lands Network (CLN) Vegetation (BAOSC, 2019) mapping for the entire Biological Study Area (BSA) and refined to the List of California Vegetation Alliances (Holland, 1986) and classifications presented in the *Manual of California Vegetation* (MCV, Sawyer et al., 2009) within the botanical survey area (see PG&E's PEA Appendix B1 and Table F-1, F-2, and F-3 in Appendix F). CLN is a regional conservation strategy that focuses on Bay Area Counties that includes mapping course-filter vegetation communities (BAOSC, 2019). The CLN was used to map the larger BSA beyond the limits of botanical surveys to provide regional context. Botanical surveys identified more refined vegetation classifications based on Holland and MCV. Natural communities in California were first classified according to according to Holland (1986) "*Preliminary Descriptions of the Terrestrial Natural Communities of California*" and are now classified using state standards embodied in the Survey of California Vegetation. The classification for California vegetation communities is provided in Sawyer et al. (2009) *Manual of California Vegetation* (CDFWd, 2025).

Table F-1. Vegetation Communities Present in the Botanical Study and Survey Area

Vegetation Communities (Holland, 1986) and Land Cover Types	Acreage
Upland Herbaceous Dominated Vegetation Types	
Non-Native Grassland	55.5
Native Grassland	0.3
Valley Needlegrass Grassland	1.9
Valley Wildrye Grassland	0.1
Shrub-Dominated Vegetation Types	
Central Coast Riparian Scrub	0.3
Northern Coyote Brush Scrub	11.1
Northern Maritime Chaparral	2.1
Ruderal	0.1
Woodland and Forest Vegetation Types	
California Bay Forest	3.1
Coast Live Oak Woodland	64.8
Upland Redwood Forest	1.1
Urban Mix	7.9
Wetland Herbaceous Dominated Vegetation Types	
Freshwater Seep	0.1
Other Cover Types	
Construction Site	4.1
Park	3.3
Restoration Site	0.4

Vegetation Communities (Holland, 1986) and Land Cover Types	Acreage
Unpaved Roads	8.9
Urban	81.8
Total	**247.0**

Acreages reported are based on the botanical study and survey area (PG&E, 2024; PEA Section 5.4.1.1.2.1).

F.1.1. Vegetation Communities Classification

MCV (Sawyer et al., 2009) was used to identify sensitive natural communities (Table F-2, column 2). Nine of the 21 MCV-classified vegetation communities identified in the botanical study and survey area are considered sensitive natural communities (S1 through S3) by CDFW and are identified in bold in Table F-2. The locations of these sensitive natural communities within the botanical field survey area are depicted in Figure 3.4-3 in EIR Appendix A.

As part of the vegetation mapping effort, a comparison was made between the natural communities as mapped during the 2021 survey effort (Holland, MCV) and the CLN vegetation types. Table F-2 presents the vegetation communities and land cover types mapped in the botanical study and survey area using Holland (1986) for identification of sensitive plant communities (column 1), corresponding classifications per MCV (Sawyer et al., 2009) (column 2), and CLN 2.0 vegetation types (BAOSC, 2019) used for desktop review (column 3). Sensitive communities (S1 to S3) mapped according to MCV within the botanical survey area are identified with bold (column 2). Vegetation communities are shown on Figure 3.4-3.

Several CLN 2.0 vegetation types that are described and included on Figure 3.4-3 in EIR Appendix A are outside of the botanical study and survey area or no comparable community was mapped during the 2021 effort. Sensitive natural communities as designated by CDFW are discussed in EIR Section 3.4.1.1, shown on Figure 3.4-3 in EIR Appendix A, and listed in Table F-2 (column 2).

Table F-2. Vegetation Communities Classification/Mapping Comparison

California Vegetation Alliance (Holland 1986)	Manual of California Vegetation (MCV) Classifications (Sawyer et al. 2009, CDFW 2021a)	CLN 2.0 Vegetation (BSOSC 2019)
Non-Native Grassland (42200)	*Avena* spp. and *Bromus* spp. Herbaceous Semi-Natural Alliance (Wild Oats and Annual Bromes Grassland) (42.027.00) *Brassica nigra – Centaurea (melitensis, solstitialis)* Herbaceous Semi-Natural Alliance (Upland Mustards or Star-Thistle Fields) (42.011.00) *Elymus caput-medusae* Semi-Natural Herbaceous Alliance (Medusahead Grassland) (42.020.00) *Festuca perennis* Herbaceous Semi-Natural Herbaceous Alliance (Perennial Rye Grass Fields) (41.321.00)	Moderate Grasslands, Warm Grasslands
Native Grassland (Holland and Keil 1995)	***Elymus glaucus* Herbaceous Alliance (Blue Wildrye Prairie) (41.131.000) S3**	Moderate Grasslands, Warm Grasslands
Valley Needlegrass Grassland (42110)	***Stipa* spp. Herbaceous Alliance (Needle Grass Grassland) (41.140.00) S3**	Moderate Grasslands, Warm Grasslands
Valley Wildrye Grassland (42140)	***Elymus triticoides* Herbaceous Alliance (Creeping Ryegrass Turfs) (41.081.00) S3**	Moderate Grasslands, Warm Grasslands
Central Coast Riparian Scrub (63200)	***Salix lasiolepis* Shrubland Association (Arroyo Willow Thickets) (61.201.01) S3**	Riparian Mixed Hardwood

California Vegetation Alliance (Holland 1986)	Manual of California Vegetation (MCV) Classifications (Sawyer et al. 2009, CDFW 2021a)	CLN 2.0 Vegetation (BSOSC 2019)
Northern Coyote Brush Scrub (32110)	*Baccharis pilularis* Shrubland Alliance (Coyote Brush Scrub) (32.060.00)	Coyote Brush
Northern Maritime Chaparral (37C10)	***Arctostaphylos crustacea* Shrubland Alliance (Brittle Leaf Manzanita Chaparral) (37.308.00) S3** *Rubus (parviflorus, ursinus)* Shrubland Alliance (Berry Brambles) 63.901.00	--
Ruderal (Holland and Keil 1995)	*Genista monspessulana* Semi-Natural Shrubland Alliance (Broom Patches) (32.180.01)	--
California Bay Forest (81200)	***Umbellularia californica* Forest Alliance (California Bay Forest) (74.100.00) S3**	California Bay, Coastal Mixed Hardwood, Interior Mixed Hardwood
Coast Live Oak Woodland (71160)	*Quercus agrifolia* Woodland Alliance (Coast Live Oak Woodland) (71.060.00)	Coast Live Oak, Coastal Mixed Hardwood, Interior Mixed Hardwood
Upland Redwood Forest (82320)	***Sequoia sempervirens* Forest Alliance (Redwood Forest) (86.100.00) S3**	Redwood
Urban Mix (Holland and Keil 1995)	*Eucalyptus* spp. Woodland Semi-Natural Alliance (Eucalyptus Groves) (79.100.02) *Pinus radiata* Woodland Semi-Natural Alliance (Monterey Pine Plantations) (87.240.04)	Non-Native/Ornamental Conifer/Hardwood; Eucalyptus
Freshwater Seep (45400)	***Carex densa* Provisional Herbaceous Alliance (Dense Sedge Marshes) (45.165.00) S2?** ***Mimulus guttatus* Herbaceous Alliance (Common Monkey Flower Seep) (44.111.01) S3** *Juncus balticus* Herbaceous Alliance (Baltic Rush Marshes) (45.562.00)	--
Construction Site Park (not described)	Not Described	Urban/Developed (General)
Urban (Not Described)	Not Described	Urban/Developed (General); Non-Native/Ornamental Grass; Non-Native/Ornamental Conifer/Hardwood

Table F-3. CLN Vegetation Communities Present in the BSA

Vegetation Communities[a] and Land Cover Types	Acreage
Blue Oak	38.7
California Bay	9.3
Chamise	4.4
Coast Live Oak	571.0
Coastal Mixed Hardwood	31.3
Coyote Brush	4.4
Eucalyptus	199.3
Interior Mixed Hardwood	4.9
Moderate Grasslands	489.9

Vegetation Communities[a] and Land Cover Types	Acreage
Non-Native/Ornamental Conifer/Hardwood	59.8
Non-Native/Ornamental Grass	1.0
Redwood	38.8
Riparian Mixed Hardwood	4.9
Serpentine Conifer	0.2
Serpentine Hardwood	0.1
Unpaved Roads	8.9
Urban/Developed (General)	975.2
Warm Grasslands	34.9
Total	**2,477.0**

[a] CLN 2.0 (PG&E, 2024)
Acreages reported are based on the BSA.

F.1.2. Upland Herbaceous Vegetation Types

Four upland herbaceous vegetation types classified following Holland (1986) were observed; the majority is non-native grassland, with some native grassland, valley needle grass grassland, and valley wildrye grassland. These communities are found in Table F-2 (column 1). For ease of reference, associated MCV Classifications and CLN 2.0 Vegetation is listed after each description. Sensitive vegetation communities (S1 to S3 annotations) are also referenced to the in Table F-2 (column 2) in bold and on Figure 3.4-3 in EIR Appendix A.

Non-Native Grassland

Non-native grassland is dominated by a sparse to dense cover of non-native grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, that replaced native perennial grasslands as a result of human disturbance. However, where not completely outcompeted by weedy non-native plant species, scattered native wildflower species and native perennial grass species considered remnants of the original vegetation also may be common. Non-native grassland mostly occurs in the botanical study and survey area east of the San Leandro Creek canyon and at the staging areas in Sibley Volcanic Regional Preserve. Smaller polygons occur in a fragmented nature west of Manzanita Drive. Non-native grasslands readily intergrade with the understories of coast live oak woodland, northern coyote brush scrub, and urban mix communities in the botanical study and survey area. Some of the herbaceous species present in non-native grassland in the botanical study and survey area include soft chess *(Bromus hordeaceus)*, slender wild oats *(Avena barbata)*, wild oats *(A. fatua)*, Italian wildrye *(Festuca perennis)*, field madder *(Sherardia arvensis)*, dogtail grass *(Cynosurus echinatus)*, medusahead *(Elymus caput-medusae)*, rough cat's ear *(Hypochaeris radicata)*, yarrow *(Achillea millefolium)*, blue wildrye *(Elymus glaucus* subsp. *glaucus)*, purple needlegrass *(Stipa pulchra)*, Kellogg's yampah *(Perideridia kelloggii)*, wild radish *(Raphanus sativus)*, black mustard *(Brassica nigra)*, and yellow star-thistle *(Centaurea solstitialis)*, among others. While generally dominated by non-native species, areas with moderate native integrity are present throughout this community. Coyote brush *(Baccharis pilularis* subsp. *consanguinea)* is invading many areas of non-native grassland in the botanical study and survey area.

MCV Classifications:

- *Avena* spp. and *Bromus* spp. Herbaceous Semi-Natural Alliance (Wild Oats and Annual Bromes Grassland) (42.027.00)
- *Brassica nigra – Centaurea (melitensis, solstitialis)* Herbaceous Semi-Natural Alliance (Upland Mustards or Star-Thistle Fields) (42.011.00)

- *Elymus caput-medusae* Semi-Natural Herbaceous Alliance (Medusahead Grassland) (42.020.00)
- *Festuca perennis* Herbaceous Semi-Natural Herbaceous Alliance (Perennial Rye Grass Fields) (41.321.00)

CLN 2.0 Vegetation:

- Moderate Grasslands, Warm Grasslands

Native Grassland

Native grassland is restricted to the eastern portion of the botanical study and survey area, where it occurs near the staging area by the community of Wilder and on the east-facing slopes of Gudde Ridge. These areas are dominated by blue wildrye with other species present, including hayfield tarweed *(Hemizonia congesta* var. *luzulifolia)*, rough cat's ear, California poppy *(Eschscholzia californica)*, yarrow, bull thistle *(Cirsium vulgare)*, teasel *(Dipsacus sativus)*, and California plantain *(Plantago erecta)*.

The native grassland identified falls within the blue wildrye MCV alliance, which is a sensitive vegetation community with a rarity ranking of S3 (Sawyer et al., 2009).

MCV Classifications:

- *Elymus glaucus* Herbaceous Alliance (Blue Wildrye Prairie) (41.131.000) S3

CLN 2.0 Vegetation:

- Moderate Grasslands, Warm Grasslands

Valley Needlegrass Grassland

Valley needlegrass grassland is dominated by perennial, tussock-forming needlegrass species (*Stipa* spp.), with native and introduced annual species occurring in the areas between needlegrass tussocks. Within the botanical study and survey area, valley needlegrass grasslands occur in a patchy distribution throughout the larger matrix of non-native grassland. They tend to be impacted by non-native species but retain moderate to high levels of native integrity and a characteristic dominance by purple needlegrass and nodding needlegrass *(Stipa cernua)*. Dominant species include purple needlegrass and nodding needlegrass, with other herbaceous species present, including California melic *(Melica californica)*, California plantain, hayfield tarweed, slender tarweed *(Madia gracilis)*, California poppy, rose clover *(Trifolium hirtum)*, slender wild oats, and bellardia *(Bellardia trixago)*. Low amounts of shrub cover, including silver bush lupine *(Lupinus albifrons* var. *albifrons)* and coyote brush, were observed in this community in the botanical study and survey area.

The valley needle grass grassland identified in the field corresponds to the needle grass grassland as classified using MCV (second column in Table F-2) and is a sensitive vegetation community with a rarity ranking of S3 (Sawyer et al., 2009).

MCV Classifications:

- *Stipa* spp. Herbaceous Alliance (Needle Grass Grassland) (41.140.00) S3

CLN 2.0 Vegetation:

- Moderate Grasslands, Warm Grasslands

Valley Wildrye Grassland

Valley wildrye grassland is a dense sod prairie dominated by creeping wildrye *(Elymus triticoides)*. Within the botanical study and survey area, valley wildrye grassland is restricted to one occurrence just west of Moraga Substation on a gentle east-facing slope nestled against coast live oak woodland. The dominant species is creeping wildrye, with other species present in lower numbers, including Kellogg's yampah,

soaproot *(Chlorogalum pomeridianum* subsp. *pomeridianum)*, and sapling coast live oak *(Quercus agrifolia* var. *agrifolia)*. Very sparse cover of sapling coast live oak and poison oak were observed in this community.

This grassland corresponds to the creeping ryegrass turfs, which are a sensitive vegetation community with a rarity ranking of S3 (Sawyer et al., 2009).

MCV Classifications:

- *Elymus triticoides* Herbaceous Alliance (Creeping Ryegrass Turfs) (41.081.00) S3

CLN 2.0 Vegetation:

- Moderate Grasslands, Warm Grasslands

Shrub-Dominated Vegetation Types

Four shrub-dominated vegetation types were identified: central coast riparian scrub, northern coyote brush scrub, northern maritime chaparral, and ruderal scrub.

Central Coast Riparian Scrub

Central coast riparian scrub is a scrubby streamside thicket, varying from open to impenetrable, dominated by any of several willow species *(Salix* spp.*)* (Holland 1986). It is distributed along most perennial and many intermittent streams of the South Coast ranges. In the botanical study and survey area, this community is restricted to a mesic depression in Shepherd Canyon and an area where the access road to the staging area near Wilder crosses an ephemeral drainage. It is dominated by arroyo willow *(Salix lasiolepis)* in the shrub layer with poison oak present and low cover of California bay *(Umbellularia californica)*. The herbaceous layer was largely absent, although mugwort *(Artemisia douglasiana)*, tall flatsedge *(Cyperus eragrostis)*, Harding grass *(Phalaris aquatica)*, and small amounts of creeping wildrye are present at the edges of this community.

The central coast riparian scrub identified here corresponds to the MCV Arroyo Willow Thickets, which is a sensitive vegetation community with a rarity ranking of S3 (Sawyer et al. 2009).

MCV Classifications:

- *Salix lasiolepis* Shrubland Association (Arroyo Willow Thickets) (61.201.01) S3

CLN 2.0 Vegetation:

- Riparian Mixed Hardwood

Northern Coyote Brush Scrub

Northern coyote brush scrub is a cover type of northern coastal scrub based on the dominance of coyote brush (Holland 1986). This community comprises low shrubs, typically dense but with scattered grassy openings. Northern coyote brush scrub is found in the botanical study and survey area east of the San Leandro Creek canyon as well as at the staging areas at Sibley Volcanic Regional Preserve. It is dominated by coyote brush in the shrub layer with other shrubby species present, including poison oak, California sagebrush *(Artemisia californica)*, California coffeeberry *(Frangula californica* ssp. *californica)*, bush monkeyflower *(Diplacus aurantiacus)*, and French broom *(Genista monspessulana)*. The herbaceous layer varies from sparse to dense and includes California bee plant *(Scrophularia californica)*, climbing bedstraw *(Galium porrigens* var. *porrigens)*, California manroot *(Marah fabaceus)*, soaproot, ladies tobacco *(Pseudognaphalium californicum)*, common phacelia *(Phacelia distans)*, hoary mustard *(Hirschfeldia incana)*, and California broom *(Acmispon glaber* var. *glaber)*, among others. In some areas, it is co-dominant with California sagebrush and/or poison oak. Sapling coast live oak are often present in low numbers.

MCV Classification:

- *Baccharis pilularis* Shrubland Alliance (Coyote Brush Scrub) (32.060.00)

CLN 2.0 Vegetation:

- Coyote Brush

Northern Maritime Chaparral

Northern maritime chaparral is a fairly open chaparral that is dominated by several narrowly restricted manzanita *(Arctostaphylos* spp.*)* or ceanothus *(Ceanothus* spp.*)* species *(Holland 1986)*. Within the botanical study and survey area, northern maritime chaparral is uncommon and is found only on east-facing slopes immediately east of Manzanita Drive, where it often occurs as islands in the larger coast live oak woodland community. Where observed, it is dominated by brittle leaf manzanita *(Arctostaphylos crustacea* subsp. *crustacea)*, pallid manzanita *(A. pallida)*, California blackberry, oso berry *(Oemleria cerasiformis)*, and California huckleberry *(Vaccinium ovatum)*, with other native shrub species present, including low numbers of jim brush *(Ceanothus oliganthus* var. *sorediatus)*, coast silktassel *(Garrya elliptica)*, and red flowering currant *(Ribes sanguineum* var. *glutinosum)*. It varies in shrub density, with manzanita species, when present, often forming impenetrable thickets with essentially no herbaceous layer. Immediately under the power lines east of Manzanita Drive, the shrub layer is more open, lacks manzanita species, and has a more robust herbaceous layer. Evidence of tree removal was observed in this area, which may contribute to the persistence of this community. Emergent trees were present in low cover, often in the form of stump sprouts; coast live oak, California bay, and bluegum *(Eucalyptus globulus)* were observed encroaching on this community.

MCV Classifications:

Northern maritime chaparral within the botanical study and survey area is characterized as two MCV alliances:

- *Arctostaphylos crustacea* Shrubland Alliance (Brittle Leaf Manzanita Chaparral) (37.308.00) S3
- *Rubus (parviflorus, ursinus)* Shrubland Alliance (Berry Brambles) 63.901.00

All stands of pallid manzanita observed in the botanical study and survey area are included in the *Arctostaphylos pallida* Provisional Special Stands nested under the brittle leaf manzanita chaparral alliance. Brittle leaf manzanita chaparral is a sensitive vegetation community with a rarity ranking of S3 (Sawyer et al., 2009).

CLN 2.0 Vegetation:

- None

Ruderal

Ruderal communities comprise plants that thrive in waste areas, roadsides, or other disturbed sites near urban areas (Holland and Keil 1995). These communities can contain ornamental species that have escaped cultivation. It is not uncommon for most species in these communities to be introduced rather than native, although there may be remnant native species that intergrade with this vegetation community. Within the botanical study and survey area, ruderal communities were uncommon. Ruderal communities observed are dominated in the shrub layer by French broom with small amounts of coyote brush and poison oak present. The herbaceous layer consists of mostly non-native annual grass species and other forbs, including hedge parsley *(Torilis arvensis)*, ladies' tobacco, climbing bedstraw, and Pacific sanicle *(Sanicula crassicaulis)*. Emergent trees are often present in low cover. Where observed, these communities are invading grassland habitats and encroaching on adjacent coast live oak woodland and northern maritime chaparral communities.

MCV Classification:

- *Genista monspessulana* Semi-Natural Shrubland Alliance (Broom Patches) (32.180.01)

CLN 2.0 Vegetation:

- None

Woodland and Forest Vegetation Types

Four woodland and forest vegetation types were observed: California bay forest, coast live oak woodland, upland redwood forest, and urban mix.

California Bay Forest

As described by Holland (1986), this community is similar to mixed evergreen forest, but typically consists entirely of California bay, a broadleaved sclerophyllous tree that grows up to 98 feet tall. It often forms dense, wind-pruned stands less than 33 feet tall on exposed coastal slopes. Within the botanical study and survey area, California bay forest is present along the access roads leading to the community of Wilder, in the San Leandro Creek canyon bottom and banks, and in the Sausal Creek Canyon bottom and dominated by California bay in the overstory. The shrub layer is sparse and consists of snowberry *(Symphoricarpos albus* subsp. *laevigata)*, California hazelnut, California blackberry, poison oak, and English ivy *(Hedera helix)*. The herbaceous layer is similarly sparse and consists of sword fern *(Polystichum munitum)*, wood fern *(Dryopteris arguta)*, giant trillium *(Trillium chloropetalum)*, woodland madia *(Anisocarpus madioides)*, woodland brome *(Bromus laevipes)*, and California manroot. The stand in the Sausal Creek Canyon is heavily invaded by English ivy, which comprises almost the entirety of understory cover.

This community corresponds to MCV's California bay forest and is a sensitive vegetation community with a rarity ranking of S3 (Sawyer et al., 2009).

MCV Classification:

- *Umbellularia californica* Forest Alliance (California Bay Forest) (74.100.00) S3

CLN 2.0 Vegetation:

- California Bay, Coastal Mixed Hardwood, Interior Mixed Hardwood

Coast Live Oak Woodland

Coast live oak woodland is typically dominated by one tree species, coast live oak, which is evergreen and reaches 33 to 82 feet. The shrub layer is poorly developed, but may include toyon, gooseberry *(Ribes* spp.*)*, and blue elderberry. The herb component is continuous and dominated by non-native annual grasses. This community typically occurs on north-facing slopes and shaded ravines in the south and more exposed sites in the north. Coast live oak woodland is one of the most widespread communities in the botanical study and survey area, with larger polygons occurring east of Manzanita Drive and more fragmented polygons west of Manzanita Drive. Tree canopy is largely dominated by coast live oak, with California bay, California buckeye *(Aesculus californica)*, or other tree species often being co-dominant. Shrub layer varies from sparse to dense and includes poison oak, coyote brush, French broom, snowberry, and California hazelnut, among others. The herbaceous layer varies from dense to open and includes species such as Pacific sanicle, soaproot, wood fern, rough hedgenettle *(Stachys rigida* var. *quercetorum)*, hedge parsley, wood rush *(Luzula comosa* var. *comosa)*, blue wildrye, and a variety of non-native annual grasses. West of Manzanita Drive, the residential areas classified as urban generally occur within a larger matrix of coast live oak woodland but are characterized by heavy anthropogenic influences, including tree trimming, understory management, and landscaping.

MCV Classification:

- *Quercus agrifolia* Woodland Alliance (Coast Live Oak Woodland) (71.060.00)

CLN 2.0 Vegetation:

- Coast Live Oak, Coastal Mixed Hardwood, Interior Mixed Hardwood

Upland Redwood Forest

Holland (1986) describes upland redwood forest as a moderately dense forest dominated by coast redwood *(Sequoia sempervirens)* that are approximately 262 feet in height. Growth is often limited by drought in summer and fall. This community grows within reach of summer fogs, with inland and upper altitudinal ranges possibly limited by this factor. It occurs on shallow, well-drained soils, often on steep slopes subject to erosion. It is confined to north exposures and canyon bottoms near the interior and southern margins of the range and is often subject to infrequent and devastating fires. Upland redwood forest is present in the botanical study and survey area in Dimond Canyon and Shepherd Canyon. It is dominated by coast redwood in the tree canopy with California bay and madrone present in the secondary canopy. The shrub layer is largely absent and where present is made up of sapling coast redwood and California bay. The herbaceous layer is sparse and includes redwood sorrel *(Oxalis oregana)*, crimson woodsorrel *(Oxalis incarnata)*, panic veldt grass *(Ehrharta erecta)*, and sword fern. It is unclear if the upland redwood forest polygons in Shepherd Canyon are remnant native forest or historic plantings, but they retain aspects of native forest and are mapped as such here. In Dimond Canyon, outplantings of native herbaceous species, including redwood sorrel and alum root (*Heuchera micrantha*), were observed in upland redwood forest.

Upland redwood forest is a sensitive vegetation community with a rarity ranking of S3 (Sawyer et al., 2009).

MCV Classification:

- *Sequoia sempervirens* Forest Alliance (Redwood Forest) (86.100.00) S3

CLN 2.0 Vegetation:

- Redwood

Urban Mix

Urban mix is characterized as areas where non-native plants have either escaped or been ornamentally planted for uses such as windrows in areas around urban or residential developments (Holland and Keil 1995). In open areas surrounded by development, it is not uncommon to find mixtures of non-native and native vegetation. Common examples of non-native plants found in urban mix include eucalyptus species *(Eucalyptus* spp.*)*, Monterey cypress *(Hesperocyparis macrocarpa)*, Monterey pine *(Pinus radiata)*, and acacias *(Acacia* spp.*)*, along with many non-native shrubs, perennials, and ornamental vines. Within the botanical study and survey area, urban mix occurs along the ridge near Manzanita Drive, as well as in scattered polygons throughout Shepherd Canyon and Dimond Canyon. Most polygons are dominated by bluegum with Monterey pine, Monterey cypress, and acacia species present and often co-dominant. A monotypic stand of Monterey pine is located just south of Moraga Substation along the urban interface. The shrub layer varies from dense to open and consists of coyote brush, poison oak, snowberry, and French broom. The herbaceous layer is sparse to continuous and consists of mostly non-native species, although native species such as blue wildrye, soaproot, and Pacific sanicle are often present. Pallid manzanita occurs in the understory of urban mix in one location where the urban mix has encroached on northern maritime chaparral near The Hills Swim Club.

MCV Classification:

- *Eucalyptus spp.* Woodland Semi-Natural Alliance (Eucalyptus Groves) (79.100.02)
- *Pinus radiata* Woodland Semi-Natural Alliance (Monterey Pine Plantations) (87.240.04)

CLN 2.0 Vegetation:

- Non-Native/Ornamental Conifer/Hardwood; Eucalyptus

Additional Conservation Lands Network 2.0 Vegetation Types

Three CLN 2.0 vegetation types, blue oak, serpentine conifer, and serpentine hardwood, are mapped in the literature in the 1,000-foot buffer BSA, but none of these three vegetation types were found during the 2021 survey effort within the smaller botanical survey area. Blue oak vegetation type consists of dense to open, nearly pure stands of blue oak with a largely grassland understory. No blue oaks were observed during the 2021 survey effort. Serpentine conifer and serpentine hardwood are characterized by conifers and hardwood types (oaks and others), respectively, on serpentine rock. Because no serpentine habitats were observed during the Applicant's 2021 site visit, these vegetation types were not mapped in the botanical study and survey area.

F.1.3. Wetland Herbaceous Dominated Vegetation Types

A single wetland herbaceous vegetation type (*Carex densa* Provisional Herbaceous Alliance) was observed in the eastern portion of the botanical study and survey area: freshwater seeps, as shown on Figure 3.4-3 (Map 1) in EIR Appendix A.

Freshwater Seeps

As described in Holland (1986), freshwater seeps comprise mostly perennial herbs, namely sedges *(Carex* spp.*)* and grasses *(Poaceae)*, often forming total cover. This community generally occurs on permanently moist or wet soil around freshwater seeps that often are associated with grasslands or meadows. Although uncommon in the deserts, freshwater seeps are scattered through most regions of California, but are found most commonly in grassland habitats.

Freshwater seeps are restricted to four small polygons, all located in the eastern portion of the botanical study and survey area. They all occur as small islands within larger non-native grassland, coast live oak woodland, and northern coyote brush scrub communities. Characteristic species include dense sedge *(Carex densa)*, common monkeyflower *(Mimulus guttatus)*, Baltic rush *(Juncus balticus* subsp. *ater)*, Pacific rush *(Juncus effusus* subsp. *pacificus)*, rabbitsfoot grass *(Polypogon monspeliensis)*, Italian wildrye, and tall flatsedge. There is an overhanging tree layer present from adjacent oak woodland communities and encroaching coyote brush was present at two locations. Freshwater seeps observed in the botanical study and survey area generally were associated with springs and had saturated soil or standing water throughout the surveyed area.

Freshwater seeps within the botanical study and survey area are characterized as at least three MCV alliances: *Carex densa* Provisional Herbaceous Alliance (Dense Sedge Marshes), *Mimulus guttatus* Herbaceous Alliance (Common Monkey Flower Seep), and *Juncus balticus* Herbaceous Alliance (Baltic Rush Marshes). Dense sedge marshes are a sensitive vegetation community with a rarity ranking of S2?[1], and common monkey flower seeps are a sensitive vegetation community with a rarity ranking of S3 (Sawyer et al. 2009).

[1] A question mark (?) denotes an inexact numeric rank because there are insufficient samples over the full expected range of the type, but existing information points to this rank (NatureServe 2021).

MCV Classification:

- *Carex densa* Provisional Herbaceous Alliance (Dense Sedge Marshes) (45.165.00) S2?
- *Mimulus guttatus* Herbaceous Alliance (Common Monkey Flower Seep) (44.111.01) S3
- *Juncus balticus* Herbaceous Alliance (Baltic Rush Marshes) (45.562.00)

CLN 2.0 Vegetation:

- None

F.1.4. Other Land Cover Types

Five other land cover types were included for the Project: construction site, landscaped parks, restoration site, unpaved roads, and urban (PEA Appendix B1; PG&E, 2024). These land cover types are other, undescribed lands present in the study area but not included in Holland.

Construction Site

Within the botanical study and survey area, the area north of Pinehurst Road at Wilcox Staging Area in Sibley Botanic Regional Preserve is undergoing active construction by EBRPD. Activities observed include excavation, drainage restructuring, building construction, and storage of heavy machinery and construction supplies. This area is currently not providing any natural habitat and does not conform to any of the vegetation communities described previously; as such it is not included in any of them. The construction site is comparable to CLN 2.0 urban/developed (general) vegetation type.

Parks

Parks consist of landscaped recreation areas where sod dominates and picnic tables, restrooms, or other publicly accessible services are available. They may contain ruderal weeds but provide little to no habitat for special-status species. Within the botanical study and survey area, Shepherd Canyon Park, sports fields, and golf courses are classified as Parks. Parks are comparable to CLN 2.0 urban/developed (general) vegetation type.

Restoration Site

Three community-sponsored native plant restoration sites (two in Shepherd Canyon and one in Dimond Canyon) are dominated by native plant species and provide valuable ecosystem services for common wildlife. However, these areas do not provide habitat for special-status plant species because of their fill soils and garden-like nature. These landscaped restoration sites are comparable to CLN 2.0 urban/developed (general) vegetation type.

Unpaved Roads

Unpaved roads found within the BSA do not provide habitat for native vegetation and special-status species.

Urban

The urban landcover type is residential and commercial areas and paved streets and parking lots. In the botanical study and survey area, urban land types are dominant east of Manzanita Drive. The vegetation communities on residential properties may support native vegetation but are dominated by landscaped yards. Although coast live oak trees are prevalent in urban areas between Manzanita Drive and SR-13, they provide little to no natural habitat and were classified as urban in these locations. Urban areas are comparable to CLN 2.0 non-native/ornamental grass, non-native/ornamental conifer/hardwood, and urban/developed (general) vegetation types.

F.1.5. Sensitive Natural Communities

Natural communities with ranks of S1, S2, and S3 are considered sensitive natural communities to be addressed (CDFW 2021a). During the 2021 botanical surveys, a total of nine sensitive natural communities currently recognized by CDFW, corresponding to seven mapped vegetation communities, were observed in the botanical study and survey area. These communities are described in the previous subsections. These communities and their conservation status rank appear in Table F-2, shown in bold in the middle column. The locations of these communities are depicted in Figure 3.4-3 in EIR Appendix A.

F.2. Common Wildlife

Common wildlife species that were documented during the field surveys or have the potential to occur in the Project Area include CDFW Watch List species such as sharp-shinned hawk (*Accipiter striatus*), cackling goose (*Branta hutchinsii leucopareia*), merlin (*Falco columbarius*), California gull (*Larus californicus*), double-crested cormorant (*Nannopterum auritum*), and osprey (*Pandion haliaetus*); CDFW Special Animals such as obscure bumble bee (*Bombus caliginosus*), sandy beach tiger beetle (*Cicindela hirticollis gravida*), Antioch efferian robberfly (*Efferia antiochi*), Bridge's coast range shoulderband (*Helminthoglypta nickliniana bridgesi*), Lee's micro-blind harvestman (*Microcina leei*), Lum's micro-blind harvestman (*Microcina lumi*), Pacific walker (*Pomatiopsis californica*), mimic tryonia (*Tryonia imitator*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), Caspian tern (*Hydroprogne caspia*), black-crowned night heron (*Nycticorax nycticorax*), Berkeley kangaroo rat (*Dipodomys heermanni berkeleyensis*), silver-haired bat (*Lasionycteris noctiva-gans*), and hoary bat (*Lasiurus cinereus*). American peregrine falcon (*Falco peregrinus anatum*) was both federally and state delisted, is unlikely to nest in the BSA, but has a low to moderate potential to forage in the area.

F.3. Special-Status Plant Species

Pallid Manzanita (Arctostaphylos pallida)

Pallid manzanita is a perennial evergreen shrub federally listed as threatened under the FESA, and state-listed as endangered under the CESA, and it has a CRPR of 1B.1 (rare and seriously endangered in California). This species has a blooming period ranging from December through March. Pallid manzanita is strongly associated with siliceous shale substrates that are sometimes sandy or gravelly in broadleafed upland forest, closed-cone forest, chaparral, cismontane woodland, and coastal scrub. It is a California endemic known from Alameda and Contra Costa counties from 605 to 1,525 feet in elevation (CNPS, 2025).

One population of 35 individuals of pallid manzanita was observed within the botanical study and survey area during the 2021 botanical field survey. This population is part of a previously described CNDDB record dating from at least 1923 (Occurrence #4) (PG&E, 2024). The population includes four colonies near Manzanita Drive. Surrounding habitat is coast live oak woodland and northern maritime chaparral, with urban mix community species growing in the shrub layer.

California CNPS Rare Plant Rank 1 to 4 Species

Bent-flowered fiddleneck (Amsinckia lunaris)

Bent-flowered fiddleneck is an annual herb with a CRPR of 1B.2 that blooms from March to June and occurs in coastal bluff scrub, cismontane woodland, and valley and foothill grassland. It is a California endemic known from 10 to 1,640 feet in elevation (CNPS, 2025).

Bent-flowered fiddleneck was not observed in the botanical survey area during the appropriate blooming period in 2021. Flowering individuals were observed at a reference population in Briones Regional Park.

California androsace (Androsace elongata ssp. *acuta)*

California androsace is an annual herb with a CRPR of 4.2 (watch list) that blooms from March to June and occurs in coastal bluff scrub, cismontane woodland, and valley and foothill grassland. It occurs in California and elsewhere from 490 to 4,280 feet in elevation (CNPS, 2025).

California androsace was not observed in the botanical survey area during the appropriate blooming period in 2021. No reference populations of this species were observed.

Big-scale balsamroot (Balsamorhiza macrolepis)

Big-scale balsamroot is a perennial herb with a CRPR of 1B.2 that blooms from March to June and occurs in chaparral, cismontane woodland, and valley and foothill grassland, sometimes on serpentine soils. It is a California endemic known from 150 to 5,100 feet in elevation (CNPS, 2025).

Big-scale balsamroot was not observed in the botanical survey area during the appropriate blooming period in 2021. No reference populations of this species were observed.

Oakland star-tulip (Calochortus umbellatus)

Oakland star-tulip is a perennial bulbiferous herb with a CRPR of 4.2 (watch list). Its white or pale pink-lilac flowers bloom typically from March to May. Oakland star-tulip occurs in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland, often on serpentine substrates. It is a California endemic that occurs from 330 to 2,295 feet in elevation (CNPS, 2025).

During the 2021 survey, one population of 73 Oakland star-tulip individuals was observed within the study area. It is unknown if this population has previously been recorded as spatial distribution of CRPR List 4 species is not tracked by CNDDB. The population comprised one colony growing in an opening near two Project power line structures east of Mountain Boulevard near SR-13. It was observed growing in valley needlegrass grassland on the upper slopes of a steep west-facing slope and on the flat areas at the top of the slope. It was growing with California poppy, bedstraw *(Galium aparine)*, spring vetch *(Vicia sativa* subsp. *nigra)*, narrow leaved miner's lettuce *(Claytonia parviflora* subsp. *parviflora)*, California fuschia *(Epilobium canum* subsp. *canum)*, nodding needlegrass *(Stipa cernua)*, and many-stemmed gilia *(Gilia achilleifolia* subsp. *multicaulis)*, among others. There was no shrub or tree layer present.

Western leatherwood (Dirca occidentalis)

Western leatherwood is perennial deciduous shrub with a CRPR of 1B.2 that blooms from January through March, sometimes into April, and occurs in broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, and riparian woodland. It is California endemic that occurs from 80 to 1,395 feet in elevation (CNPS, 2025).

Western leatherwood was not observed in the botanical survey area during the appropriate blooming period in 2021. Budding and flowering individuals were observed at a reference population along Seaview Trailhead in Tilden Regional Park.

Jepson's button thistle (Eryngium jepsonii)

Jepson's button thistle, also known as Jepson's coyote-thistle, is a perennial herb with a CRPR of 1B.2 that blooms from April to August and occurs in clay soils of valley and foothill grassland and vernal pools. It is a California endemic that occurs from 10 to 958 feet in elevation (CNPS, 2025).

During the 2021 survey, one population of 69 individuals of Jepson's button thistle was observed within the botanical study and survey area. There is no record of this occurrence in the CNDDB. This population is located approximately 1.1 miles south of a known CNDDB record (Occurrence #7) which is a non-specific record with location given as Orinda Park (PG&E, 2024). The population identified during the survey

consists of a single colony located within 0.25 mile of Moraga Substation. Habitat is clay soils in non-native grassland and bare areas adjacent to northern coyote brush scrub. Associated species included coyote brush, poison hemlock *(Conium maculatum)*, Kellogg's yampah, Italian thistle, California blackberry, bristly ox-tongue *(Helminthotheca echioides)*, hedge parsley, and non-native annual grasses. The majority of the Jepson's button thistle were flowering at the time of the survey.

Fragrant fritillary (Fritillaria liliacea)

Fragrant fritillary is a perennial bulbiferous herb with a CRPR of 1B.2 that blooms from February through April and occurs in cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland, often on serpentine soils. It is California endemic that occurs from 10 to 1,345 feet in elevation (CNPS, 2025).

Fragrant fritillary was not observed in the botanical survey area during the appropriate blooming period in 2021. No reference populations of this species were observed.

Diablo helianthella (Helianthella castanea)

Diablo helianthella is a perennial herb with a CRPR of 1B.2 that blooms from March through June and occurs on Azonal soil, often in partial shade, and usually rocky microhabitats in broad-leafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. It is California endemic that occurs from 195 to 4,265 feet in elevation (CNPS, 2025).

Diablo helianthella was not observed in the botanical survey area during the appropriate blooming period in 2021. Budding and vegetative individuals were observed at a reference population in Briones Regional Park.

Santa Cruz tarplant (Holocarpha macradenia)

Santa Cruz tarplant is an annual herb with a CRPR of 1B.1 that blooms from June through October and occurs on sandy and often clay soils in coastal prairie, coastal scrub, and valley and foothill grassland. It is California endemic that occurs from 35 to 720 feet in elevation (CNPS, 2025).

Santa Cruz tarplant was not observed in the botanical survey area during the appropriate blooming period in 2021. No reference populations of this species were observed.

Bristly leptosiphon (Leptosiphon aureus)

Bristly leptosiphon is an annual herb with a CRPR of 4.2 (watch list) that blooms from April through July and occurs in chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland. It is California endemic that occurs from 180 to 4,920 feet in elevation (CNPS, 2025).

Bristly leptosiphon was not observed in the botanical survey area during the appropriate blooming period in 2021. No reference populations of this species were observed.

Oregon meconella (Meconella oregana)

Oregon meconella is an annual herb with a CRPR of 1B.1 that blooms from March through April and occurs in coastal prairie and coastal scrub. It is found in California and elsewhere from 820 to 2,035 feet in elevation (CNPS, 2025).

Oregon meconella was not observed in the botanical survey area during the appropriate blooming period in 2021. Flowering, budding, and vegetative individuals were observed at a reference population at Vollmer Peak.

Mt. Diablo cottonweed (Micropus amphibolus)

Mt. Diablo cottonweed is an annual herb with a CRPR of 3.2 (more information needed) that blooms from March through May and occurs on rocky substrate in broad-leafed upland forest, chaparral, cismontane

woodland, and valley and foothill grassland. It is California endemic that occurs from 150 to 2,705 feet in elevation (CNPS, 2025).

Mt. Diablo cottonweed was not observed in the botanical survey area during the appropriate blooming period in 2021. No reference populations of this species were observed.

Most beautiful jewelflower (Streptanthus albidus ssp. *peramoenus)*

Most beautiful jewelflower is an annual herb with a CRPR of 1B.1 that blooms from April through September, sometimes as early as March and as late as October, and occurs on serpentine soils in chaparral, cismontane woodland, and valley and foothill grassland. It is a California endemic that occurs from 310 to 3,280 feet in elevation (CNPS, 2025).

Most beautiful jewelflower was not observed in the botanical survey area during the appropriate blooming period in 2021. No reference populations of this species were observed.

Table F-4. Special-Status Plant Species with Potential to Occur in the BSA

Scientific Name/ Common Name	Status[a]			Habitat	Blooming Period	Potential for Occurrence within the BSA
	Federal	State	CNPS			
Amsinckia lunaris bent-flowered fiddleneck	-	-	1B.2	Cismontane woodland, and valley and foothill grassland.	March to June	**High**. Quality habitat exists throughout the BSA. There are several CNDDB occurrences within 5 miles of the BSA; the closest (Occurrence #8, 2007) is located approximately 0.13 mile south of the isolated staging areas. This species was not observed during the seasonally appropriate botanical surveys.
Androsace elongata subsp. *acuta* California androsace	-	-	4.2	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland.	March to June	**Moderate**. Quality habitat exists in areas of thin soils and exposed rock outcrops in the BSA. The nearest herbarium collection is from a 1902 Tracy specimen from the Berkeley Hills in Alameda County (Accession #UC35150). This species was not observed during the seasonally appropriate botanical surveys.
Arctostaphylos pallida pallid manzanita	FT	SE	1B.1	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub. Grows on uplifted marine terraces on siliceous shale or thin chert. May require fire.	December to June	**Present**. Four colonies were observed along and adjacent to Manzanita Drive and Huckleberry Botanic Regional Preserve during the seasonally appropriate botanical surveys. This occurrence is associated with multiple collections dating from at least 1923 (Occurrence #4; CDFW 2021b).
Balsamorhiza macrolepis big-scale balsamroot	-	-	1B.2	Chaparral, cismontane woodland, valley and foothill grassland.	March to June	**Low to Moderate**. Some quality habitat exists throughout the BSA. The closest CNDDB (Occurrence #2, 2002) is located approximately 8 miles southeast of the BSA. This species was not observed during the seasonally appropriate botanical surveys.

Scientific Name/ Common Name	Status[a] Federal	State	CNPS	Habitat	Blooming Period	Potential for Occurrence within the BSA
Calochortus umbellatus Oakland star-tulip			4.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland, often on serpentine substrates	March to May	**Present**. One population of 73 individuals found near SR-13.
Dirca occidentalis Western leatherwood	-	-	1B.2	Broadleafed upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian forest, and riparian woodland.	January to March (April)	**High**. Quality habitat exists throughout the BSA. A CNDDB occurrence (Occurrence #13, 2021) is located on the east-facing slopes to the east of Manzanita Drive in the Huckleberry Botanical Regional Preserve. However, this species was not observed during the seasonally appropriate botanical surveys.
Eryngium jepsonii Jepson's button thistle	-	-	1B.2	Valley and foothill grassland. Vernal pools.	April to August	**Present**. One colony was observed west of Moraga Substation during the seasonally appropriate botanical surveys. This occurrence represents a previously unrecorded population.
Fritillaria liliacea fragrant fritillary	-	-	1B.2	Coastal scrub, valley and foothill grassland, and coastal prairie. Often on serpentine. Various soils usually reported though clay and in grassland.	February to April	**High**. Quality habitat exists throughout the BSA. An undated, presumed extant CNDDB occurrence (Occurrence #66) overlaps the Project area. However, this species was not observed during the seasonally appropriate botanical surveys.
Heliathella castanea Diablo helianthella	-	-	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, and riparian woodland. Valley and foothill grassland.	March to June	**High**. Quality habitat exists throughout the BSA. There are several CNDDB occurrences within 5 miles of the BSA; the closest (Occurrence #102, 2014) located approximately 1.5 miles north of the Project. However, this species was not observed during the seasonally appropriate botanical surveys.
Holocarpha macradenia Santa Cruz tarplant	FT	SE	1B.1	Coastal prairie, coastal scrub, valley and foothill grassland.	June to October	**Low to Moderate**. Quality habitat exists throughout the BSA. There is a CNDDB occurrence within 10 miles of the BSA; the closest (Occurrence #28, 2009) is located approximately 8.5 miles north. However, this species was not observed during the seasonally appropriate botanical surveys.
Leptosiphon aureus bristly leptosiphon	-	-	4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland.	April to July	**Moderate**. Quality habitat exists in areas of thin soils and exposed rock outcrops in the BSA. The nearest record is from a population at Knowland Park in Oakland less than 5 miles from the BSA. However, this species was not observed during the seasonally appropriate botanical surveys.

Scientific Name/ Common Name	Status[a] Federal	State	CNPS	Habitat	Blooming Period	Potential for Occurrence within the BSA
Meconella oregana Oregon meconella	-	-	1B.1	Coastal prairie and coastal scrub. Open, moist places.	March to April	**Moderate**. Some suitable habitat exists in the BSA. A CNDDB occurrence (Occurrence #3, 2015) is located approximately 0.05 mile from the isolated staging areas. This species was not observed during the seasonally appropriate botanical surveys.
Micropus amphibolus Mt. Diablo cottonweed	-	-	3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland.	March to May	**Moderate**. Quality habitat exists in areas of thin soils and exposed rock outcrops in the BSA. The nearest herbarium collection is from a 1937 Nelson specimen from near Tunnel Road in Alameda County (Accession #UC1543173). However, this species was not observed during the seasonally appropriate botanical surveys.
Streptanthus albidus subsp. peramoenus most-beautiful jewelflower	-	-	1B.2	Valley and foothill grassland. Serpentine outcrops on ridges and slopes.	(March) April to September (October)	**High**. Quality habitat exists throughout the BSA. There are several CNDDB occurrences within 5 miles of the BSA; the closest (Occurrence #68, 2004) is located approximately 1 mile southeast of the Project. In addition, there is one unprocessed occurrence in the CNDDB from 2019, located 0.15 mile north of the Project footprint. However, this species was not observed during the seasonally appropriate botanical surveys.

Sources: CDFW, 2021b; CNPS, 2021; Lake, 2021; PG&E, 2024, USFWS, 2021

[a] Status designations are as follows:
FT = federally threatened
SE = state endangered

California Rare Plant Ranks:
1B Rare, Threatened, or Endangered in California and elsewhere
3 Plants about which more information is needed; necessary information to assign them to another rank or reject them is lacking
4 Limited distribution and moderately threatened in California

California Rare Plant Rank threat ranks:
0.1 Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
0.2 Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat)

F.4. Special Status Wildlife Species

Crotch's bumble bee (Bombus crotchii)

Crotch's bumble bee is a candidate for listing as endangered under the CESA. This invertebrate species occurs in grassland and scrub habitats with wildflower resources for foraging. Crotch's bumble bees nest underground and likely use, at least in part, old rodent burrows PG&E, 2024). Crotch's bumble bees can persist in semi-natural habitats surrounded by intensely human modified landscapes (Love, 2010). Crotch's bumble bee is commonly found in relatively warm and dry regions, including the inner Coast Range of California and margins of the Mojave Desert (PG&E, 2024).

Grassland habitat with floral resources throughout the BSA provides suitable habitat for Crotch's bumble bee. The Project footprint is within the current range of the species. Floral resources were documented

during the 2021 botanical surveys. The SBI wildlife assessment was conducted in December, outside of the appropriate season for identifying floral resources. There is one CNDDB record within 5 miles of the BSA that includes an individual photographed in Berkeley in 2015 (Occurrence #308). There are no current occurrence records for the BSA in the Xerces Bumble Bee Watch. This species is considered to have a moderate potential to occur.

Monarch butterfly (Danaus plexippus plexippus)

In December 2024, the USFWS proposed listing the monarch butterfly as a threatened species under the FESA, accompanied by critical habitat designation and protective regulations under section 4(d) of the FESA. Public comments were accepted on the proposal until March 12, 2025. The USFWS will then evaluate the comments and any additional information on the species and determine whether to list the monarch butterfly (PG&E, 2024).

Monarchs rely on milkweed for larval development while adults need nectar to fuel their migration. Each fall, last year's generation of adults migrates to overwintering sites, some in coastal California, that provide suitable microhabitat conditions, including protection from wind and freezing temperatures. Overwintering sites in coastal California include blue gum eucalyptus groves within mixed urban-farmland development (PG&E, 2024).

There are two presumed extant CNDDB occurrences approximately 5 miles west of the BSA. One (Occurrence #415) is at Berkeley Aquatic Park, the second (Occurrence #322) is next to the Oakland International Airport. There are 11 known overwintering sites in Alameda County and two in Contra Costa County (Pelton et al. 2016). None of the known overwintering sites are within the BSA – the two nearest overwintering sites are at Albany Hill, which is 7 miles to the northwest and Monarch Bay Golf Course, which is 9 miles to the southwest. These and other Bay Area overwintering sites are located close to the Bay and coast, and none are found as far inland as the Berkeley/Oakland Hills at the Project footprint. There is grassland habitat that could support milkweed and floral foraging and Moraga Substation could support native narrow leaf milkweed based on Calflora habitat prediction models for the species. No milkweed plants were observed during the botanical surveys conducted in 2021 [PEA Appendix B1; PG&E, 2024]). Eucalyptus trees were observed near the Shepherd Canyon LZ/SA and there is a grove near EBRPD McCosker staging area. The potential for occurrence for overwintering sites is low, as is the potential for breeding, although there is moderate potential for monarchs to pass through the area and use floral foraging resources.

Foothill yellow-legged frog (Rana boylii)

Federal listing status of the foothill yellow-legged frog (FYLF) varies by Distinct Population Segment (DPS); the Project is within the boundaries of the Central Coast DPS, where the frog is federally listed as threatened. At the state level, the frog's listing varies by clade; the Project is within the West/Central Coast clade, where the frog is state listed as endangered. FYLF occurs in Pacific river systems from Oregon to Southern California. This species is found in streams with shallow, flowing water, with at least some cobble-sized substrate. Egg masses are deposited on the downstream side of cobbles and boulders where slow-flowing shallow water levels exist, generally deposited between late March and early June. Eggs need a minimum of 15 weeks to develop before metamorphosis, which typically occurs between July and September. Aquatic and terrestrial insects are thought to be prey items of the foothill yellow-legged frogs. Foothill yellow-legged frogs stay close to their aquatic habitat, typically within 10 feet and use riparian corridors for movement but have been documented using upland habitats with an average distance of 234 feet from water (PG&E, 2024).

The BSA intersects multiple drainages that provide suitable habitat to support FYLF. However, this species has not been observed in recent decades. There are six CNDDB occurrences within 5 miles of the Project footprint and three within 2 miles; of these, only one record is presumed extant. The nearest extant record is from near the community of Wilder (Occurrence #6) in Moraga Creek, approximately 2,000 feet

southeast of the Wilder LZ/SA and overlaps with the access road in the Project footprint (Attachment B of the Wildlife Assessment Report [PEA Appendix B3; PG&E, 2024]). In 1997, two adults were observed in a plunge pool upstream of riparian habitat on private property. EBRPD biologists believe this observation may have been a misidentification (PG&E, 2024).

Suitable habitat is present in the BSA within Moraga Creek and unnamed tributaries near Moraga Substation within the upper portions of the San Leandro Creek Watershed. If a remnant population is present, the species could be using these creeks and adjacent moist uplands near Moraga Substation. Given the 1997 record is still considered extant despite controversy, there is a low to moderate potential for the species to occur in this area. No FYLFs were observed during the wildlife assessment.

California red-legged frog (Rana draytonii)

The California red-legged frog (CRLF) is listed as threatened under the FESA and is a CDFW SSC. Critical habitat was designated by USFWS in 2010. CRLF breeds in wetlands, lakes, ponds, and other still or slow-moving sources of water that remain inundated long enough for larvae to complete metamorphosis, which typically occurs from 11 to 20 weeks after hatching. During summer months, CRLF forage and disperse in uplands and are known to take refuge in cool, moist areas, including rodent burrows and soil crevices near aquatic habitats. Adult CRLF tend to be most active at night during wet weather, but they may move through upland areas at any time during the year. CRLF may disperse over 2 miles from breeding ponds but movement distances of up to 1 mile are more common. Dispersal can be straight line distances between aquatic habitat as well as along creeks and drainages. Dispersal habitat includes upland or riparian zones within one mile of occupied locations, which allows movement between sites. (PG&E, 2024).

The Project footprint intersects multiple drainages that are modeled as suitable breeding habitat by the BAHCP (Attachment B of the Wildlife Assessment Report [PEA Appendix B3; PG&E, 2024]). Modeled suitable breeding habitat is characterized as the riparian area and the actual wetted areas of the stream, creek, or drainage. PG&E used a conservative estimate of 300 feet on each side of the stream to delineate suitable breeding habitat in the BAHCP (PG&E, 2024).

There are eight presumed extant CNDDB occurrences within 5 miles of the Project footprint; two records that are within 1 mile are presumed extant. The nearest extant record is 0.5 mile northwest of the Wilder LZ/SA (Occurrence #226, 1997), occurring before the construction of the community of Wilder when two adults were observed in a culvert outlet pool below a siltation pond. A stormwater detention basin is now present nearby (0.5 mile north of Project footprint), which may provide suitable breeding habitat in wet years. Occurrence #8 (1940s) from Thornhill Pond is mapped in the CNDDB at the present location of the Montclair Swim Club. Marc Jennings provided an assessment of this occurrence record and its location as part of a nearby project and believes it was located along the present SR-13 corridor and was demolished during construction of the highway. Although it is likely that this pond and population have been extirpated, suitable breeding and upland habitat continues to be present in nearby drainages. The species has moderate to high potential to occur in the BSA. No CRLF were observed during the wildlife assessment.

Northwestern pond turtle (Actinemys marmorata)

Northwestern pond turtle is a candidate for listing under the FESA and is a CDFW SSC. This species occurs from Monterey Bay to Oregon and Washington. Northwestern pond turtles are thoroughly aquatic, preferring the quiet waters of ponds, reservoirs, and sluggish streams. The species occurs in a wide range of both permanent and intermittent aquatic environments. Pond turtles are semi-aquatic, with terrestrial and aquatic life history phases: eggs are laid in upland terrestrial habitat and hatchings, juveniles and adults can use both terrestrial and aquatic habitats. Terrestrial environments are used for nesting, overwintering and aestivation (warm season dormancy) basking, and movement/dispersal. Aquatic environments are required for breeding, feeding, overwintering and sheltering, and movement/dispersal. Northwestern pond turtles can move up to 1,300 feet or more to upland areas adjacent to watercourses

to deposit eggs and overwinter (Jennings and Hayes, 1994). Northwestern pond turtles typically become active in March and return to overwintering sites by October or November (PG&E, 2024).

Suitable habitat for Northwestern pond turtle includes California annual grassland, mixed riparian forest woodland, mixed willow riparian scrub, perennial freshwater marsh, pond, riverine stream, sycamore alluvial woodland, valley sink scrub, golf course/urban park, ruderal, and rural residential areas. In the winter, Northwestern pond turtles hibernate underwater in ponds or slow-moving pools or in adjacent woodlands by burying themselves in leaf litter, loose soils, or within burrows .

Although most of the Project's work areas are on ridgelines, access roads and the access to staging areas at Wilder and McCosker are within dispersal distance of suitable ponds. The Project footprint is adjacent to suitable aquatic habitat, breeding upland habitat, and winter refugia present in urban creeks in the Sausal Creek Watershed between Shepherd Canyon and Park Boulevard and in the San Leandro Creek Watershed east of Manzanita Drive and Skyline Boulevard in the BSA (Attachment B of the Wildlife Assessment Report [PEA Appendix B3; PG&E, 2024]). The potential for this species to occur in this portion of the Project footprint west of Manzanita Drive and Skyline Boulevard is considered moderate.

In the BSA east of Manzanita Drive/Skyline Boulevard, pools within tributary streams may provide suitable habitat that could support foraging and basking; however, there are no CNDDB records within this portion of the BSA or in these streams. There are two human-made aquatic features outside of the BSA that could provide suitable aquatic habitat which turtles could occupy, including a stormwater basin 0.64 mile to the northwest of the Wilder Landing Zone/Staging Area (LZ/SA) with riparian connectivity to the Project footprint and a pond on private property 0.4 mile southeast of the Fiddleneck LZ/SA. If turtles are occupying these resources, they could disperse into the Project footprint. The potential for this species to occur in this portion of the Project footprint is considered low.

No impacts are proposed directly within the creeks, and most of the Project work would occur on or near ridgelines away from aquatic habitat. However, portions of access roads and LZ/SAs surrounding uplands of mapped drainages could provide potential dispersal and breeding habitat for the species. The work areas near McCosker, Moraga Substation, and throughout the eastern edge of the Project are within dispersal distance of creeks. The access road from Wilder LZ/SA to Moraga Substation is adjacent to a creek that is near access roads and the LZ/SA. No Northwestern pond turtles were observed during the wildlife assessment.

Alameda whipsnake (Masticophis lateralis euryxanthus)

Alameda whipsnake is listed as threatened under the FESA and the CESA. This species uses a wide variety of habitats, including grassland, oak savanna, and woodland habitats, but is most frequently found in or near chaparral and scrub habitats. In areas of open woodland and grassland where cover such as rock outcrops, fallen logs, or trees structurally similar to brush habitat is present, the use of these habitats likely increases. Small rodent burrows and rock crevices are commonly used by Alameda whipsnake as retreat sites in both grassland and scrub habitats, brush piles, soil crevices and debris piles were also occasionally used. Alameda whipsnake are most active between April and late June with a period of highly reduced activity in the winter. A secondary peak in activity in the fall has been detected for dispersing young of the year (PG&E, 2024).

Much of the Project is mapped as movement habitat for Alameda whipsnake in the BAHCP (Attachment B of the Wildlife Assessment Report [PEA Appendix B3; PG&E, 2024]). Movement habitat is defined as grassland, oak savanna, and occasionally oak-bay woodland habitats greater than 500 feet from scrub. Scrub habitat is considered core habitat for Alameda whipsnake and all natural land cover types from 0 to 500 feet from scrub is perimeter core habitat.

The Project crosses directly through USFWS-designated Critical Habitat Unit 6 for the species (Figure 3.4-6 in EIR Appendix A) and suitable habitat, including core and perimeter habitat and the HCP movement

habitat, is found within and adjacent to the Project footprint east of Manzanita Drive/Skyline Boulevard (Attachment B of the Wildlife Assessment Report [PEA Appendix B3; PG&E, 2024]). Potentially suitable habitat to the west becomes highly fragmented and is only found in small patches around homes; individuals could move into the area through Shepherd Canyon where BAHCP-mapped movement habitat and both core and perimeter core habitat is present. There are no known occurrences along the alignment west of SR-13.

Because suitable habitat is present and extant CNDDB occurrences have been mapped adjacent to the Project footprint, there is a high potential for this species to occur. Alameda whipsnake is also considered to have a high potential to occur in areas of BAHCP-mapped habitat. This species was not observed during the wildlife assessment.

Cooper's Hawk (Accipiter cooperii)

Cooper's hawk is a CDFW WL Species. This species is associated with deciduous, mixed, and coniferous forests, and deciduous stands of riparian habitat in woodlands, riparian corridors, and along habitat edges. They feed on birds and small mammals, hunting in a variety of habitats. Cooper's hawks use mature trees with moderate to high crown depths and canopy cover for nesting, and will nest in urban areas, feeding on birds and small mammals found at backyard feeders (PG&E, 2024).

Suitable foraging and nesting habitat in woodlands is present within and adjacent to the Project footprint. The PG&E structures within the Project footprint provide suitable perching habitat. This species has a moderate potential to occur in the BSA.

Sharp-shinned Hawk (Accipiter striatus)

Sharp-shinned hawk is a CDFW WL Species. This species is found in forests and woodlands containing mature trees, including conifers, and preferring riparian habitats and north-facing slopes (ABB, 2025; CDFW, 2025c). For breeding, they prefer dense forest with closed canopies. Nests are constructed of sticks and placed under areas of dense canopy, typically near the top of a tall tree and preferably in a conifer. During the winter, they utilize more open habitats such as woodlands, forest edges, and suburban areas. Sharp-shinned hawks mostly pray on birds and will also feed on small mammals, insects, reptiles, and amphibians. Suitable foraging habitat during the breeding season is essentially the same used for nesting. During the winter, sharp-shinned hawks forage in openings and along edges of woodlands and forests and other ecotonal habitats (ABB, 2025; CDFW, 2025c).

Areas of dense forest within and adjacent to the Project footprint provide suitable breeding habitat, especially along creeks in Sausal Creek, San Leandro Creek, and San Pablo Creek. Suitable winter habitat is present within and adjacent to the Project footprint in the wooded community east of State Route 13 and the more open forest and woodland areas of the Berkeley Hills. The PG&E Structures within the Project footprint provide suitable perching habitat. This species has a moderate potential to occur in the BSA.

Grasshopper sparrow (Ammodramus savannarum)

Grasshopper sparrow is a CDFW SSC. This species is associated with grasslands characterized by short to moderately tall herbaceous vegetation, containing scattered shrubs used as singing perches (CDFW, 2025c; Shuford and Gardali, 2008). Hayfields and open pastures also provide suitable habitat. Patches of bare ground are an important habitat component for foraging on insects and other arthropods (ABB, 2025). Grasshopper sparrow nest on the ground in depressions concealed by overhanging grasses or forbs, constructing a domed nest from grasses (CDFW, 2025c; Shuford and Gardali, 2008).

Open habitats dominated by low-growing herbaceous species within and adjacent to the Project footprint in Sibley Preserve and the Berkeley Hills east of Pinehurst Road provide suitable nesting and foraging habitat. This species has a moderate potential to occur in the BSA.

Golden Eagle (Aquila chrysaetos)

Golden eagle is a CDFW Fully Protected Species and is protected under the Bald and Golden Eagle Protection Act. Alameda County supports a high density of nesting golden eagles. Habitat typically is rolling foothills, mountain areas, sage-juniper flats, or desert. Golden eagles breed from late January through August, constructing nests on cliffs, large trees, or electrical towers; they require open areas for foraging. There is a known nesting location in Sibley Preserve (PG&E, 2024). Grassland east of Manzanita Drive/Skyline Boulevard provides suitable foraging habitat. Woodlands in the area provide large trees and PG&E structures have structural components that could support nesting and suitable perching habitat. The species has high potential to occur in the BSA.

Long-eared owl (Asio otus)

Long-eared owl is a CDFW SSC. This species is primarily associated with wooded riparian habitats but may also be found in forest edge habitats, thickets, and dense stands of trees including those of live oak, conifer, and pinyon-juniper (CDFW, 2025c; Shuford and Gardali, 2008). Ideal habitat will consist of dense cover for nesting and roosting with adjacent open foraging habitat such as grasslands or shrublands. Long-eared owls typically nest in abandoned stick nests constructed by other birds, mainly other raptors or corvids. Occasionally, they choose to nest in old squirrel or woodrat nests, mistletoe brooms, and natural platforms of trees so long as there is dense vegetative cover for protection. They feed mostly on voles and other small mammals in addition to birds and other vertebrates (CDFW, 2025c; Shuford and Gardali, 2008).

Wooded riparian habitats along creeks in the Sausal Creek, San Leandro Creek, and San Pablo Creek watersheds and in forest or woodland edge habitats in the Berkeley Hills within and adjacent to the Project footprint provide suitable nesting habitat. The open habitats within and adjacent to the Project footprint in Sibley Preserve and the Berkeley Hills east of Pinehurst Road provide suitable foraging habitat. This species has a moderate potential to occur in the BSA.

Northern Harrier (Circus hudsonius)

Northern harrier is a CDFW SSC. This species is associated with open habitats such as grasslands, steppes, wetlands, meadows, rangelands, and agricultural fields (CDFW, 2025c; Shuford and Gardali, 2008). Scattered perches, such as shrubs, lone trees, utility structures, or fence posts are needed for hunting and plucking. Northern harrier roosts and nests on the ground in shrubby vegetation, often at the edges of marshes, wet meadows, lakes, rivers, or streams. They typically choose nesting sites in undisturbed areas containing patches of dense, often tall, vegetation. Northern harriers feed mostly on voles and other small mammals in addition to birds, frogs, small reptiles, crustaceans, insects, and rarely fish (CDFW, 2025c; Shuford and Gardali, 2008).

Open habitats dominated by low-growing herbaceous species within and adjacent to the Project footprint in Sibley Preserve and the Berkeley Hills east of Pinehurst Road provide suitable foraging habitat; limited habitat suitable for nesting may be present along creeks in the San Pablo Creek and San Leandro Creek watersheds lacking dense tree canopy. This species has a low to moderate potential to occur in the BSA.

White-tailed kite (Elanus leucurus)

White-tailed kite is a CDFW FP species. This species is associated with open habitats such as grasslands, savannahs, marshes, open woodlands, and agricultural fields with nearby wooded riparian corridors and stands of trees (CDFW, 2025c; ABB, 2025). Nests are typically placed in the upper third of tall trees, such as oaks or willows, that are isolated, in stands or on the edges of forests. White-tailed kite feeds mostly on voles and other small mammals in addition to birds, insects, reptiles, and amphibians (CDFW, 2025c; ABB, 2025).

Wooded riparian habitats along creeks in the Sausal Creek, San Leandro Creek, and San Pablo Creek watersheds and in forest or woodland edge habitats in the Berkeley Hills within and adjacent to the Project footprint provide suitable nesting habitat. The open habitats within and adjacent to the Project footprint in Sibley Preserve and the Berkeley Hills east of Pinehurst Road provide suitable foraging habitat. This species has a high potential to occur in the BSA.

Merlin (Falco columbarius)

Merlin is a CDFW WL species. This species occurs in California as a winter migrant and can be found along coastlines and in open grassland, savannah, open woodland, lake, wetland, edge, and early successional stage habitats (CDFW, 2025c; ABB, 2025). Merlin prey primarily on small birds, especially shorebirds, but will also take small mammals and insects. They are seldom found in heavily wooded areas but do require dense tree stands for cover, usually close to bodies of water (CDFW, 2025c; ABB, 2025).

The open woodland, tree stands, and grassland habitats within and adjacent to the Project footprint in the Sibley Preserve and Berkeley Hills east of Pinehurst Road provide suitable foraging habitat. This species has a high potential to occur in the BSA during the winter.

American Peregrine Falcon (Falco peregrinus anatum)

American peregrine falcon was delisted from the FESA in 1999 and from CESA in 2009 (CDFW, 2025a). In natural settings, this species nests on natural ledges of high cliffs in woodland, forest, desert, and coastal habitats (CDFW, 2025c; ABB, 2025). In anthropogenic settings, American peregrine falcons nest on ledges of human-made structures such as tall buildings, bridges, electrical transmission towers, and silos and may also nest on ledges in quarries. They prey on a variety of birds, especially rock pigeons when in urban settings. Ideal nesting sites are near wetlands, lakes, rivers, or other water features (CDFW, 2025c; ABB, 2025).

The transmission towers within the Project footprint may provide suitable nesting habitat depending upon their structural design characteristics. The open grassland and woodland habitats within and adjacent to the Project footprint in Sibley Preserve and the Berkeley Hills east of Pinehurst Road provide suitable foraging habitat as do the urbanized areas in the western BSA. This species has a moderate potential to occur in the BSA.

Bald Eagle (Haliaeetus leucocephalus)

Bald eagle is a CESA endangered and CDFW FP species that has been delisted from the ESA in 2007 (CDFW, 2025b). This species is associated with forested areas adjacent to lakes, reservoirs, and other large bodies of water containing abundant fish (CDFW, 2025c; ABB, 2025). Bald eagles nest in large, tall, sturdy trees with open branchwork and typically within 1 mile of their foraging habitat. Nest trees are often conifers that protrude above the forest canopy. Breeding in California mostly occurs in mountain and foothill forests of northern California but scattered nesting also occurs in the central coast range (CDFW, 2025b).

Areas of dense forest within and adjacent to the Project footprint provide suitable breeding habitat, especially along creeks in the Sausal Creek, San Leandro Creek, and San Pablo Creek watersheds. This species has a low to moderate potential to nest in the BSA.

Osprey (Pandion haliaetus)

Osprey is a CDFW WL species. This species is associated with bodies of water containing fish, including rivers, lakes, reservoirs, lagoons, swamps, and marshes (CDFW, 2025c; ABB, 2025). Osprey nest on natural features such as snags, treetops, or large branch crotches. They have also adapted well to the human development and will nest on utility poles, transmission line towers, and artificial nest platforms. Nest sites are usually within 12 miles of their foraging habitat (CDFW, 2025c; ABB, 2025).

Suitable nesting habitat is present within and adjacent to the Project footprint, including trees, transmission line towers, and utility poles. Foraging habitat within 12 miles of the Project footprint includes Lake Temescal, Lake Merritt, Lafayette Reservoir, Oakland Harbor and the San Francisco Bay, Lake Chabot, San Pablo Reservoir, and Briones Reservoir. This species has a moderate potential to nest in the BSA.

Yellow warbler (Setophaga petechia)

Yellow warbler is a CDFW SSC. This species is associated with open-canopy riparian woodlands and thickets containing cottonwoods, willows, alders, and other riparian trees and shrubs (CDFW, 2025c; ABB, 2025). They may also occur in the shrubby understory of mixed-conifer forests and xeric montane scrub. Yellow warblers nest in shrubs or small trees, commonly in vertical branch forks. They feed on insects and arthropods gleaned from foliage or captured from hovering over foliage (CDFW, 2025c; ABB, 2025).

Woodland and forest habitat along or near creeks in in the Sausal Creek, San Leandro Creek, and San Pablo Creek watersheds provide suitable habitat within and adjacent to the Project footprint. This species has a moderate potential to occur in the BSA.

Pallid Bat (Antrozous pallidus)

Pallid bat is a CDFW SSC and is ranked as "high priority" by WBWG. Day-roosting habitat for this species typically includes rocky outcrops, cliffs, large-diameter live and snag trees, and spacious crevices near open foraging habitats. Pallid bats may also roost in caves, mines, bridges, barns, porches, bat boxes, stone piles, rags, baseboards, rocks, and on the ground. Day roosts are generally warm and out of reach from ground predators and may consist of single- or mixed-sex colonies in crevices or man-made structures. Pallid bats have also been documented using culvert structures and bridges for roosting. The number of individuals in a day roost range from a few individuals to a couple of hundred individuals. There are five CNDDB records within 5 miles of the BSA. All are presumed extant (PG&E, 2024).

Suitable foraging and roosting habitat is present within and adjacent to Project work areas wherever appropriate habitat features are present, especially along creeks in Sausal Creek and San Leandro Creek watersheds. This species was determined to have a moderate potential to occur with the BSA. No pallid bats were observed during the wildlife assessment.

Northern California Ringtail (Bassariscus astutus raptor)

Northern California ringtail is a CDFW FP species. This species is associated with chaparral, oak woodlands, conifer forests, and riparian woodlands in areas containing rocky outcrops, canyons, or talus slopes (CDFW, 2025c). Habitats in proximity to permanent water are preferred. Ringtails require hollow trees, logs, snags, and cavities or other recesses in talus and rocky areas for dens. They feed on rodents, rabbits, birds and eggs, reptiles, invertebrates, fruits, nuts, and sometimes carrion (CDFW, 2025c).

Woodland and forest habitat along or near creeks in in the Sausal Creek, San Leandro Creek, and San Pablo Creek watersheds provide suitable habitat within and adjacent to the Project footprint. This species has a moderate potential to occur in the BSA.

Townsend's Big-eared Bat (Corynorhinus townsendii)

Townsend's big-eared bat is a CDFW SSC and is ranked as "high priority" by WBWG. This species is found throughout California, but the details of its distribution are not well known. Townsend's big-eared bats are found in all but subalpine and alpine habitats and may be found at any season throughout its range. The species requires cavity-type habitats such as caves, tree basal hollows, mines, tunnels, buildings, bridges, or other human-made structures for roosting. Townsend's big-eared bats may use separate sites for night, day, hibernation, or maternity roosts. Hibernation sites are generally cold, but not below freezing. Individuals may move within the hibernaculum to find suitable temperatures. Maternity roosts are found in generally warm sites. Day roosting colonies can range from a singly roosted male or female depending on season to groups of individuals into the hundreds during maternity season. There is one

historical CNDDB record (Occurrence #293, 1938) of the Townsend's big-eared bat occurring within 5 miles of the BSA that is possibly extirpated (PG&E, 2024).

Suitable foraging and roosting habitat is present within and adjacent to Project work areas wherever appropriate habitat features are present, especially along creeks in Sausal Creek and San Leandro Creek watersheds. This species was determined to have a moderate potential to occur with the BSA.

Western Red Bat (Lasiurus blossevillii)

Western red bat is a CDFW SSC and is ranked as "high priority" by WBWG. This species can be found throughout California's lower elevations, with many records concentrated in the Central Valley. Like some bats found in California, Western red bats make regional seasonal movements between their winter and maternity roosts. As a foliage roosting bat, the Western red bat is closely associated with well-developed riparian habitats but will also use other habitats (orchard trees, eucalyptus, tamarisk) that provide suitable dense clusters of leaves creating suitable roosting sites. Of note, this species has been observed roosting on the ground within leaf clutter. The Western red bat is a solitary roosting bat that will often have two pups per year. There are no CNDDB records within 5 miles of the BSA. The entire Project footprint is mapped by CDFW as potential habitat (PG&E, 2024).

Suitable foraging and roosting habitat is present within and adjacent to Project work areas wherever appropriate habitat features are present. CDFW considers the entire Project footprint as potential habitat. This species was determined to have a moderate potential to occur with the BSA.

San Francisco Dusky-footed Woodrat (Neotoma fuscipes annectens)

San Francisco dusky-footed woodrat subspecies is a CDFW SSC. This species is found in mixed coniferous forests, oak and riparian woodlands and chaparral habitats. It is most abundant in areas with dense shrub cover and has been shown to be strongly associated with densely vegetated, structurally complex habitats. The species constructs nests (middens) out of sticks and other debris. Nests are constructed on the ground, in rocky outcrops, or in trees and are often found in concentrations along riparian corridors. They may be reused by successive generations and some can grow to be 6 feet or more in height, while others are well hidden and easily overlooked (PG&E, 2024).

One San Francisco dusky-footed woodrat nest was observed within the Project footprint during the wildlife assessment within 0.25 mile west of Moraga Substation (Attachment B of the Wildlife Assessment Report [PEA Appendix B3; PG&E, 2024]). Five nests were observed in November 2023 by PG&E biologists in the same vicinity. Additionally, there are 12 unprocessed CNDDB occurrences documenting individuals, active nests, and middens in 2020 and 2021 at the McCosker Ranch (PG&E, 2024). Suitable habitat is present throughout much of the Project footprint, and the species is present.

Other Migratory Birds and Nesting Raptors

Suitable nesting habitat is present in the grassland, woodland, and shrub habitat as well as electrical structures and urban habitat throughout the BSA. All native bird species are protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (CFGC), which prohibit take of individuals (including active nests).

Table F-5. Special-Status Wildlife Species and Potential to Occur in Project Area

Scientific Name/ Common Name	Status[a]			Habitat	Special-Status Wildlife Species
	Federal	State	CNPS		
Invertebrates					
Bombus crotchii Crotch's bumble bee	--	SCE	--	Grassland and scrub habitats with wildflower foraging habitat; occurs at relatively warm and dry sites, including the inner Coast Range of California and margins of the Mojave Desert	**Moderate**. Suitable habitat is present within or adjacent to all work areas where grassland, scrub, and foraging habitat is present. The Project footprint is within the current range of the species (CDFW 2023c). Floral resources were documented during Nomad Ecology's 2021 botanical surveys although SBI surveys were conducted outside of appropriate season. There is one CNDDB record within 5 miles of the Project footprint that includes an individual photographed in Berkeley in 2015 (Occurrence #308). There are no current occurrence records within the BSA in the Xerces Bumble Bee Watch (Hatfield et al 2020).
Danaus plexippus plexippus Monarch butterfly	CE	--	--	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**Low (breeding, overwintering) to Moderate (foraging).** Potential suitable overwintering sites in eucalyptus trees are found within or adjacent to the Project footprint, including a eucalyptus grove near the Shepherd Canyon staging area and in the McCosker sub-area. There are two CNDDB occurrences approximately 5 miles to the west that are associated with established overwintering sites. One (Occurrence #415) is at Berkeley Aquatic Park, the second (Occurrence #322) is next to the Oakland International Airport. No known overwintering sites occur inland in the Berkeley/Oakland Hills area that overlaps with the Project footprint (Xerces 2024). Suitable grassland habitat may support nectar plants for foraging. No native host plants (native milkweed) were found during botanical surveys conducted by Nomad in 2021.
Amphibians					
Rana boylii (Central Coast DPS) Foothill yellow-legged frog	FT	ST	SSC	Perennial and ephemeral streams and rivers with rocky substrates and open, sunny banks in forests, chaparral, and woodlands. Utilize adjacent moist terrestrial habitats for foraging and refugia.	**Low to Moderate**. Potential for occurrence in western portion of Project footprint is low, eastern portion of the Project footprint is moderate. There are three CNDDB records within 5 miles of the BSA. *Western portion – east of Manzanita Drive and McCosker Sub-area, Attachment B Map B-5 through B-9* (Appendix B3 - Wildlife Assessment Report) Potentially suitable habitat is present in portions of the Project area east of Manzanita Drive and unnamed tributaries of San Leandro Creek west of Pinehurst Road. There are two extirpated occurrence records in this area (#4 and #5). The habitat is highly fragmented within the Project footprint

Scientific Name/ Common Name	Status[a] Federal	State	CNPS	Habitat	Special-Status Wildlife Species
					east of Manzanita Drive and the species has not been encountered in the McCosker sub-area by EBRPD during recent surveys (EBRPD 2018). Therefore, the potential for the species to be encountered within the portions of the Project that occur east of Manzanita Drive and upper San Leandro Creek tributaries near McCosker sub-area west of Pinehurst Road is low. *Eastern portion – Wilder LZ/SA and Moraga Substation, Attachment B Map B-2 and B-3* (Appendix B3 - Wildlife Assessment Report) Potentially suitable habitat is also present in portions of the Project footprint near Moraga Creek and unnamed tributary streams near Moraga Substation. The only extant record (Occurrence #6) is in Moraga Creek northwest of Moraga Substation. The potential for the species to be encountered in the portions of the Project footprint in and near the Wilder LZ/SA and Moraga Substation is moderate.
Rana draytonii California red-legged frog	FT	--	SSC	Lowlands and foothills in or near permanent sources of water (ponds, creeks, marshes) with emergent or dense riparian vegetation. Riparian, upland habitat, and small mammal burrows important for movement and refugia.	**Moderate to High**. Suitable habitat is present within and adjacent to the work areas where stream habitat is present, which includes all eight drainages within the Project footprint. BAHCP modeled breeding habitat is present throughout the Project footprint east of Park Boulevard The nearest extant CNDDB record (Occurrence #226, 1997) is 0.5 mile northwest of the isolated staging areas. A historical but presumed extant record (Occurrence #8, 1931) is also located within 1 mile of the Project footprint.
Reptiles					
Actinemys marmorata Northwestern pond turtle	FC	--	SSC	Permanent and intermittent freshwater aquatic habitats including rivers, streams, lakes, ponds, marshes, and vernal pools. Prefers habitats with abundant basking sites, underwater refugia, and standing or slow-moving water. Nesting sites are on sandy banks and bars or in fields or sunny spots up to a few hundred meters from water.	**Low to Moderate**. Suitable aquatic habitat, breeding upland habitat, and winter refugia is present in urban creeks in the Sausal Creek Watershed. In the San Leandro Creek Watershed east of Manzanita Drive/Skyline Boulevard; tributary streams may provide suitable habitat if pools are present. There are four CNDDB records within 2 miles. The closest, an undated CNDDB occurrence (Occurrence #63), is from Lake Temescal approximately 1.8 miles northwest of the Project footprint and is separated by dense urban development. A research grade iNaturalist record in 2022 from Montclair Park is located within 0.5 mile northwest of the Project footprint near Shepherd Canyon Park.

Scientific Name/ Common Name	Status[a]			Habitat	Special-Status Wildlife Species
	Federal	State	CNPS		
Masticophis lateralis euryxanthus Alameda whipsnake	FT	ST	--	Chaparral; northern coastal sage scrub; coastal sage; and grassland communities.	**High to Present**. Suitable core and perimeter habitat is present within and adjacent to the Project footprint. BAHCP modeled movement habitat is present within and adjacent to the Project footprint at all work locations east of SR-13 CNDDB Occurrence #33 (1990) overlaps with the Project footprint near the McCosker Creek Restoration Area. Two presumed extant CNDDB occurrences (#60, 2022; #95, 2006) are located within 500 feet and 2,500 feet of the Project footprint.
Birds					
Accipiter cooperii Cooper's hawk	--	--	WL	Associated with deciduous, mixed, and coniferous forest, and deciduous stands of riparian habitat in woodlands, riparian corridors, and along habitat edges, will nest in urban areas. They use mature trees with moderate to high crown-depths and canopy cover for nesting	**Moderate (foraging/nesting).** Suitable habitat is present within or adjacent to the Project footprint including trees for nesting and urban areas, riparian corridors and oak woodland forest. There are two CNDDB records within 5 miles of the Project footprint (Occurrence #84, 2003; Occurrence #115, 2006).
Accipiter striatus Sharp-shinned hawk	--	--	WL	Mature, dense conifer and deciduous forest interspersed with meadows, other openings, and riparian, at middle to higher elevations. Near water. Elevation range ~2,000-10,000 ft. Breeding resident in North Coast Ranges, Klamath, Cascade, Warner, and Sierra Nevada Mountains; Mount Pinos, San Jacinto, San Bernardino, and White Mountains.	**Moderate (foraging/nesting).** Suitable habitat present within and adjacent to the Project footprint along Sausal, Palo Seco, and Shepherd creeks and the forested and wooded areas of the Berkeley Hills. Several eBird observation records within the BSA, including: six along Sausal and Shepherd creeks; one just north of Park Boulevard; one along Shepherd Canyon Park; two in the Eastport area of the Berkeley Hills; two southeast of the Moraga Substation; and two in the Sibley Volcanic Regional Preserve. There are two iNaturalist observation records within Sibley Volcanic Regional Preserve.
Ammodramus savannarum Grasshopper sparrow	--	--	SSC	Generally prefer short to middle-height, moderately open grasslands with scattered shrubs. Generally absent from areas with extensive shrub cover, though some shrubbery is tolerated and perhaps preferred. Patchy bare ground has also been noted as an important habitat component. More likely to be found in large tracts of habitat. Sparrows	**Moderate (nesting, foraging).** Suitable habitat present within and adjacent to the Project footprint within the Berkeley Hills. eBird observation records at Skyline Gate Staging Area, Eastport Station Staging Area, west of the Moraga Substation, and in Sibley Volcanic Regional Preserve.

Scientific Name/ Common Name	Status[a] Federal	State	CNPS	Habitat	Special-Status Wildlife Species
				build nests domed with grasses and with a side entrance, typically well concealed in depressions at the base of grass clumps with the rim approximately level to the ground.	
Aquila chrysaetos Golden eagle	--	--	FP	Open mountains, foothills, plains, open country. Requires open terrain. In the north and west, found over tundra, prairie, rangeland, or desert; very wide-ranging in winter, more restricted to areas with good nest sites in summer.	**High (foraging/nesting).** Suitable habitat is present within or adjacent to the Project footprint including large trees for nesting and foraging habitat prevalent in all areas east of Manzanita Drive. There is one CNDDB record within 5 miles of the Project footprint (Occurrence # 43, 1993). This occurrence corresponds with a known golden eagle nest site has been used consistently since 2005 in Sibley Volcanic Regional Preserve (EBRPD 2018).
Asio otus Long-eared owl	--	--	SSC	Nests in conifer, oak, riparian, pinyon-juniper, and desert woodlands that are either open or are adjacent to grasslands, meadows, or shrublands. Key habitat components are some dense cover for nesting and roosting, suitable nest platforms, and open foraging areas.	**Moderate (foraging/nesting).** Suitable habitat present within or adjacent to the Project footprint along Sausal, Palo Seco, and Shepherd Creeks and in the Berkeley Hills. eBird and iNaturalist observation records within 9-quad area, specific locations either not displayed or obscured.
Circus hudsonius Northern harrier	--	--	SSC	Prefer open country, grasslands, steppes, wetlands, meadows, agriculture fields; roost and nest on ground in shrubby vegetation often at edge of marshes. Permanent resident of coastal areas and northeastern plateau. Breeds in along the coast, Central Valley, and Sierra Nevada; widespread winter migrant in suitable habitat.	**Low to Moderate (foraging/nesting).** Suitable foraging habitat present within and adjacent to the Project footprint in the open habitats of the eastern BSA in the Berkeley Hills. There are two eBird observation records within the western BSA between Interstate 580 and State Route 13, and one record within the eastern BSA at the Eastport Staging Area of Redwoods Regional Park.
Elanus leucurus White-tailed kite	--	--	FP	Typically nests at lower elevations in riparian trees, including oaks, willows, and cottonwoods; forages over open country. Throughout much of California in coastal and valley lowlands, rarely away from agricultural areas.	**High (foraging/nesting).** Suitable habitat is present within or adjacent to the Project footprint including trees for nesting and open habitats for foraging, particularly in the Berkeley Hills. There are several eBird and iNaturalist observation records within the BSA, including: three eBird observations within 600 feet of the Project footprint in the Berkeley Hills just northeast of Pinehurst Road; two eBird and six iNaturalist observa-

Scientific Name/ Common Name	Status[a]			Habitat	Special-Status Wildlife Species
	Federal	State	CNPS		
					tions in the Sibley Volcanic Regional Preserve; one eBird observation along Sausal Creek.
Falco columbarius Merlin	--	--	WL	Uncommon winter migrant. Frequents coastlines, open grasslands, savannahs, woodlands, lakes, wetlands, edges, early successional stages. Seldom found in heavily wooded areas or open deserts. Commonly feeds on shorebirds along shorelines in winter. Occurs most of the western half of the state below 3,900 ft. elev.; rare winter migrant in the Mojave Desert; few records from Channel Islands.	**Not likely to occur (nesting).** BSA is outside of breeding range. **High (foraging).** Suitable foraging habitat present within and adjacent to the Project footprint along Sausal, Palo Seco, and Shepherd Creeks, and the Berkeley Hills. There are several eBird observation records within the BSA, including: one along Sausal Creek; one north of Park Boulevard; one along Shepherd Creek; and one within Sibley Volcanic Regional Preserve.
Falco peregrinus anatum American peregrine falcon	DL	DL	--	Nests and roosts on protected ledges of high cliffs, buildings, and bridges, usually adjacent to lakes, rivers, or marshes that support abundant avian prey. Known year-round along the coast north of Santa Barbara, in the Sierra Nevada, and in other mountains of northern California; found throughout the Central Valley in winter.	**Moderate (nesting, foraging)**. Transmission towers within the Project footprint provide potentially suitable nesting habitat depending on their design. Suitable foraging habitat present within and adjacent to the Project footprint, particularly in the urbanized areas of the western BSA and the open habitats of the eastern BSA in the Berkeley Hills. There is one CNDDB record at an undisclosed location within the Oakland East quadrangle of a nest in/on an urban structure (Occurrence # 54, 2016). There are several eBird observation records within the BSA, including: one just west of Park Boulevard, south of Trestle Glen Road; two south of Lincoln Avenue, west of State Route 13; and one in the Sibley Volcanic Regional Preserve.
Haliaeetus leucocephalus Bald eagle	DL	SE	FP	Large trees near (typically within 1 mile) lakes, reservoirs, and large rivers with abundant prey. Wintering birds most often near large concentrations of waterfowl or fish.	**Not likely to occur (foraging).** BSA lacks suitable foraging habitat. **Low to Moderate (nesting).** BSA contains suitable tree nesting habitat within 3 miles of suitable foraging habitat (i.e., Lake Temescal, Lake Merritt, Lafayette Reservoir, Oakland Harbor) that could potentially support nesting. Nesting documented in CNDDB within 10 miles at San Pablo Reservoir, Chuck Corica Golf Complex, and Lake Chabot. There are several eBird and iNaturalist observation records within the BSA, including along Park Boulevard between State Route 13 and Interstate 580, Manzanita Drive and the Eastport Staging Area.

Scientific Name/ Common Name	Status[a]			Habitat	Special-Status Wildlife Species
	Federal	State	CNPS		
Pandion haliaetus Osprey	--	--	WL	Any expanse of fish-filled water, including rivers, lakes, reservoirs, lagoons, swamps, and marshes. Nest sites are typically within ~12 miles of foraging habitat, in open surroundings for easy approach, usually on snags, dead-top trees, or crotches between large branches and trunks; sometimes on cliffs or human-built platforms. Breeds in northern California from Cascade Ranges south to Lake Tahoe and along the coast south to Marin County.	**Not likely to occur (foraging).** BSA lacks suitable foraging habitat. **Moderate (nesting).** BSA contains suitable habitat (i.e., trees, utility poles, transmission towers) within 12 miles of suitable foraging habitat (i.e., Lake Temescal, Lake Merritt, Lafayette Reservoir, Oakland Harbor and the San Francisco Bay, Lake Chabot, San Pablo Reservoir, Briones Reservoir) that could potentially support nesting. Several eBird observation records within the BSA, including: one along Sausal Creek; one along Shepherd Creek; on in Sibley Volcanic Regional Preserve; and one south of Lincoln Avenue and west of State Route 13.
Setophaga petechia Yellow warbler	--	--	SSC	Primarily in willows, riparian thickets, and riparian trees such as cottonwood, sycamore, ash, and alder, especially near water, but also xeric montane shrub fields and shrubby understory of mixed-conifer forest. Breeds along Pacific coast from Alaska and Canada south to northern Baja California.	**Moderate (foraging/nesting).** Suitable habitat is present within and adjacent to the Project footprint along Palo Seco and Sausal creeks west of SR-13, Shepherd Creek east of SR-13, and in the forested areas of the Berkeley Hills. There are several eBird observation records within BSA, including: four along Sausal and Shepherd creeks; one just north of Park Boulevard; one in Sibley Volcanic Regional Preserve; and one north of Lincoln Avenue, west of SR-13. One iNaturalist observation record is south of Joaquin Miller Road and east of State Route 13.
Mammals					
Antrozous pallidus Pallid bat	--	--	SSC	Low elevation arid or semi-arid open areas near water, rocky outcrops, and cliffs. Breeds and roosts in crevices in caves, mines, and cavities.	**Moderate**. Suitable roosting and foraging habitat is present within or adjacent to the Project footprint wherever trees and structures are present to support roosting, especially along creeks in the Sausal Creek and San Leandro Creek watersheds. There are five CNDDB records within 5 miles of the Project footprint.
Bassariscus astutus raptor Northern California ringtail	--	--	FP	Rocky outcrops, canyons, or talus slopes of chaparral, oak woodlands, conifer forests, and especially riparian habitats for the abundant prey. From sea level up to 9,500 ft. (2,900 m) but most common below 4,600 ft. Dens in rock recesses, logs, tree hollows, and man-made enclosures.	**Moderate.** Suitable habitat present within and adjacent to the Project footprint, primarily within wooded and forested areas of the Berkeley Hills; limited and marginal habitat present along Sausal, Palo Seco, and Shepherd Creeks. No observation records within or in proximity to BSA. Wooded/forested habitats in the Berkeley Hills are mapped as either patchy or core habitat in the CDFW California Bay Area Linkage Network Connectivity Modeling.

Scientific Name/ Common Name	Status[a]			Habitat	Special-Status Wildlife Species
	Federal	State	CNPS		
Corynorhinus townsendii Townsend's big-eared bat	--	--	SSC	Mesic habitats, forages around trees and brush along habitat edges. Breeds and roosts in caves, mines, tunnels, cavities or buildings.	**Moderate**. Suitable roosting and foraging habitat is present within or adjacent to the Project footprint wherever trees and structures are present to support roosting, especially along creeks in the Sausal Creek and San Leandro Creek watersheds. There is one historical CNDDB record (Occurrence #293, 1938) within 5 miles but is possibly extirpated.
Lasiurus blossevillii Western red bat	--	--	SSC	Prefers edges or habitat mosaics that have trees for roosting and open areas for foraging. Roost sites often are in edge habitats adjacent to streams, fields, or urban areas. Requires water.	**Moderate**. Suitable roosting and foraging habitat is present within or adjacent to the Project footprint. There are no CNDDB records within 5 miles. The majority of the Project work areas is within CDFW predicted habitat (CDFW 2021c).
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	--	--	SSC	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	**Present**. Suitable habitat is present within or adjacent to the Project footprint. Nests were observed adjacent to the Project footprint during the wildlife assessment and during a November 2023 site visit. There are 12 unprocessed CNDDB occurrences documenting individuals, active nests and observed nest structures in 2020 and 2021 at the McCosker Creek Restoration Area.

Sources: ABB 2025; CDFW 2023c; PG&E, 2024; Shuford and Gardali 2008; USFWS 2023.

[a] Status designations are as follows:

Federal status:
FT = Listed as threatened under Endangered Species Act
FC = Candidate for listing under Endangered Species Act
DL = Delisted from the Endangered Species Act

State Status:
SE = Listed as endangered under the California Endangered Species Act
ST = Listed as threatened under the California Endangered Species Act
SCE = Candidate for listing as endangered under the California Endangered Species Act
WL = Watch List
AHCP = PG&E Bay Area O&M Habitat Conservation Plan
DPS = Distinct Population Segment

CDFW Status:
SSC = Species of Special Concern
FP = Fully Protected

F.5. Protective Measures from BAHCP, O&M ITP, and O&M ITP EIR

As described in EIR Section 3.4, the Project falls entirely within the coverage area for the BAHCP. PG&E APMs include measures from the BAHCP, O&M ITP, and O&M ITP EIR, which include the following:

- BAHCP Field Protocols (FPs) – FPs are PG&E general measures designed to avoid or minimize potential impacts on biological resources and covered species.
- BAHCP Avoidance and Minimization Measures (AMMs) – AMMs are measures utilized by PG&E to avoid and minimize impacts on covered species and habitat resulting from covered activities. These measures are specific to hot zones (the Project does not overlap any hot zones) and covered wildlife and plant species.
- Bay Area Operations & Maintenance (O&M) Project Incidental Take Permit (ITP) – CDFW ITP for the BAHCP. The ITP includes General Provisions as Conditions of Approval, which are measures that apply to all Covered Activities within the BAHCP, including areas used for vehicle, aircraft ingress and egress, staging and parking, and noise and vibration generating activities that may or will cause take. These measures are located within Section IX of the CDFW ITP.
- Bay Area O&M ITP Final Environmental Impact Report (FEIR) – CDFW directed preparation of an EIR in conformance with CEQA and CEQA guidelines for PG&E's covered activities for which CDFW is issuing an ITP. The O&M ITP EIR included Applicant Proposed Measures and Mitigation Measures.

PG&E must implement relevant measures from the BAHCP and ITP for covered species CRLF (BAHCP) and Alameda whipsnake (BAHCP and ITP), relevant general measures from the BAHCP and the ITP, relevant APMs from the ITP FEIR concerning other special-status and non-covered species, and has committed to proposed Project APMs. These measures and APMs are presented in Tables F-6 through F-9. Implementation of these APMs is considered part of the proposed Project. The numbering of the measures as presented in the BAHCP, ITP, and ITP FEIR has been retained for ease of reference. Refer to PEA Appendix B6 for species-specific buffers for nesting birds (ITP FEIR APM BIO 2) (PG&E, 2024).

Table F-6. Relevant Field Protocols from the BAHCP

Measure No.	Text
FP-01	Hold annual training on habitat conservation plan requirements for employees and contractors performing covered activities in the HCP Plan Area that are applicable to their job duties and work.
FP-02	Park vehicles and equipment on pavement, existing roads, or other disturbed or designated areas (barren, gravel, compacted dirt).
FP-03	Park vehicles and equipment on pavement, existing roads, or other disturbed or designated areas (barren, gravel, compacted dirt).
FP-04	Locate off-road access routes and work sites to minimize impacts on plants, shrubs, and trees, small mammal burrows, and unique natural features (e.g., rock outcrops).
FP-05	Notify a conservation landowner at least 2 business days prior to conducting covered activities on protected lands (state and federally owned wildlife areas, ecological reserves, or conservation areas); more notice will be provided if possible or if required by other permits. If the work is an emergency, as defined in PG&E's Utility Procedure ENV-8003P-01, PG&E will notify the conservation landowner within 48 hours after initiating emergency work. While this notification is intended only to inform the conservation landowner, PG&E will attempt to work with the conservation landowner to address landowner concerns.
FP-06	Minimize potential for covered species to seek refuge or shelter in pipes and culverts. Inspect pipes and culverts of diameter wide enough to be entered by a covered species that could inhabit the area where pipes are stored for wildlife species prior to moving pipes and culverts. Immediately contact a biologist if a covered species is suspected or discovered.

Measure No.	Text
FP-07	Vehicle speeds on unpaved roads will not exceed 15 miles per hour [mph].
FP-08	Prohibit trash dumping, firearms, open fires (such as barbecues), hunting, and pets (except for safety in remote locations) at work sites.
FP-09	During fire season in designated State Responsibility Areas, equip all motorized equipment with federally approved or state-approved spark arrestors. Use a backpack pump filled with water and a shovel and fire-resistant mats and/or windscreens when welding. During fire "red flag" conditions, as determined by the California Department of Forestry and Fire Protection, curtail welding. Each fuel truck will carry a large fire extinguisher with a minimum rating of 40 B:C. Clear parking and storage areas of all flammable materials.
FP-10	Minimize the activity footprint and minimize the amount of time spent at a work location to reduce the potential for take of species.
FP-11	Utilize standard erosion and sediment control BMPs (pursuant to the most current version of PG&E's Stormwater Field Manual for Construction Best Management Practices) to prevent construction site runoff into waterways.
FP-12	Stockpile soil within established work area boundaries and locate stockpiles so as not to enter water bodies, stormwater inlets, other standing bodies of water. Cover stockpiled soil prior to precipitation events.
FP-13	Fit open trenches or steep-walled holes with escape ramps of plywood boards or sloped earthen ramps at each end if left open overnight. Field crews will search open trenches or steep-walled holes every morning prior to initiating daily activities to ensure wildlife are not trapped. If any wildlife are found, a biologist will be notified and will relocate the species to adjacent habitat or the species will be allowed to naturally disperse, as determined by a biologist.
FP-14	If the covered activity disturbs 0.1 acre or more of habitat for a covered species in grasslands, the field crew will revegetate the area with a commercial weed-free seed mix.
FP-15	Prohibit vehicular and equipment refueling 250 feet from the edge of vernal pools and 100 feet from the edge of other wetlands, streams, or waterways. If refueling must be conducted closer to wetlands, construct a secondary containment area subject to review by an environmental field specialist and/or biologist. Maintain spill prevention and cleanup equipment in refueling areas.
FP-16	Maintain a buffer of 250 feet from the edge of vernal pools and 50 feet from the edge of wetlands, ponds, or riparian areas. If maintaining the buffer is not possible because the areas are either in or adjacent to facilities, the field crew will implement other measures as prescribed by the land planner, biologist, or HCP administrator to minimize impacts by flagging access, requiring foot access, restricting work until dry season, or requiring a biological monitor during the activity.
FP-17	Directionally fell trees away from an exclusion zone[2] if an exclusion zone has been defined. If this is not possible, remove the tree in sections. Avoid damage to adjacent trees to the extent possible. Avoid removal of snags and conifers with basal hollows, crown deformities, and/or limbs over 6 inches in diameter.
FP-18	Nests with eggs and/or chicks will be avoided. Contact a biologist, land planner, or the Avian Protection Program manager for further guidance.

[2] Per the BAHCP, an exclusion zone is an area marked with fencing, signage, stakes, or flagging. Exclusion zones are "do not enter" areas, except as instructed by a biologist or the BAHCP Administrator. The exclusion zone distance is a guideline that may be modified by the biologist, based on site-specific conditions (including, but not limited to, habituation by the species or background disturbance levels) (refer also to ITP FEIR APM BIO-7, Table 5.4-12).

Table F-7. Relevant Species-specific Avoidance and Minimization Measures from the BAHCP

Measure No.	Text
AMM Wetland-2	Identify wetlands, ponds, and riparian areas and establish buffers. Maintain a buffer of 50 feet around wetlands, ponds, and riparian areas. If maintaining the buffer is not possible because the areas are either in or adjacent to facilities, the field crew will implement other measures as prescribed by the biologist or HCP administrator to minimize impacts. These measures include flagging access, requiring foot access, restricting work until the dry season, requiring a biological monitor during the activity, or excavating burrows in ROWs where trenching will occur. Activities must maintain the downstream hydrology to the wetland, pond, or riparian area. Additional minimization measures may be implemented with prior concurrence from USFWS.
AMM Plant-01	No herbicides will be used for vegetation management, pole clearing, or any other purpose within 100 feet of an MBZ (except vegetation management's direct application to cut stumps when greater than 25 feet from an MBZ and in conformance with applicable pesticide regulations).
AMM Plant-02	Heavy equipment shall remain on access roads or other previously disturbed areas unless otherwise prescribed by a land planner, biologist, or HCP administrator.
AMM Plant-03[3]	Stockpile separately the upper 4 inches of topsoil during excavations associated with covered activities. Stockpiles topsoil will be used to restore the disturbed ROW.
AMM Plant-04	When covered activities greater than 0.1 acre in size within a MBZ will have direct impacts on covered species, work with the crew to place flagging, fencing, or other physical exclusion barriers to minimize disturbances. If the work will directly impact covered plant species, implement AMMs Plant 05, 06, 07, and 08.
AMM Plant-05	If a covered plant species is present and it cannot be avoided, PG&E will salvage plant material (i.e., seeds, cuttings, whole plants) and prepare a restoration plan that details the handling, storage, propagation, or reintroduction to suitable and appropriate habitat subject to USFWS review and approval.
AMM Plant-06	If a covered annual plant species is present and it cannot be avoided, conduct covered activities after seeds have matured to the extent possible
AMM Plant-07	If a covered perennial plant species is present and it cannot be avoided, conduct covered activities after seeds have matured to the extent possible. Minimize disturbance to the below-ground portions of the plants (e.g., roots, bulbs, tubers).
AMM Plant-08	PG&E will prune shrubs in a manner that promotes resprouting. If permanent impacts are unavoidable, establish new individuals by planting seedlings or from cuttings in adjacent suitable habitat. PG&E will implement BMPs, including vehicle, equipment, and personnel hygiene protocols; procedures for conducting activities in infected areas; and timing restrictions that avoid working when soils are moist and the likelihood of spreading Phytophthora cinnamomi is greatest.

Table F-8. Relevant CDFW Measures from the Bay Area O&M ITP

Measure No.	Text
General Provisions	
5.3	Biological Monitor Authority. To ensure compliance with the Conditions of Approval of this ITP, all Designated Biologists and General Biological Monitors shall immediately stop any activity, when safe to do so, that does not comply with this ITP and/or order any reasonable measure to avoid the unauthorized take of an individual of the Covered Species. PG&E shall provide unfettered access to

[3] BAHCP AMM Plant-03 applies specifically to annual plant species: Sonoma sunshine, Marin dwarf-flax, Burke's goldfields, Contra Costa goldfields, Sebastopol meadowfoam, white-rayed pentachaeta, and Metcalf Canyon jewelflower. None of these BAHCP covered annual species were observed during the 2021 botanical surveys.

Measure No.	Text
	each Work Area and otherwise facilitate the Designated Biologists and General Biological Monitors in the performance of his/her duties. If a Designated Biologist or General Biological Monitor are either unable to comply with the ITP or prevented from performing required ITP compliance, then they shall notify the CDFW Representative immediately. PG&E shall not enter into any agreement or contract of any kind, including but not limited to non-disclosure agreements and confidentiality agreements, with its contractors and/or Designated Biologists or Biological Monitors that prohibit or impede open communication with CDFW, including but not limited to providing CDFW staff with the results of any surveys, reports, or studies or notifying CDFW of any non-compliance or take. Failure to notify CDFW of any non-compliance or take or injury of a Covered Species as a result of such agreement or contract may result in CDFW taking actions to prevent or remedy a violation of this ITP.
5.4	Education Program. PG&E shall conduct an education program for all persons employed or otherwise working in the Project Area before performing any work. The program shall consist of a presentation from the Designated Biologist or General Biological Monitor that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, its status pursuant to CESA including legal protection, recovery efforts, penalties for violations and Project specific protective measures described in this ITP. PG&E shall provide interpretation for non-English speaking workers, and the same instruction shall be provided to any new workers before they are authorized to perform work in the Project Area. Upon completion of the education program, employees or contractors shall sign a form or equivalent acknowledging that they attended the program and understand all protection measures. This training shall be repeated at least once annually for long-term and/or permanent employees or contractors that shall be conducting work in the Project Area.
5.5	Covered Activity Monitoring Documentation. When biological monitoring is required per Condition of Approval 6.4 (Compliance Monitoring) or when required for conducting Covered Activities E9a (Reconductoring), G9 (Pipeline Lowering), G11 (Pipeline Replacement) and minor new construction in modeled habitat, the Monitoring Biologist(s) shall maintain monitoring documentation onsite in either hard copy or digital format throughout the duration of work, which shall include a copy of this ITP with attachments. PG&E shall ensure a copy of the monitoring documentation is available for review at the Work Area upon request by CDFW.
5.6	Trash Abatement. PG&E shall initiate a trash abatement program before starting Covered Activities and shall continue the program for the duration of the Project. PG&E shall ensure that trash and food items are contained in animal-proof containers and removed, ideally at daily intervals but at least once a week, to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.
5.7	Dust Control. PG&E shall implement dust control measures during construction activities to facilitate visibility for monitoring of the Covered Species by Biological Monitors and crews. PG&E shall keep the amount of water used to the minimum amount needed and shall not allow water to form puddles.
5.8	Prohibition of Firearms. Firearms and domestic dogs shall be prohibited in work areas as well as from site access routes during construction and development of the project, except those firearms and domestic dogs that are in the possession of authorized security personnel or local, state, or federal law enforcement officials.
5.9	Erosion Control. PG&E shall implement and install all erosion and sediment control measures and devices prior to conducting Covered Activities that include grading, excavation, or placement of fill. PG&E shall utilize erosion control measures where sediment runoff from exposed slopes or surfaces could enter a drainage, stream, wetland or pond. PG&E shall repair and/or replace ineffective measures or contrivances whose integrity has been compromised immediately.

Measure No.	Text
5.10	Erosion Control Materials. PG&E shall prohibit use of erosion control materials potentially harmful to Covered Species and other species, such as monofilament netting (erosion control matting) or similar material, in potential Covered Species' habitat.
5.11	Clean Vehicles. PG&E shall implement the following: 5.11.1 Mud and/or accumulated soils shall be removed from equipment and vehicles to the maximum extent practicable. 5.11.2 Vehicles and equipment shall be cleaned or washed before entering a new work site. 5.11.3 A log shall be kept for each work site and shall be completed to document each cleaning or washing of vehicles or equipment before entering each new work site. 5.11.4 Vehicles shall be staged and stored on paved or cleared areas to the extent practicable. 5.11.5 Certified weed-free mulch, straw, hay bales, or equivalent materials shall be used where necessary.
5.12	Delineation and Avoidance of Sensitive Habitat Features. A Designated Biologist shall clearly identify sensitive resources that crews must avoid for the duration of the activities with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize or avoid disturbance.
5.13	Work Area Access. To the extent practicable, project-related personnel shall access a work area using existing routes, and shall not cross Covered Species' habitat outside of or en route to a work area. PG&E shall restrict project-related vehicle traffic to established roads, staging, and parking areas to the maximum extent practicable. PG&E shall ensure that vehicle speeds do not exceed 15 mph to avoid Covered Species on or traversing the roads.
5.14	Staging Areas. PG&E shall confine all Project-related parking, storage areas, laydown sites, equipment storage, and any other surface-disturbing activities to a Work Area using, to the extent possible, previously disturbed areas. No staging areas shall be located in chaparral or scrub habitats, over rock outcroppings or within 300 feet of a stock pond or vernal pool.
5.15	Hazardous Waste. PG&E shall immediately stop and, pursuant to pertinent state and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. PG&E shall properly contain and dispose of any unused or leftover hazardous products offsite.
5.16	Pesticides. At no time shall PG&E utilize broadcast baiting of rodenticides within the project area. When pesticides are used, PG&E shall follow all applicable state and federal laws, County Agricultural Commissioner regulations, label requirements, and when applicable, according to requirements in habitat management plans associated with ITP 8.5 (Habitat Acquisition and Protection).[4]
5.17	CDFW Access. PG&E shall provide CDFW staff with reasonable access to Work Areas and mitigation lands under PG&E control and shall otherwise fully cooperate with CDFW efforts to verify compliance with or effectiveness of mitigation measures set forth in this ITP.
5.18	Refuse Removal. Upon completion of construction activities within a work area, PG&E shall remove from, and properly dispose of all temporary fill and construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.
Monitoring, Notification, and Reporting Provisions	
6.1	Notifications Before Commencement of Certain Activities. Notifications shall be submitted at least 45 days in advance and prior to "release to construction" by the Designated Representative for review by CDFW. Within 14 days of request by CDFW and if not possible then at least 5 days prior to the beginning of the Covered Activity, PG&E shall provide any requested additional information and provide access for a CDFW field review of the proposed Work Area. The proposed Covered Activity may not commence until PG&E has provided the additional information to the specifications of the request by CDFW, or until field review access has been provided to CDFW. If there continues

[4] PG&E may elect to provide for the acquisition, permanent protection, and perpetual management of habitat mitigation lands to complete compensatory mitigation obligations (ITP 8.5; CDFW 2022b).

Measure No.	Text
	to be unresolved issues or questions, then PG&E or CDFW may request to meet and confer within 10 business of the request to resolve any outstanding issues. CDFW retains the right to determine whether a proposed Covered Activity shall not be provided coverage under this ITP.
6.4	General Compliance Monitoring. ■ The Designated Biologist shall be onsite: ■ Daily when Covered Species are encountered within a work area; ■ At the determination of the Designated Biologist, when Covered Species are relocated outside a work area to monitor and assess relocation success; ■ When required by species-specific ITP measures. A Biological Monitor shall be onsite: ■ Daily when construction activities are conducted in [BAHCP] modeled habitat; ■ when required by species-specific ITP measures. For construction activities in Covered Species modeled habitat that required work over a period of two weeks or greater, a General Biological Monitor shall conduct compliance inspections, at a minimum, once very week after clearing, grubbing, and grading are completed and during periods of inactivity. The General Biological Monitor shall conduct compliance inspections to: 1. Minimize incidental take of the Covered Species; 2. Prevent unlawful take of species; 3. Check for compliance with all measures of the ITP; 4. Check all exclusion zones; 5. Ensure that signs, stakes, and fencing are intact, and that construction activities are only occurring in the pre-designated project footprint. The Designated Representative or Monitoring Biologist shall prepare daily written observation and inspection records summarizing oversight activities and compliance inspections, observations of Covered Species and their sign, survey results, and monitoring activities required by this ITP.
6.8	Observations. The Designated Biologist or PG&E shall submit all observations of Covered Species to CDFW's California Natural Diversity Database within 60 calendar days of the observation and the PG&E shall include copies of the submitted forms with the next Annual Summary Report or 5-year compliance report. If observations occur on lands not owned in fee title by PG&E, then PG&E may elect to inform the landowner of an observation. If the landowner objects to submission of the observation, then PG&E may elect to not submit.
6.10	Notification of Take or Injury. PG&E shall immediately notify the Designated Biologist if a Covered Species is taken or injured by a project-related activity, or if a Covered Species is otherwise found dead or injured within the vicinity of the project. The Designated Biologist or Designated Representative shall provide initial notification to CDFW by calling the Regional Office at (707) 428-2002. The initial notification to CDFW shall include information regarding the location, species, and number of animals taken or injured and the ITP Number. Following initial notification, PG&E shall send CDFW a written report within two working days. The report shall include the date and time of the finding or incident, location of the animal or carcass, and if possible, provide a photograph, explanation as to cause of take or injury, and any other pertinent information.
Take Minimization Measures	
7.1	Equipment Fueling. No vehicles or heavy equipment shall be refueled within 100 feet of a wetland, stream, or other waterway, or within 250 feet of vernal pools, unless secondary containment is used. The fueling operator must always stay with the fueling operation. Tanks may not be topped off. If refueling must be conducted closer to wetlands, construct a secondary containment area subject to review by an environmental field specialist and/or biologist. PG&E shall maintain spill prevention and cleanup equipment in refueling areas. Sufficient spill containment and cleanup equipment shall be present at all mobile, temporary, and permanent equipment fueling locations.
7.2	Lighting. PG&E shall ensure that all artificial outdoor lighting be limited to lighting for safety and security, and designed using Illuminating Engineering Society's design guidelines, International Dark-Sky Association-approved fixtures, or other industry standards that address lighting impacts.

Measure No.	Text
	Lighting above ground level shall be directed downward or inward, where consistent with safety concerns, and shielding shall be utilized, where needed, to minimize light scatter offsite. Light fixtures shall have non-glare finishes that shall not cause reflective daytime glare.
7.3	Construction Activities Hours. Construction activities shall cease 30 minutes before sunset and shall not begin prior to 30 minutes after sunrise, to the extent practicable. Emergency night work shall be limited in extent, duration, and brightness, to the extent feasible. For Covered Activities E9a (Reconductoring), G9 (Pipeline Lowering), G11 (Pipeline Replacement), and minor new construction, work may not occur at night during rain events in CTS habitat within 0.5 miles of known or potential breeding habitat between November 1 and April 30 unless otherwise authorized by CDFW. Covered Activities shall not occur at night for non-emergency work in California freshwater shrimp habitat any time of year unless otherwise authorized by CDFW.
7.4	Stored Materials Inspections. Workers shall thoroughly inspect for AWS and CTS in all construction pipe, culverts, or similar structures with a diameter of 7.6 centimeters (3 inches) or greater that are stored for one or more overnight periods before the structure is subsequently moved, buried, or capped. If during inspection one of these animals is discovered inside the structure, workers shall notify the Biological Monitors) and allow the Covered Species to safely escape that section of the structure before moving and utilizing the structure or moved out of harm's way by a Designated Biologist.
7.5	Cover or Ramp Open Excavations. Trenches or pits shall be covered or equipped with an escape ramp if left overnight in Covered Species modeled habitat. Crews shall inspect any trench, pit, or hole every morning prior to conducting construction activities to ensure no individuals are trapped; if any animals are found staff shall contact the Designated Biologist(s) to identify whether it is a Covered Species and if so, it shall be moved out of harm's way by the Designated Biologist(s). If the animal is not a Covered Species, then a General Monitoring Biologist or other individual with wildlife handling experience in possession of any applicable handling permits may move it out of harm's way.
7.6	Spoils Stockpiles. PG&E shall ensure that soil stockpiles are placed where soil shall not pass into wetlands or any other "waters of the state," in accordance with CFGC section 5650. PG&E shall cover and protect stockpiles to prevent soil erosion, including wind and rain. Spoils shall be placed away from chaparral habitat, rock outcroppings, and concentrated ground squirrel, pocket gopher, or other small mammal burrows or habitat features suitable for use by the Covered Species as refugia habitat.
7.7	Screen or Cap Hollow Pipes or Posts. All hollow pipes or posts that are installed as part of construction activities, or encountered in a work area that PG&E owns or is responsible for that are above ground shall be capped, screened, or filled with material by PG&E prior to the end of the day in which installation occurs.
7.8	Equipment Inspections. Workers shall inspect for Covered Species under vehicles and equipment before the vehicles and equipment are moved. If a Covered Species is present, the worker shall notify the Biological Monitors and wait for the Covered Species to move unimpeded to a safe location. Alternatively, PG&E shall contact a Designated Biologist to determine if they can safely move the Covered Species out of harm's way in compliance with the ITP.
7.9	No Barriers to Covered Species Movements. PG&E shall construct access routes such that there are no steep curbs, v-ditches, berms, straw wattles, or dikes that could prevent Covered Species from traversing through ROWs or from exiting roadways. If curbs/ berms/straw wattles are necessary for safety and/or surface runoff, PG&E shall design and construct them to allow Covered Species to move over them. PG&E shall modify or remove exclusion fencing at the request of Biological Monitors or CDFW staff that may impede Covered Species movements.
Alameda Whipsnake Specific Conditions	
7.17	Alameda Whipsnake Pre-Activity Habitat Features Survey. Preconstruction surveys for Alameda whipsnake and sheltering and sunning habitat features (e.g., burrows, rocky outcrops, fallen trees, etc.) shall be conducted in modeled core and perimeter core habitat for construction activities (also

Measure No.	Text
	refer to ITP 7.19 for survey requirements in core habitat). These surveys shall be conducted by a Designated Biologist no more than 30 calendar days prior to any initial ground disturbance. These surveys shall consist of walking the work area and, if possible, any accessible adjacent areas within at least 50 feet of the work area. The Designated Biologist shall investigate potential cover sites when it is feasible and safe to do so. This includes thorough investigation of mammal burrows, rocky outcrops, appropriately sized soil cracks, tree cavities, and debris. Sheltering, sunning, or other sensitive species features identified by the Designated Biologist shall be identified with flagging. PG&E shall avoid habitat features flagged by the Designated Biologist to the extent practicable. At the recommendation of the Designated Biologist, PG&E shall install an exclusionary barrier (ITP 7.18).
7.18	Exclusionary Barrier. PG&E shall install a temporary barrier, where feasible, to prevent the Covered Species from dispersing into the work area, including along construction access routes, prior to commencing any other construction activities. The barrier shall be installed immediately after the preconstruction surveys have been completed in accordance with ITP 7.17 and shall consist of fencing at least 42 inches tall with 36 inches above the soil surface, designed with a lip to prevent the Covered Species from climbing over the barrier, and buried to a depth of six inches below the soil surface. The soil shall be compacted against both sides of the fence to prevent the Covered Species from gaining access. The stakes shall be placed on the inside of the fence. No gaps or holes are permitted in the fencing system except for access areas as required for vehicular and pedestrian traffic. The exit/entry points shall be constructed so that it is flush to the ground and so that the Covered Species cannot access the work area. The barrier shall be designed to allow trapped individuals to leave the work area by installing one-way funnels, ramps, or other methods approved by CDFW. An alternative barrier design or directional treatment techniques in lieu of fencing may be used after receiving written authorization from CDFW. The Designated Biologist or General Monitoring Biologist shall inspect the barrier daily and the barrier shall remain in place until all construction activities have been completed or where recommended by a Designated Biologist. PG&E shall maintain and repair barrier immediately, if damaged, to ensure that it is functional and without defects. PG&E shall provide refuge opportunities along or near the outer side of the silt fence for the Covered Species (also refer to ITP 7.19).
7.19	Refugia Coverboards. Coverboards shall be installed in work areas as determined by the Designated Biologist in modeled core and perimeter core habitat prior to construction activities. When coverboards are recommended, they shall be placed to provide refuge for the Covered Species [AWS] fleeing the area, including areas where a directional treatment methodology is used (e.g., phasing a project to encourage Covered Species [AWS] to move towards core habitats and away from potentially harmful environs). When coverboards are recommended, they shall be inspected at the end of each workday by a General Monitoring Biologist and use by wildlife shall be recorded.
7.20	Alameda Whipsnake Clearance Surveys. Immediately prior to the start of construction activities impacting greater than 0.1 acre that affects core AWS habitat, including scrub or chaparral plant communities in modeled habitat, the Designated Biologist(s) shall visually survey the work area and adjacent areas, as determined by the Designated Biologist, to clear the area of AWS. If construction activities may affect habitat features flagged per ITP 7.17 then a General Biological Monitor shall conduct daily clearance surveys in the active work area(s).
7.21	Alameda Whipsnake Pre-Activity Tailboards. The Designated Biologist or General Biological Monitor may prescribe activity-specific tailboards trainings reminding staff of the importance of following measures to minimize impacts on AWS as they relate to the work site. Site-specific tailboards are be conducted for staff working on construction activities that impact greater than 0.1 acre in core habitat or perimeter core habitat.
7.22	Suspected Alameda Whipsnake in Work Area. If AWS is found by any person in the work area before or during construction activities, all work that could potentially injure the snake shall stop immediately and the snake shall be allowed to leave the work area on its own. If the snake does not leave the work area or cannot move to an area with sufficient habitat outside of the work area, the Designated Biologist shall move the snake to suitable habitat outside the work area. Construction activities shall resume only after the snake has been confirmed to be out of the work area.

Measure No.	Text
7.23	Alameda Whipsnake Seasonal Restrictions. Disturbance in AWS modeled core and perimeter core habitat shall only take place between April 15 and October 31 to the extent feasible when AWS is more active and less likely to be affected by construction activities. For activities occurring in AWS core or perimeter core habitat between November 1 and April 14, a Designated Biologist(s) shall be present during operations.
7.24	Alameda Whipsnake Injury. If an AWS has major or serious injuries as a result of construction activities, the Designated Biologist shall immediately take it to a qualified wildlife rehabilitation or veterinary facility. PG&E shall bear any costs associated with the care or treatment of such injured AWS. If the injury is minor or healing and the AWS is likely to survive as determined by the Designated Biologist, it shall be released immediately to an area out of harm's way. PG&E shall notify CDFW of the injury to the AWS within 2 working days by telephone and e-mail followed by a written incident report to CDFW. Notification shall include the name of the facility where the animal was taken.

Table F-9. Relevant Applicant-proposed Measures from the ITP FEIR

Measure No.	Text
ITP FEIR APM BIO-1	Prevent or minimize the spread of invasive weeds. The following will be implemented on E9a (Reconductoring), G9 (Pipeline Lowering), G11 (Pipeline Replacement), and minor new construction to prevent the spread of invasive weeds during all phases of covered activities, as appropriate: ■ During covered activities involving ground disturbance, mud and/or accumulated soils will be removed from equipment and vehicles to the extent feasible. Vehicles and equipment will be cleaned or washed before entering a new work site. A log will be kept for each job site and would be completed to document each cleaning or washing of vehicles or equipment before entering each new work site. ■ Vehicles will be staged and stored on paved or cleared areas whenever feasible. Certified weed-free mulch, straw, hay bales, or equivalent materials will be used where necessary for covered activities.
ITP FEIR APM BIO-2	Protect special-status wildlife encountered while performing covered activities and report covered wildlife observations. Any special-status wildlife species encountered during the course of a covered activity will be allowed to leave the area unharmed, and work activities that could disturb or harm the individual will halt until the wildlife has left the area. Encounters with a special-status species will be reported to a qualified biologist and PG&E Environmental staff. PG&E will maintain records of all covered wildlife species encountered during permitted activities. Encounters with covered wildlife species will be documented and provided to CDFW in an annual report as required by the ITP. If a covered wildlife species is encountered during the course of operations, the following information will be reported for each species: ■ The locations (i.e., narrative, vegetation type, and maps) and dates of observations, including occurrences observed during any required surveys. ■ The general condition of individual health (e.g., apparent injuries). ■ If the species is moved, the location where the species was captured and the location where it was released. ■ The locations, dates, and species and behaviors observed during covered wildlife monitoring. When conducting covered activities E9a (Reconductoring), G9 (Pipeline Lowering), G11 (Pipeline Replacement), and minor new construction PG&E will document encounters with special-status species to the same level of detail as required for covered species. During PG&E's environmental screening process, PG&E will also apply this measure to other

Measure No.	Text
	covered activities to protect special-status species and habitats based on recommendations from qualified biologists. This data will be provided in ITP annual reports.
ITP FEIR APM BIO-3	Design and site minor new construction projects activities to avoid sensitive areas. New, permanent facilities as part of minor new construction activities will be sited and designed to avoid impacts on sensitive vegetation types, sensitive natural communities, and unique plant assemblages, as well as occupied habitat and suitable habitat for special-status species, to the extent feasible. If impacts on these areas cannot be avoided, PG&E will determine if additional permitting is required to conduct the work and obtain the required permits (e.g., LSAA). If impacts are expected on covered species' habitat, Mitigation Measure BIO-1[5] (MM BIO-1) [replaced with ITP Habitat Management land Acquisition and Restoration measures] will be implemented to mitigate for habitat impacts. Where minor new construction would result in impacts on sensitive vegetation types, sensitive natural communities, or unique plant assemblages, PG&E will minimize the construction footprint and implement appropriate protective measures as recommended by the qualified biologist to protect the natural community. Examples of such measures include: reseeding with a California annual seed mix, installing protective fencing around sensitive natural communities or resources, and installing wattles, erosion blankets and other drainage controls to protect new or adjacent plantings.
ITP FEIR APM BIO-3a	Minimize spread of invasive plant and plant pathogens in minor new construction. When conducting minor new construction activities, PG&E will avoid or minimize the spread of invasive species by taking the following actions: 1. Prior to commencement of activities located on or adjacent to non-paved surfaces, a qualified biologist will flag known populations of noxious weeds and invasive plants in the work areas. Invasive plant species include those listed as invasive by the California Invasive Plant Council (Cal IPC). 2. PG&E will stage work in areas not infested with weeds or treat for weed removal prior to using an infested area. 3. Prior to ground disturbance in areas containing species susceptible to Sudden Oak Death, a qualified professional (e.g., biologist, arborist, botanist familiar with Sudden Oak Death and the vegetation communities in the area) will assess the risk of activities and will identify and implement measures to reduce or avoid the risk of Sudden Oak Death spread. These measures will include but will not be limited to the following, and will be further developed and updated based on the best available science and site-specific conditions: a. Designate quarantine areas and implement proper measures for disposal of infested materials (e.g., branches, split wood, wood chips), b. Sanitize shoes, pruning gear, and other equipment with sanitizing materials (e.g., chlorine bleach, Clorox Clean-up, Lysol, scrub brush, boot brush) before and after ground-disturbing and vegetation removal activities are implemented, 4. Clothing, footwear, and equipment used during minor new construction will be cleaned of soil, seeds, vegetation, or other debris or seed-bearing material before entering a work site or when leaving an area with infestations of invasive plants and noxious weeds. 5. Heavy equipment and other machinery used in areas with infestations of invasive plant species or Sudden Oak Death will be inspected for the presence of invasive species before use on the project site and will be cleaned before entering the site, to reduce the risk of introducing invasive plant species or plant pathogens.

[5] The ITP FEIR presented mitigation measures that were superseded by the measures included in the ITP as a condition of approval.

Measure No.	Text
	6. To minimize the introduction and spread of noxious weeds and invasive plants, PG&E will avoid moving weed-infested gravel, rock, and other fill materials to relatively weed-free locations. In areas where invasive plants are removed during minor new construction or vegetation removal activities, PG&E will dispose of invasive plant biomass offsite at an appropriate waste collection facility or treat biomass onsite to eliminate seeds and propagules and prevent reestablishment; if moved offsite, PG&E will transport invasive plant material in a closed container or bag to prevent the spread of propagules during transport. PG&E will use certified weed-free straw and mulch for erosion-control projects. PG&E will maintain stockpiled, uninfested material in a weed-free condition. 7. Areas where ground disturbance has resulted in exposed soil as a result of minor new construction shall be seeded with compatible California annual species, as determined by a qualified biologist or botanist familiar with the native vegetation in the area and experienced in revegetation techniques. Revegetation will occur prior to the onset of winter rains within the year initial impacts take place. If work cannot feasibly be scheduled he rainy season, revegetation may occur as directed by the qualified biologist and no later than the onset of the next winter rains. To ensure a successful revegetation effort, onsite vegetation shall meet the following success criteria: a. PG&E shall perform pre-activity surveys to record baseline vegetative ground cover conditions and composition by a qualified biologist prior to covered activities as follows. The biologist will record the following: i. Absolute percent ground cover for the entire work area. ii. Relative percentages of ground cover within the work area by herbaceous plants, shrubs, trees, and noxious/invasive plants. iii. Develop a catalog of all invasive species present within the work area, including an estimate of percent composition by species. b. PG&E will conduct post-activity monitoring of work areas in the spring following completion of minor new construction. i. A qualified biologist will record any new invasive species that may have inadvertently been introduced to the work area. The biologist shall make special note of any new invasive plant species rated as “high” by the Cal IPC. ii. A qualified biologist will record whether there was an increase in relative cover of invasive species from baseline that may have resulted from the covered activity. iii. If relative cover of invasive plant species has increased within the work area, PG&E shall remove and/or dispose of invasive plants in an appropriate manner, as recommended by a qualified biologist and/or a Pest Control Advisor. If any new invasive plants rated by Cal IPC as “high” are found within the work area, they will be removed in an appropriate manner, as recommended by a qualified biologist and/or a Pest Control Advisor. If the relative ground cover of invasive plants exceeds baseline by 100 percent or more, PG&E will reseed the areas where invasive plants are removed and monitor for one additional year.
ITP FEIR APM BIO-4	Avoid special-status plants. Occurrences of special-status plant species will be avoided to the extent practicable and will include performance of project activities in special-status plant habitat after senescence. PG&E has created “Map Book zones” for the 13 state or federally listed plants that are covered in the O&M HCP. A Map Book zone is defined as an area of occupied or potentially occupied the HCP- covered plant species habitat as determined by PG&E botanical surveys. When rare and endangered plant species subject to the

Measure No.	Text
	Native Plant Protection Act cannot be avoided, PG&E will follow the requirements of California Fish and Game Code Sections 1913(b) and 1913(c) concerning notification to CDFW at least 10 days in advance and provide an opportunity to salvage such species. If a special-status plant is found or known to occur, the plant will be avoided if feasible (i.e., O&M objectives could still be met). If feasible to avoid, avoidance will include establishing a buffer around the plants and demarcation of the buffer by a qualified biologist or botanist using flagging. Consideration of site-specific environmental factors such as terrain, site hydrology, light, and potential introduction of invasive plants may inform the avoidance approach.
ITP FEIR APM BIO-5	Erect wildlife flagging or exclusion fencing. Prior to construction or commencement of any activity that, in the absence of fencing, is likely to directly or indirectly adversely affect covered species, flagging or exclusion fencing for the species will be installed around the perimeter of the activity footprint,[6] or otherwise to ensure species protection. Any exemption or modification of flagging or exclusion fencing requirements will be based on the specifics of the activity, site-specific population, or habitat parameters. Sites with low population density and disturbed, fragmented, or poor habitat will likely be candidates for flagging or fencing requirement exemptions or modifications. Substitute measures, such as onsite Biological Monitors in the place of the flagging or fencing requirement, will be performed as appropriate. Prior to flagging or fencing, the qualified individual will ensure (to the extent feasible) that covered special-status species are absent from the activity footprint. After an area is flagged or fenced, PG&E is responsible for ensuring that covered special-status species flagging or fencing is maintained and opened/closed appropriately during project activities and regularly inspected for damage, which will be repaired as soon as possible. This measure will also be applied when conducting covered activities E9a (Reconductoring), G9 (Pipeline Lowering), G11 (Pipeline Replacement), and minor new construction when these activities are likely to adversely affect special-status species. PG&E may also apply this measure to other covered activities to protect special-status species and habitats based on recommendations from qualified biologists.
ITP FEIR APM BIO-6	Protect nesting birds. All vegetation clearing and ground-disturbing activities will be conducted outside of the nesting season (generally March 1–August 31) to the extent feasible. If this is not feasible, a biologist or qualified individual will determine if preconstruction activity surveys, nest buffers, and/or monitoring are needed in accordance with PG&E's Nesting Bird Management Plan. Nesting bird surveys will be scheduled to occur within a timeframe prior to construction the activity that is suitable for the detection of recently established nests. If active nests containing eggs or young are found, the qualified biologist or individual will establish an appropriate nest buffer in accordance with the species-specific buffers in PG&E's Nesting Bird Management Plan. Nest buffers under the Plan will be species-specific and can range from 15 to 100 feet for passerines, 50 to 300 feet for raptors, or larger if necessary, depending on the planned activity's level of disturbance, site conditions, and the observed bird behavior. Covered activities will not commence within the established buffer areas until the qualified biologist or individual determines that the young have fledged or the nest is no longer active. Active nests will be periodically monitored until the young have fledged or the activity all construction is finished. If birds with active nests are observed showing behavioral signs of agitation (e.g., standing up from a brooding position, flying off the nest) during covered activities, the buffer will be increased

[6] An activity footprint is the area of ground disturbance associated with the preconstruction, construction, operation, implementation, maintenance, and decommissioning of an activity, including associated linear and non-linear components (e.g., staging areas, access routes and roads, gen-ties, pipelines, other utility lines, borrow pits, disposal areas). The footprint may also be considered synonymous with the covered activity site.

Measure No.	Text
	to a distance in which the behavioral signs of agitation cease, in accordance with PG&E's Nesting Bird Management Plan.
ITP FEIR APM BIO-7	Avoid and protect special-status bats. When feasible, activities directly affecting bat roosting habitat will be conducted outside of the bat breeding/pupping season (generally, April through mid-September). If work that would affect known bat breeding sites must be done in the bat breeding/pupping season, a qualified biologist would evaluate known breading/ roosting sites or conduct surveys for bat roosts in suitable breeding/roosting sites (e.g., bridges, mines, caves, trees with hollows, palm trees, snags, buildings, long and dark culverts, rock outcrops, dense tree canopies, and flaking tree bark). If evidence of a bat maternity roost is found or maternity roosts are detected, PG&E will avoid conducting covered activities that may directly affect the active roost site, including the following: ■ If a maternity roost is identified then the qualified bat biologist will develop a Bat Avoidance and Monitoring Plan prior to the start of project activities that shall include: (1) an assessment of all impacts to bats from the activity, including noise disturbance during covered activities and (2) effective AMMs to protect bats in order to ensure that direct impact to active bat maternity roost site do not occur. Notification will be provided to CDFW prior to the start of covered activities. The notification will include a copy of the Bat Avoidance and Monitoring Plan. If direct impacts to identified maternity roost sites cannot be avoided, PG&E will provide a compensatory mitigation plan to CDFW for review and approval. ■ As necessary, an exclusionary buffer will be maintained around active roosts. The size of the buffer will be determined by the qualified biologist based on factors such as the planned activity's level of disturbance and site conditions and will typically be 250 feet. ■ As necessary, a qualified biologist will monitor active bat roost site buffers during O&M activities to determine if roosting activity is influenced by noise or vibrations until a qualified biologist has determined if the young bats are volant (about to fly) or the roost is unoccupied. When feasible, to protect bats and in accordance with BAHCP BMP-307 tree work near riparian zones will be conducted during the dry season. If it is not feasible to conduct tree work during the dry season, operations will occur between rain events or during dry spells unless there is an emergency or imminent threat to life or property.

[7] BMP-30 from the BAHCP: When possible, activities near streams, wetlands, or on saturated soils shall be conducted during the dry season (generally May 15–October 15) or during periods of minimum flow. If it is not possible to perform the work in the dry season, perform rainy season work during dry spells between rain events. For the purposes of this project, a riparian zone will have a buffer distance of 250 feet.

F.6. References

AAB (All About Birds), 2025. All About Birds: The Cornell Lab of Ornithology. Online: https://www.allaboutbirds.org/. Accessed: April 2025.

BAOSC (Bay Area Open Space Council), 2019. The Conservation Lands Network 2.0 Report. Berkeley. https://www.bayarealands.org/maps-data/.

CDFW (California Department of Fish and Wildlife), 2025a. American Peregrine Falcons in California – web page. https://wildlife.ca.gov/Conservation/Birds/Peregrine-Falcon. Accessed: April 2025.

_____, 2025b. Bald Eagles in California – web page. Online: https://wildlife.ca.gov/Conservation/Birds/Bald-Eagle. Accessed: April 2025.

_____, 2025c, Online California Wildlife Habitat Relationships Program, Life History and Range. https://wildlife.ca.gov/Data/CWHR/Life-History-and-Range. Accessed: April 2025.

_____, 2025d. Natural Communities. Biogeographic Data Branch, Sacramento, CA. https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities. Accessed: May 2025.

CNPS (California Native Plant Society), 2025. Rare Plant Inventory (online edition, v9.5.1). Rare Plant Program. https://www.rareplants.cnps.org. March/April 2025.

Holland (Robert F. Holland), 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. The Resources Agency, California Department of Fish and Game. 155 pp.

Love, B., 2010. The Bees of the American and Consumnes Rivers in Sacramento County, California: Effects of Land Use on Native Bee Diversity. California State University, Sacramento.

PG&E (Pacific Gas and Electric Company), 2024. Proponent's Environmental Assessment for Pacific Gas and Electric Company's Moraga–Oakland X 115 kV Rebuild Project. Application A.24-11-005. November 15.

Sawyer et al. (Saywer, J.O., T. Keeler-Wolf, and J.M. Evens), 2009. A Manual of California Vegetation. Second edition. California Native Plant Society, Sacramento. 1300 pp.

Shuford, W.D., and T. Gardali, 2008. California Bird Species of Concern. California Department of Fish and Game, Western Field Ornithologists.

USFWS (U.S. Department of the Interior, Fish and Wildlife Service), 2024. Proposed Rule: Endangered and Threatened Wildlife and Plants; Threatened Species Status with Section 4(d) Rule for Monarch Butterfly and Designation of Critical Habitat. Federal Register. https://www.federalregister.gov/documents/2024/12/12/2024-28855/endangered-and-threatened-wildlife-and-plants-threatened-species-status-with-section-4d-rule-for.

Appendix G

PG&E'S PRELIMINARY EMF FIELD MANAGEMENT PLAN

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EXHIBIT D
PRELIMINARY EMF FIELD MANAGEMENT PLAN

EXHIBIT D

MORAGA-OAKLAND X 115 KV LINE REBUILD PROJECT PRELIMINARY TRANSMISSION MAGNETIC FIELD MANAGEMENT PLAN

I. General Description of Project

Project Lead:

Project Manager, Electric Transmission Maintenance and Construction

Transmission Lines:

Moraga-Oakland X 115 kV line

Distribution Line Underbuild:

None

Scope of Work:

- Approximately 4 miles of the existing Moraga-Oakland X 115 kV lines is proposed to be rebuilt in place, including reconductoring and replacement of towers, from Moraga Substation to Corpus Christi School
- Approximately 1.2 miles of Moraga-Oakland X 115 kV lines is proposed to be placed underground from Corpus Christi School to Oakland X Substation along Park Boulevard.
- Remove approximately 1 mile of existing double circuit lines and structures after Moraga-Oakland X 115 kv lines are replaced underground.

The ultimate objective of the project is to provide lifecycle updates to the double circuit, four-line path by removing and replacing four circuits to avoid future reliability issues while maintaining safe operations.

The estimated total cost of the proposed project is approximately *$440,000,000.*[1] Four percent of this estimated total cost is *$17,600,000.*

II. Background: CPUC Decision 93-11-013 and Decision D.06-01-042

On January 15, 1991, the CPUC initiated an investigation to consider its role in mitigating the health effects, if any, of electric and magnetic fields ("EMF") from utility facilities and power lines. A working group of interested parties, called the California EMF Consensus Group, was created by the CPUC to advise it on this issue. It consisted of 17 stakeholders representing citizens groups, consumer groups, environmental groups, state agencies, unions, and utilities. The Consensus Group's fact-finding process was open to the public, and its report incorporated concerns expressed by the public. The Consensus Group's recommendations were filed with the Commission in March 1992.

[1] $440 million represents the "worst case" for total project cost.

In August 2004 the CPUC began a proceeding known as a "rulemaking" (R.04-08-020) to explore whether changes should be made to existing CPUC policies and rules concerning EMF from electric transmission lines and other utility facilities.

Through a series of hearings and conferences, the Commission evaluated the results of its existing EMF mitigation policies and addressed possible improvements in implementation of these policies. The CPUC also explored whether new policies were warranted in light of recent scientific findings on the possible health effects of EMF exposure.

The CPUC completed the EMF rulemaking in January 2006 and presented these conclusions in Decision D.06-01-042:

- The CPUC affirmed its existing policy of requiring no cost and low-cost mitigation measures to reduce EMF levels from new utility transmission lines and substation projects.

- The CPUC adopted rules and policies to improve utility design guidelines for reducing EMF and established a utility workshop to implement these policies and standardize design guidelines.

- Despite numerous studies, including one ordered by the Commission and conducted by the California Department of Health Services, the CPUC stated "we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences."

- The CPUC said it will "remain vigilant" regarding new scientific studies on EMF, and if these studies indicate negative EMF health impacts, the Commission will reconsider its EMF policies and open a new rulemaking if necessary.

In response to a situation of scientific uncertainty and public concern, the decision specifically requires utilities to consider "no-cost" and "low-cost" measures, where feasible, to reduce exposure from new or upgraded utility facilities. It directs that no-cost mitigation measures be undertaken, and that low-cost options, when they meet certain guidelines for field reduction and cost, be adopted through the project certification process. PG&E was directed to develop, submit, and follow EMF guidelines to implement the CPUC decision. According to the guidelines, four percent of total project budgeted cost is the benchmark used to determine "low-cost" in implementing EMF mitigation, and mitigation measures should achieve incremental magnetic field reductions of at least 15% at the edge of right-of-way ("ROW").

The California Department of Education ("CDE") evaluates potential school sites under a range of criteria, including environmental and safety issues. Proximity to high-voltage power transmission lines[2] is one of the criteria. As directed by the CPUC in Decision 06-01-042, the California investor-owned utilities worked with the CDE to align EMF Design Guidelines with the CDE's policies to the extent those policies were consistent with the CPUC's EMF Policy as stated in its Decision 06-01-042. This collaboration resulted in the updated power line setback

[2] *School Site Selection and Approval Guide*, California Department of Education (2000)

exemption guidelines issued in May 2006. In revising its precautionary EMF approach, the CDE stated:

> "The proposed guidance acknowledges the scientific uncertainty of the health effects of EMFs, the lack of any state or nationally established standard for EMF exposure, and the PUC's recently reconfirmed reliance upon no/low-cost measures targeted to only reduce fields from new power transmission lines." [3]

For underground power lines rated 50 kV and above, the CDE's setback distances are as follows:

- 25 feet for 50-133 kV line (interpreted by CDE up to 200 kV)
- 37.5 feet for 220-230 kV line
- 87.5 feet for 500-550 kV line

III. General Description of Surrounding Land Uses

Land Uses Adjacent to Project Route

Schools or Daycare:

School: Corpus Christi
Daycares: Gan Moh Tov Preschool, Duck Pond Preschool, Les Petites Francophones

Overhead Rebuild: Four structures.
Undergrounding: Approximately .11 underground miles.

Residential:

Overhead Rebuild: Thirty-Two structures.
Undergrounding: Approximately .96 underground miles.

Commercial/Industrial:

Overhead Rebuild: No structures.
Undergrounding: Approximately .08 underground miles.

Recreational:

Overhead Rebuild: Six structures

Agricultural, Rural, and Undeveloped Land:

Overhead Rebuild: Fourteen structures.
Undergrounding: Approximately .12 underground miles

[3] "Power Line Setback Exemption Guidance - May 2006" by the California Department of Education

IV. No-Cost and Low-Cost Magnetic Field Mitigation

A. No-Cost Magnetic Field Reduction Options

1. Overhead Rebuild

Optimal phase configurations can be used as a field cancellation technique. The phases from one circuit of a multi-circuit line can be used to reduce the field from another circuit, thereby reducing the total magnetic field strength. For this reason, multi-circuit lines may have lower magnetic fields than single circuit lines. Double circuit tower lines in the school and residential land use areas considered for optimal phasing:

Moraga-Oakland X 115 kV Rebuild

	Base Case Phasing	**Proposed Optimal Phasing**
From Structure 0/1 to Structure 3/29		
Moraga-Oakland X 115kV #1	(T,M,B) = ABC	(T,M,B) = **CBA**
Moraga-Oakland X 115kV #2	(T,M,B) = ABC	(T,M,B) = ABC
From Structure 0/1 to Structure 3/31		
Moraga-Oakland X 115kV #3	(T,M,B) = BCA	(T,M,B) = **ACB**
Moraga-Oakland X 115kV #4	(T,M,B) = BCA	(T,M,B) = BCA

Optimally Phase Overhead Circuits

The phases of the Moraga-Oakland X 115 kV #1 and Moraga-Oakland 115 kV X #2 lines can be arranged for minimum magnetic field level at the edge of the ROW. This FMP proposes to arrange Moraga-Oakland X 115 kV #1 phasing from ABC (top, middle, bottom) to CBA (top, middle, bottom). The phases of the Moraga-Oakland X 115 kV #3 and Moraga-Oakland X 115 kV #4 lines can be arranged for minimum magnetic field level at the edge of the ROW. This FMP proposes to arrange Moraga-Oakland X 115 kV #3 phasing from BCA (top, middle, bottom) to ACB (top, middle, bottom).

Location of Calculation

Calculations are based on standard 1100 amp current flow and a minimum conductor height of twenty-eight feet at midspan. Below are the calculations for proposed optimal phasing:

Table 1. Magnetic Field Reduction for Phase Optimization

Phasing Calculations	Base Case		Optimal phase		Reduction	
Segment	North ROW	South ROW	North ROW	South ROW	North ROW	South ROW
Oakland-Moraga #1, #2, #3 and #4 115kV Lines	118.1 mG	118.1 mG	51.6 mG	51.6 mG	56.0%	56.0%

The purpose of magnetic field modeling is to evaluate relative effectiveness of various magnetic field reduction measures, not to predict magnetic field levels.

2. Undergrounding

Base Case Triangular Underground Configuration

The magnetic field strength at ground level is a result of the addition of the magnetic field vectors of the various current carrying conductors. As the phases are moved closer together, there is increased phase-to-phase cancellation of the magnetic field and the total resultant field strength decreases. Therefore, compact spacing designs can result in a lower magnetic field strength than larger, more spread-out designs. Horizontal or vertical configurations typically have a larger phase spacing and hence, produce higher fields under the line than triangular or delta configurations.

Proposed Twisted Triangular Underground Configuration

Twisting cable produces lower magnetic field levels than three individual conductors sharing the same conduit because the twisted cable maintains a uniform, compact and concentric configuration that increases phase-to-phase cancellation of the magnetic field. Three phase conductors sharing the same conduit will lose concentricity depending on fill percentage of the conduit.

Table 2. Magnetic Field Reduction for Typical Configuration vs Twisted Cable (Triplex)

Configuration Calculations	Base Case		Triplex Configuration		Reduction	
Segment	North ROW	South ROW	North ROW	South ROW	North ROW	South ROW
Oakland-Moraga #1, #2, #3 and #4 115kV Lines	27.1 mG	27.1 mG	8.6 mG	8.6 mG	68.3%	68.3%

The purpose of magnetic field modeling is to evaluate relative effectiveness of various magnetic field reduction measures, not to predict magnetic field levels.

This FMP proposes to use twisted cable technology underground to further reduce magnetic field levels at no cost.

Strategic Line Placement

The strength of the magnetic field decreases as the distance from the conductors increases. Therefore, one method of reducing the magnetic field strength at a particular location is to increase the distance of the conductors from the location of interest. For electric transmission lines, this location most commonly is the edge of the ROW. The underground configurations will be placed within the ROW to reduce magnetic field exposure to buildings along the entire route, except where the location of existing underground utilities prevent strategic line placement.

B. Low-Cost Magnetic Field Reduction Options

Reducing magnetic field strength by increasing the distance from the source can be accomplished either by increasing the height or depth of the conductor from ground level. Furthermore, locating the power lines as far away from the edge of the ROW or as close to centerline as possible will result in lower field levels at the edge of the ROW at thirty feet.

1. Overhead Rebuild

Thirty-six structures are located school and residential land use areas and are considered for magnetic field reduction.
Calculations are based on 1100 amp current flow and a minimum conductor height of thirty-one feet at midspan. Below are the calculations for proposed the proposed structure raises:

Table 3. Magnetic Field Reduction for raising height of structures ten feet

Raising Calculations	Base Case		Raise 10 Feet		Reduction	
Segment	North ROW	South ROW	North ROW	South ROW	North ROW	South ROW
Oakland-Moraga #1, #2, #3 and #4 115kV Lines	51.6 mG	51.6 mG	31.8 mG	31.8 mG	38.5%	38.5%

The purpose of magnetic field modeling is to evaluate relative effectiveness of various magnetic field reduction measures, not to predict magnetic field levels.

Table 4. Estimated Cost for raising height of structures ten feet

Oakland-Moraga #1, #2, #3 and #4 115kV Overhead Lines						
Project Segment (Pole/Tower ID #)	Location (Street, Area)	Adjacent Land Use	Reduction Measure Considered	Measure Adopted?	Reason(s) if not adopted	Estimated Cost to Adopt
0/1 -1/10	Moraga Substation	Undeveloped				
1/11 - 3/27	Manzanita Dr to Estates Dr	Residential	Raise Conductor 10 Ft	Yes		$320,000
3/27 - 3/28	Corpus Cristi	School	Raise Conductor 10 Ft	Yes		$40,000

This FMP proposes to raise the height of thirty-six structures in the residential and school land use areas by ten feet taller than required for meeting clearance requirements. The estimated cost of this mitigation is $3,492,000.

2. Undergrounding

The magnetic field is calculated three feet above the ground at the edge of the ROW. The magnetic field strength depends upon the location along the line at which it is calculated. Calculations for the underground cable are based on 1100 amp current flow and a conductor depth of three feet and ROW at twenty feet. Below are the calculations for lowering the trench:

Table 5. Magnetic Field Reduction for lowering depth of conductors additional five feet

Lowering Calculations	Base Case		Lower 5 Feet		Reduction	
Segment	North ROW	South ROW	North ROW	South ROW	North ROW	South ROW
Oakland-Moraga #1, #2, #3 and #4 115kV Lines	8.6 mG	8.6 mG	7.1 mG	7.1 mG	17.3%	17.3%

The purpose of magnetic field modeling is to evaluate relative effectiveness of various magnetic field reduction measures, not to predict magnetic field levels.

Table 6. Estimated costs for lowering depth of conductors additional five feet

Oakland-Moraga #1, #2, #3 and #4 115kV Underground Lines						
Project Segment (Distance, Miles)	**Location (Street, Area)**	**Adjacent Land Use**	**Reduction Measure Considered**	**Measure Adopted?**	**Reason(s) if not adopted**	**Estimated Cost to Adopt**
.00 - .11	Corpus Cristi School	School	Lower Trench 5 Ft	Yes		$396,000
.11 - .22	St James Dr to Hollywood Av	Residential	Lower Trench 5 Ft	Yes		$396,000
.22 - .34	Hollywood Av to Dolores Av	Undeveloped				
.34 - .44	Dolores Av to El Centro Av	Residential	Lower Trench 5 Ft	No	Setback > 30 ft, field reduction < 15%	
.44 - .66	El Centro Av to Edgewood Av	Residential	Lower Trench 5 Ft	Yes		$792,000
.66 - .74	Edgewood Av to 4174 Park	Commercial				
.74 - 1.10	4174 Park to Greenwood Av	Residential	Lower Trench 5 Ft	Yes		$1,296,000
1.10 - 1.27	Greenwood Av to Oakland X	Residential	Lower Trench 5 Ft	Yes		$612,000

This FMP proposes to lower the depth of the trench in the school and residential land use areas 5 feet lower than the base case design. The estimated cost of this mitigation is $3,492,000.

The total estimated cost of mitigation is $3,852,000.

V. Conclusion - Field Reduction Options Selected

This FMP proposes to arrange Moraga-Oakland X 115 kV #1 phasing from ABC (top, middle, bottom) to CBA (top, middle, bottom). This FMP proposes to arrange Moraga-Oakland X 115 kV #3 phasing from BCA (top, middle, bottom) to ACB (top, middle, bottom).

This FMP proposes to use twisted cable technology underground to further reduce magnetic field levels at no cost.

This FMP proposes to raise the height of approximately thirty-six structures in the residential and school land use areas by ten feet taller than required for meeting clearance requirements.

This FMP proposes to lower the depth of the trench in the school and residential land use areas 5 feet lower than the base case design.

The estimated cost of this mitigation is approximately $3,852,000.

VI. References

California Public Utilities Commission. 1993. Order instituting investigation on the Commission's own motion to develop policies and procedures for addressing the potential health effects of electric and magnetic fields of utility facilities. Decision 93-11-013. November 2.

California Public Utilities Commission. 2006. Order Instituting Rulemaking to update the Commission's policies and procedures related to electromagnetic fields emanating from regulated utility facilities. Decision 06-01-042 January 26.

Pacific Gas & Electric Company. 2006. EMF Design Guidelines for Electrical Facilities.

Appendix H

PALEONTOLOGICAL RESOURCES

Paleontological Resources Impact Evaluation

Date:	June 17, 2024
Project name:	Moraga–Oakland X 115 kV Rebuild Project
Attention:	Christophe Descantes
Client:	Pacific Gas and Electric Company
Prepared by:	MariaElena Conserva/Earthview Science
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1. Summary

This Paleontological Resources Impact Evaluation Report was completed to assess potential paleontological impacts associated with the Moraga–Oakland X 115 kV Rebuild Project (project) and to assist Pacific Gas and Electric Company (PG&E) in complying with laws, ordinances, regulations, and standards pertaining to paleontological resources. The proposed project will be located within the City of Orinda, in unincorporated areas of Contra Costa County, and the Cities of Oakland and Piedmont within Alameda County.

This assessment was conducted according to procedures in *PG&E Paleontological Resources Standards and Procedures* (PG&E 2015) and includes a review of geologic maps, institutional records, scientific literature, aerial imagery, and project plans.

This assessment finds that the project area has paleontological sensitivity ranging from very low to high (Bureau of Land Management Potential Fossil Yield Classification [PFYC] System Classes 1 to 4).

2. Project Description

2.1 Overview

The project will include rebuilding the four PG&E existing 115 kV circuit lines and structures, and minor modifications to Moraga and Oakland X substations. Approximately 4 miles of the existing 5 miles of overhead lines will be rebuilt overhead, and approximately 1 mile will be rebuilt in city streets. Project operation and maintenance will be conducted with existing staffing using existing access.

2.2 Ground-Disturbing Activity

Ground-disturbing work will be associated with the following project elements:

Power line structure installation. Two lines will be rebuilt as double-circuit overhead lines for approximately 3.9 miles from Moraga Substation to the intersection of Park Boulevard and Estates Drive in Oakland. Approximately 48 replacement structures (towers or poles) and four transition pole structures will be installed in new locations along the rebuilt overhead lines. In addition, three transition structures will be installed near Oakland X Substation. The excavation method for towers and poles will most likely be augering or micropile installation. The maximum augering excavation dimensions are expected to be approximately 3-8 feet in diameter and approximately 30 feet deep. Structures installed by micropile will not create spoils.

- **Guard structure installation.** Guard structures may be created with line trucks or wooden poles with cross-beams. Where wooden poles are used, an auger will excavate holes where the wood poles will be

embedded. A hole is expected to be excavated up to approximately 8 feet deep and have an approximately 20 to 24-inch diameter. The drill diameter will be less than 3 feet.

- **Power line structure removal.** Where the concrete foundation is not left in place, it will be removed to up to approximately 4 feet below ground using hand tools and jack hammers as needed.
- **Duct banks**. Two double-circuit underground duct banks will be installed for approximately 1.2 miles from the intersection of Park Avenue and Estates Drive to Oakland X Substation. Trench excavation for the duct bank will be approximately 4 feet wide by approximately 5 feet deep on average, but may occasionally be deeper (approximately 10 feet), depending on field conditions, the presence of other utilities, and depth of vaults along the route.
- **Vaults**. The line rebuilt in an underground configuration will require the installation of vaults at approximately 1,200-foot intervals. Each vault will require an approximately 42-foot-long, 18-foot-wide, and 13-foot-deep excavation.
- **Moraga Substation**. Limited modifications are planned within Moraga Substation to upgrade 115 kV components. No modifications outside or to the existing Moraga Substation fence line are planned, and no excavation will occur.
- **Oakland X Substation**. Limited modifications are planned within Oakland X Substation to upgrade 115 kV components. No modifications outside or to the existing Oakland X Substation fence line are planned, and no excavation will occur.
- **Blading**. Blading may be required in some locations for access roads and work areas. One landslide will be repaired on the existing dirt access road to EN9 and ES10.

3. Regulatory Setting

This section summarizes the state and local regulatory context and professional standards that apply to paleontological resources in the project vicinity. No federal regulations related to paleontological resources are applicable to the project.

3.1 State

3.1.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) encourages the protection of all aspects of the environment by requiring state and local agencies to prepare multidisciplinary analyses of the environmental impacts of a proposed project, and to make decisions based on the findings of those analyses.

Treatment of paleontological resources under CEQA generally is conducted according to guidance from the Society for Vertebrate Paleontology (SVP) or other agencies (Bureau of Land Management (BLM) or U.S. Forest Service (USFS)), and typically includes identification, assessment, and development of mitigation measures for potential impacts to significant or unique resources.

Appendix G of the CEQA Guidelines provides guidance relative to significant impacts on paleontological resources, which states that a project normally will result in a significant impact on the environment if it will disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study.

3.1.2 California Public Resources Code

The State of California Public Resources Code (Chapter 1.7), Sections 5097.5 and 30244, includes additional state-level requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting

from development on state lands, define the removal of paleontological sites or features from state lands as a misdemeanor, and prohibit the removal of any paleontological site or feature from state land without permission of the applicable jurisdictional agency. Section 30244 requires reasonable mitigation for impacts on paleontological resources that occur as a result of development on public lands. Further, California Penal Code Section 622.5 sets the penalties for damage or removal of paleontological resources.

3.3 Local

City and county general plans may include objectives, policies, and actions for identifying and protecting paleontological resources. However, because the California Public Utilities Commission has exclusive jurisdiction over utility project siting, design, and construction, PG&E is not subject to local discretionary regulations. A description of local policies and regulations for paleontological resources is provided for informational purposes and to assist with CEQA review.

The general plans of Contra Costa County and the Cities of Orinda, Oakland, and Piedmont were reviewed for provisions relevant to paleontological resources (Contra Costa County 2005; City of Orinda 1987; City of Oakland 1996; City of Piedmont 2009).

The *Contra Costa County General Plan* calls out significant ecological resource areas in the county, including four areas with high concentrations of fossils, the closest of which is Siesta Valley, approximately 2 miles from the project area (Contra Costa County 2005, page 8-5). The plan stipulates that developers "provide information to the County on the nature and extent of the biotic resources that exist in the area. The County Planning Agency shall be responsible for determining the balance between uses of the land and the protection of resources. The cumulative impacts on the natural resources from other rural uses, such as agriculture, mining, or wind energy, must be examined and addressed as part of the review of applications. Both public and private stewardship of the resources within unique natural areas shall be considered as long as the protection is long-term and guaranteed in some manner."

The Open Space, Conservation, and Recreation Element of the *City of Oakland General Plan* stresses the importance of paleontological resources as follows: "Some of Oakland's most important natural assets are 'earth resources' including soils and minerals, archaeologic and fossil remains, and the geologic formations that define the city's topography" (City of Oakland 1996, page 3.2). However, the General Plan does not explicitly address paleontological resources in policies, goals, or objectives.

No provisions related to paleontological resources were found for Orinda or Piedmont.

3.4 Professional Standards

SVP is an organization of professional and academic paleontologists that established standard guidelines (SVP 1995, 2010) for practices regarding paleontological resource assessments, monitoring and mitigation, data and fossil recovery, sampling procedures, specimen preparation, identification, and museum curation. However, these guidelines were developed at an institutional level dedicated to scholarship and education rather than resource management or regulatory compliance.

In 2014, a white paper that includes best mitigation practices for paleontological studies was published. The mitigation practices outlined in this paper have a consensus among professional paleontologists regarding field methods, reporting standards, qualifications, and other procedures for conducting paleontological resource management activities (Murphey et al. 2014). PG&E has incorporated many of these findings into its guidance and assumes that professional paleontologists follow standards outlined by SVP, BLM, and other professional organizations except where they conflict with PG&E guidelines.

4. Methods

Existing data were analyzed according to *PG&E Paleontological Resources Standards and Procedures* (PG&E 2015). The analysis included (1) geologic map review, (2) scientific literature review, (3)

institutional paleontological records search, and (4) aerial imagery review. Several geological maps were reviewed for this analysis. The map that provided the most detailed surficial geology of the project area was chosen: Graymer (2000) at a 1:50,000 scale. Geological and paleontological literature relevant to the project area was reviewed. Databases from the University of California, Museum of Paleontology (UCMP) and Paleobiology Database (PBDB) were searched for paleontological records within 1 mile of the project area (PBDB 2023; UCMP 2023). Google Earth aerial imagery was reviewed for physiographic context and land use.

The study area for this evaluation includes the maximum project footprint plus a half-mile buffer beyond the project (Figure 1).

5. Results

5.1 Geologic Setting

The project area is within the Coast Ranges geomorphic province (California Geological Survey 2002), extending approximately 5 miles from the East Bay Hills to the sloping alluvial plain along the Bay. The complex geology of the East Bay Hills reflects the forces that have shaped the region. The East Bay Hills are a sequence of Mesozoic rocks overlain by younger strata. The Franciscan Complex, likely composed of Jurassic oceanic crust, pelagic deposits, and turbidites, underlies most of the Bay Area and crops out in a portion of the study area (Graymer 2000). Another Bay Area basement rock sequence crops out in the project area – the Great Valley Complex, representing accreted and deformed ocean crust and thick turbidite sequences. It can be divided into the Great Valley Sequence and Coast Range Ophiolite, both of which crop out in the project area. Younger, fault-bounded rock bodies are grouped into assemblages (Graymer 2000). The project area contains rock sequences from Assemblage I, which dates from the Paleocene to the Miocene, and Assemblage II, which dates to the Pliocene. These assemblages and complexes are described in greater detail in Section 5.2. Refer to Figure 2 for geological ages.

West of the East Bay Hills is the San Francisco Bay Area coast plain. The San Francisco Bay occupies a depression in the Coast Ranges between the San Andreas Fault to the west and the Hayward Fault to the east. This depression filled with sediments eroded from the hills and deposited by streams flowing into the Bay, forming a thick layer of sediment from the Pleistocene and Holocene periods. The west end of the study area is on an alluvial fan extending from the hills toward the Bay.

Major geographic features in the project area include the Hayward Fault line, Sausal Creek, and Shepherd Creek. The topography in the area consists of rolling hills, vegetated canyons, and higher elevations in the eastern and central sections of the project. A more gradual slope with less topographical variation occurs in the western portion of the project. Project elevation ranges from approximately 650 feet above sea level at Moraga Substation to approximately 1,370 feet above sea level when the lines crest the Oakland Hills and then to approximately 140 feet above sea level at Oakland X Substation.

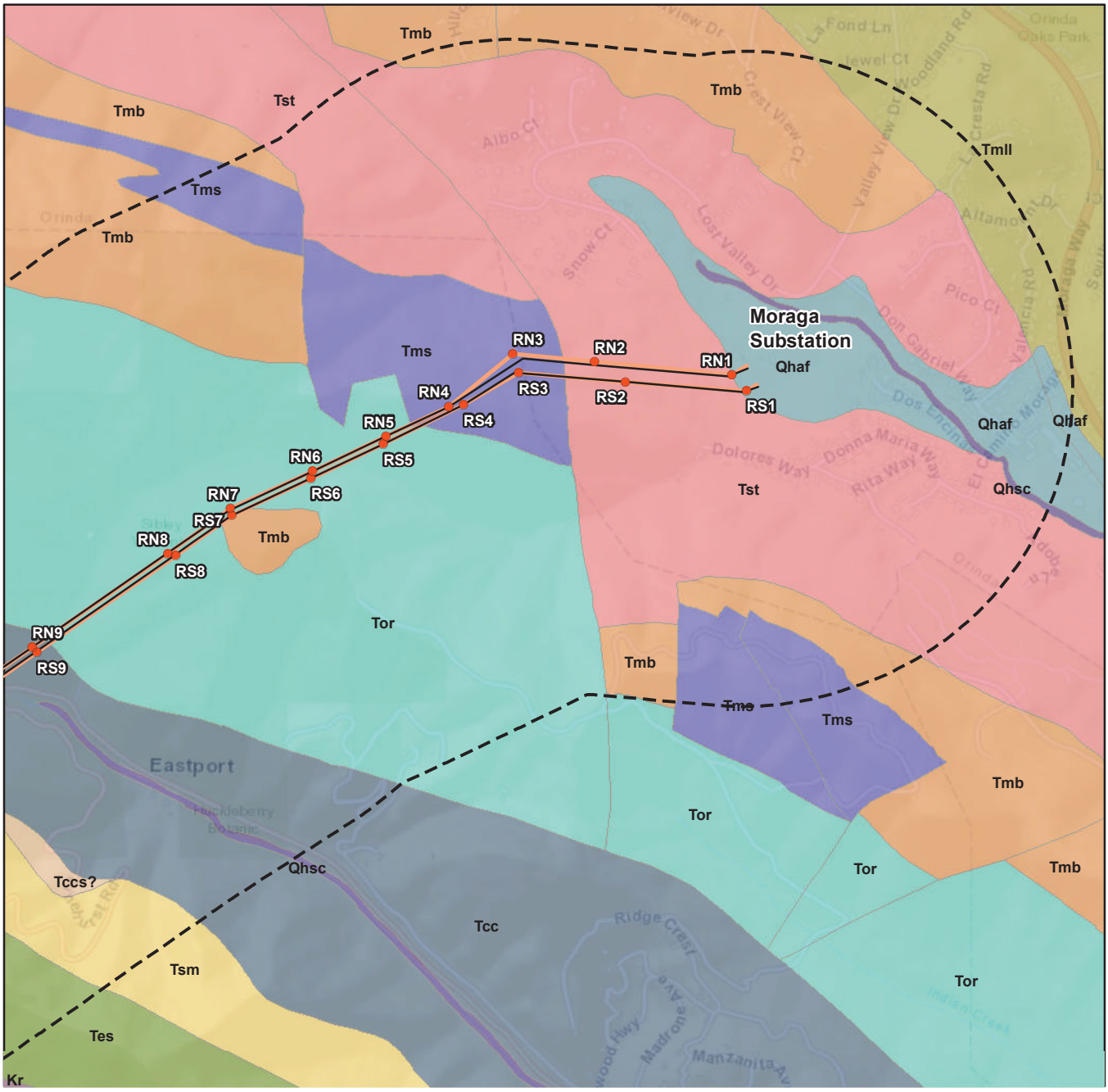
5.2 Geologic Units

Geologic units in the study area are shown on the map in Figure 1 and described in the following sections from youngest to oldest.

5.2.1 Quaternary Deposits

These deposits span recent, Holocene, and Pleistocene periods. In the study area, they are located in valley bottoms and at the west end of the project area along the coastal plain.

- **Artificial fill (af)** is material deposited by humans from various sources.



Legend

Overhead Structures
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed
- 0.5-mile Project Buffer

Geologic Units

Quaternary Deposits
- Qhsc - stream channel deposits
- Qhaf - alluvial and fluvial deposits (Holocene)

Assemblage I
- Tst - Siesta Formation
- Tms - Interflow Sedimentary Rocks
- Tmb - Moraga Formation
- Tor - Orinda Formation
- Tcc - Claremont chert
- Tccs?
- Tsm - Glauconitic mudstone
- Tes - Mudstone

Assemblage II
- Tmll - Mulholland Formation

Great Valley Sequence
- Kr - Redwood Canyon Formation

Version: 3/19/2024

N

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Miles

Figure 1. Page 1 of 4
Geologic Units
Oakland Power Reinforcement Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Geology Data Source: Graymer, 2000

Jacobs

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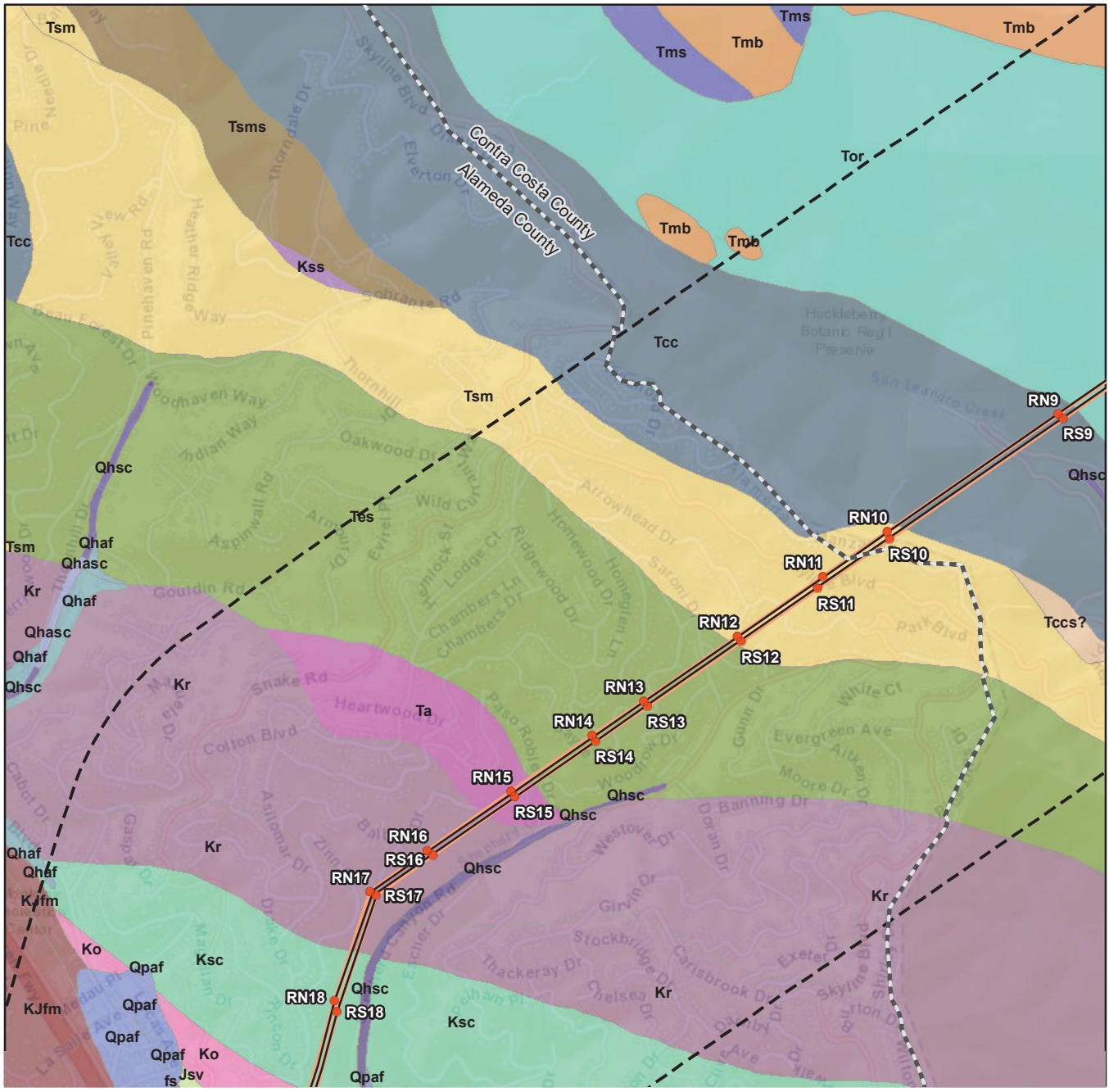

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Legend

Overhead Structures
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed
- 0.5-mile Project Buffer

Geologic Units

Quaternary Deposits
- Qhasc - artificial stream channels
- Qhsc - stream channel deposits
- Qhaf - alluvial and fluvial deposits (Holocene)
- Qpaf - alluvial and fluvial deposits (Pleistocene)

Assemblage I
- Tsms - interbedded sandstone
- Tms - Interflow Sedimentary Rocks
- Tmb - Moraga Formation
- Tor - Orinda Formation
- Tcc - Claremont chert
- Tccs?
- Tsm - Glauconitic mudstone
- Tes - Mudstone
- Ta - Glauconitic sandstone

Great Valley Sequence
- Kss - lithic sandstone
- Kr - Redwood Canyon Formation
- Ksc - Shepard Creek Formation
- Ko - Oakland Conglomerate
- Jsv - Keratophyre

Franciscan Complex
- KJfm - Franciscan Complex
- fs - Graywacke

N

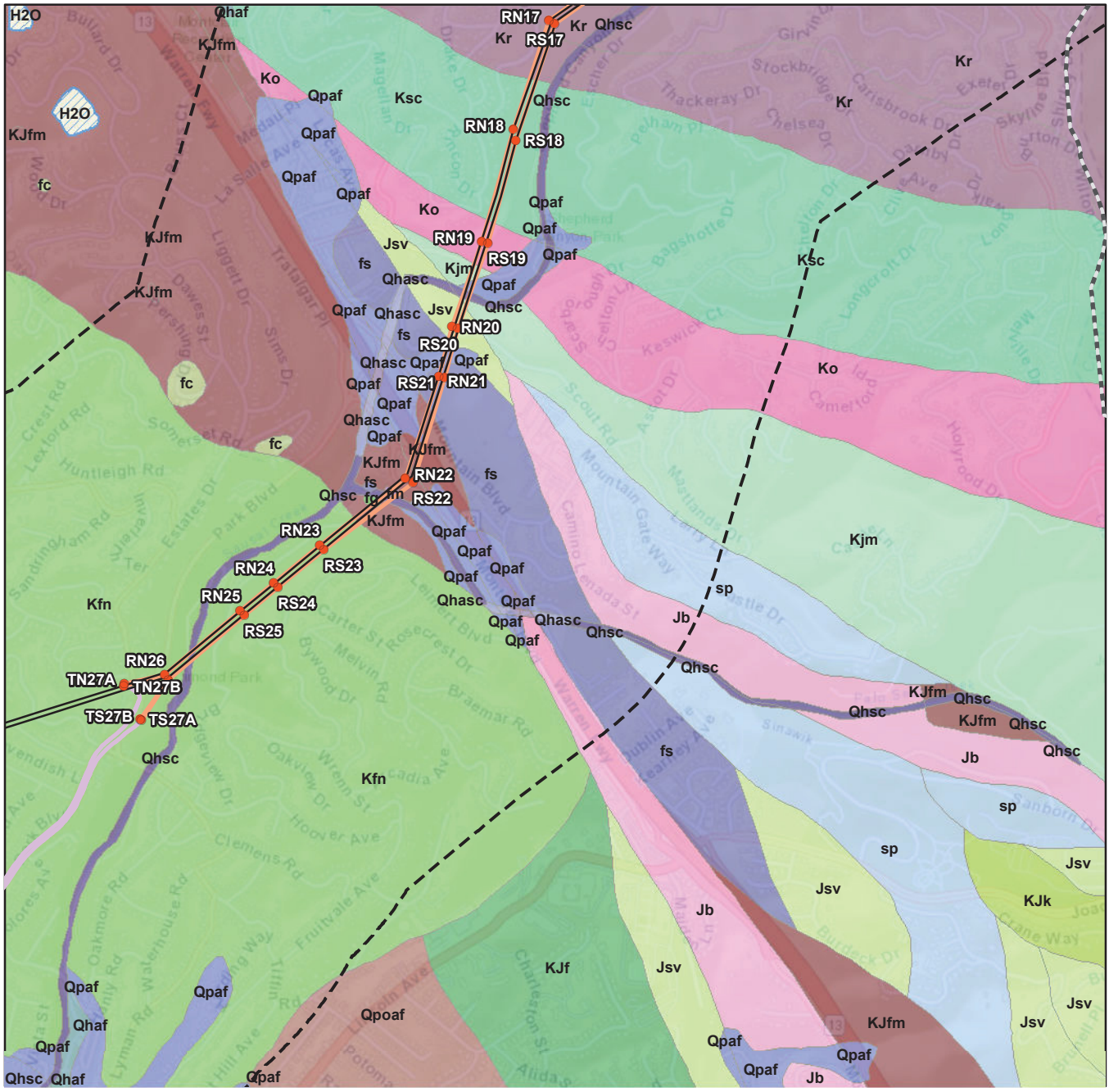
0 0.25 Miles

Figure 1. Page 2 of 4
Geologic Units
Oakland Power Reinforcement Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Geology Data Source: Graymer, 2000

Jacobs



Legend

Overhead Structures
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed
- 0.5-mile Project Buffer

Geologic Units

Quaternary Deposits
- Qhasc - artificial stream channels
- Qhsc - stream channel deposits
- Qhaf - alluvial and fluvial deposits (Holocene)
- Qpaf - alluvial and fluvial deposits (Pleistocene)
- Qpoaf - alluvial terrace (Pleistocene)

Great Valley Sequence
- Kr - Redwood Canyon Formation
- Ksc - Shepard Creek Formation
- Ko - Oakland Conglomerate
- Kjm - Joaquin Miller Formation
- KJk - Knoxville Formation
- Jsv - Keratophyre

Coast Range Ophiolite
- Jb - Massive basalt and diabase
- sp - Serpentinite

Franciscan Complex
- Fm - glaucophane schist
- Fg - greenstone
- Fc - chert
- KJf - undivided Franciscan Complex rocks
- Kfn - Sandstone Novato Quarry
- KJfm - Franciscan Complex
- fs - Graywacke

Other
- H20 - Water

Version: 3/19/2024

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0 0.25 Miles

Figure 1. Page 3 of 4
Geologic Units
Oakland Power Reinforcement Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Geology Data Source: Graymer, 2000

Jacobs

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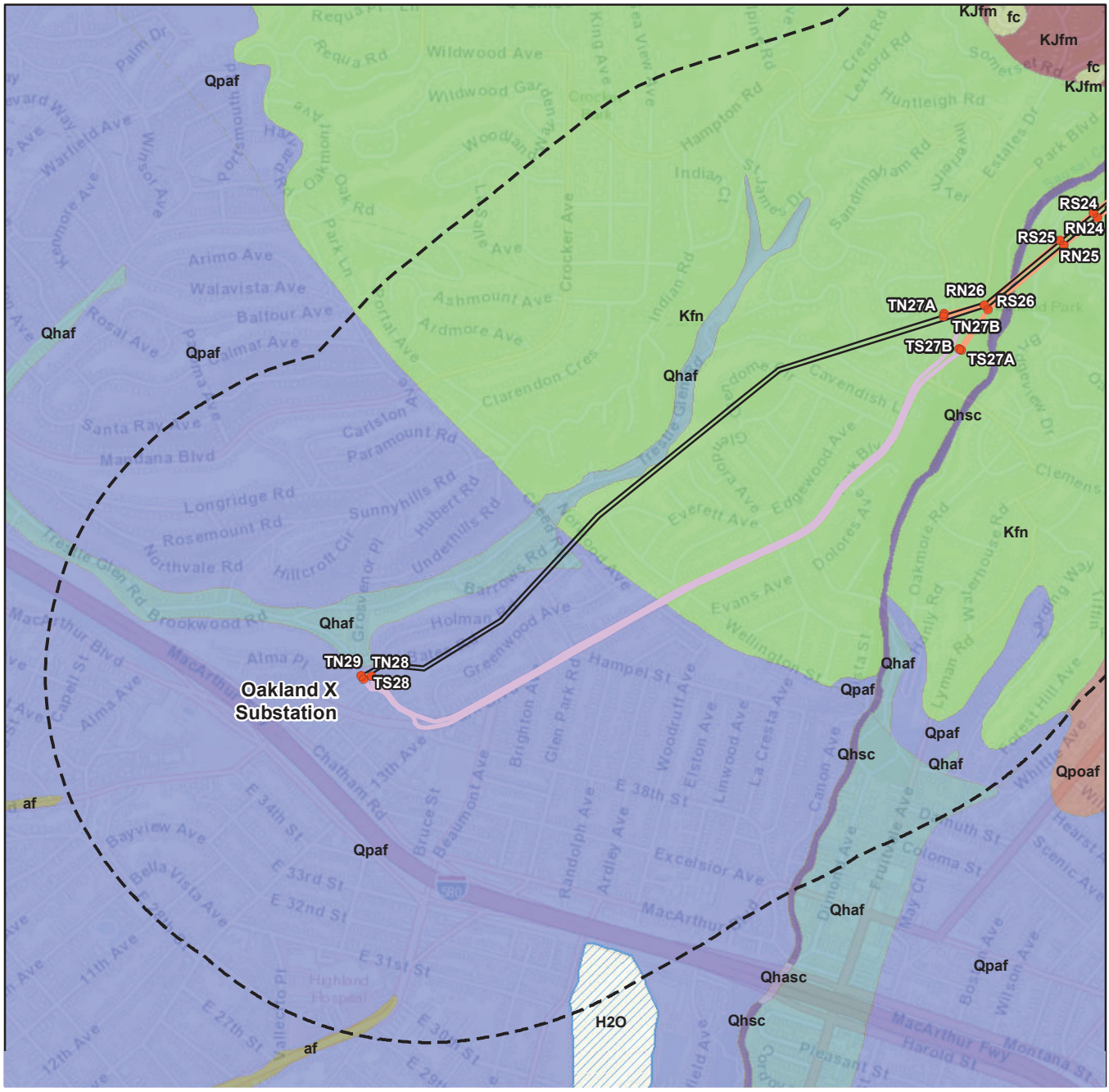


Version: 3/19/2024

Legend

Overhead Structures

- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed
- 0.5-mile Project Buffer

Geologic Units

Quaternary Deposits

- Qhasc - artificial stream channels
- Qhsc - stream channel deposits
- af - artificial fill
- Qhaf - alluvial and fluvial deposits (Holocene)
- Qpaf - alluvial and fluvial deposits (Pleistocene)
- Qpoaf - alluvial terrace (Pleistocene)

Franciscan Complex

- Fc - chert
- Kfn - Sandstone Novato Quarry
- KJfm - Franciscan Complex

Other

- H20 - Water

N

0 0.25

Miles

Figure 1. Page 4 of 4
Geologic Units
Oakland Power Reinforcement Project
Pacific Gas & Electric Company

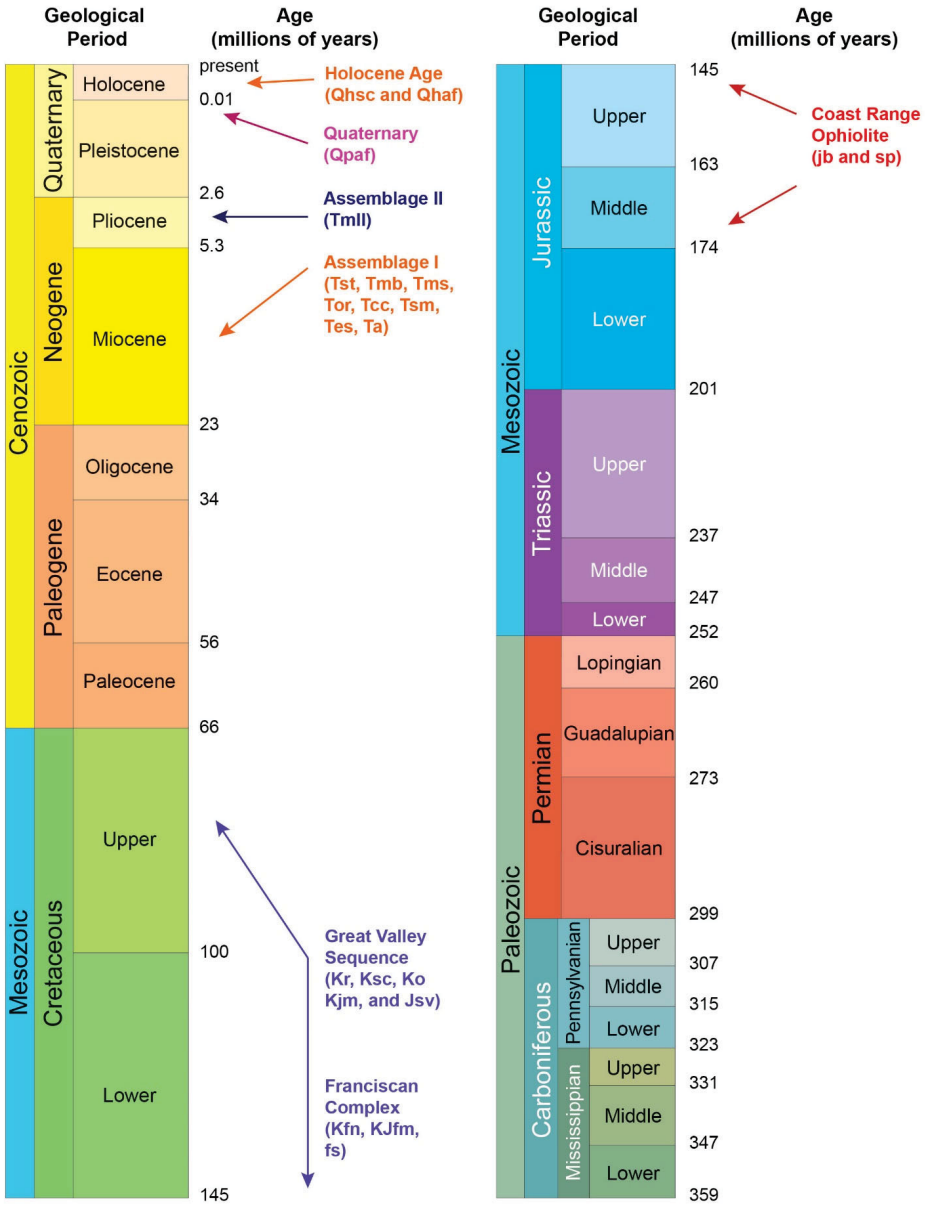
Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Geology Data Source: Graymer, 2000

Jacobs

- **Stream channel deposits (Qhsc)** are Holocene-age sand, clay, silty sand, or sandy gravel with minor cobbles of modern stream courses.
- **Holocene alluvial deposits (Qhaf)** are brown to tan, medium dense to dense, gravely sand or sandy gravel that grades upward to sandy or silty clay. The best-developed Holocene alluvial fans are on the San Francisco Bay plain. All other alluvial fans and fluvial deposits are confined to narrow valley floors.
- **Quaternary alluvial deposits (Qpaf)** are Pleistocene-age alluvial and fluvial deposits. They are brown, dense, gravelly and clayey sand or gravel that grades upward to sandy clay. These deposits are located along most modern stream channels outboard of Holocene deposits. They are distinguishable from younger deposits by higher topographic position, greater degree of dissection, and stronger soil profile development. They are overlain by Holocene deposits on the lower parts of the alluvial plain and incised by channels partly filled with Holocene alluvium on higher parts of the alluvial plain.

Figure 2. Geologic Periods Relevant to this Assessment



Source: modified from International Chronostratigraphic Chart (Cohen et al., 2022)

5.2.2 Assemblage I

Assemblage I is a series of Miocene to Paleocene-age rock bodies at the eastern end of the project area, notable for containing volcanic material (Graymer 2000). The constituent rock bodies are relatively narrow and form a series of East Bay Hills ridges at the east end of the study area. Assemblage I rock bodies in the study area include:

- **Siesta Formation (Tst)** is a narrow, late Miocene-age formation that outcrops for approximately 6 miles, extending 4 miles north of the project area and 2 miles to the south. It consists of nonmarine siltstone, claystone, sandstone, and minor limestone.
- **Moraga Formation (Tmb and Tms)** is a late Miocene-age volcanic rock body with two subunits: Tmb and Tms. Tmb is basalt and andesite with minor rhyolite tuff that crops out discontinuously across approximately 9 miles. Its north end is broad, narrowing to the south. Tms is part of the Moraga Formation, consisting of interflow sedimentary rocks.
- **Orinda Formation (Tor)** is a late Miocene-age formation widespread in the East Bay Hills. It is distinctly to indistinctly bedded, pebble to boulder conglomerate, conglomeratic sandstone, coarse- to medium-grained lithic sandstone, and green and red siltstone and mudstone. Conglomerate clasts are subangular to well rounded and contain a high percentage of detritus derived from the Franciscan complex.
- **Claremont chert (Tcc)** is a late to middle Miocene-age laminated, bedded chert, minor brown shale, and white sandstone. Chert crops out as distinct, massive to laminated, gray or brown beds. Distinctive black, laminated chert crops out locally in the Berkeley Hills.
- **Glauconitic mudstone (Tsm)** is Miocene and Oligocene-age brown mudstone interbedded with sandy mudstone with prominent glauconite grains. The unit is bounded below and above by faults. It was mapped as Sobrante(?) Formation by Radbruch (1969).
- **Mudstone (Tes)** is Eocene-age green and maroon, foraminifera-rich mudstone, locally interbedded with hard, distinctly bedded, mica-bearing, quartz sandstone. This unit is bounded above and below by faults.
- **Glauconitic sandstone (Ta)** is Paleocene-age, coarse-grained, green, glauconite-rich, lithic sandstone with well-preserved coral fossils. Locally interbedded with gray mudstone and hard, fine-grained, mica-bearing quartz sandstone. Outcrop of this unit is restricted to a small, fault-bounded area in the Oakland Hills.

5.2.3 Assemblage II

- **Mulholland Formation** (**TmII)** is a Pliocene-age formation of mostly sandstone and mudstone. It forms the ridgeline at the eastern edge of the study area but does not underlie the project area.

5.2.4 Great Valley Sequence

Great Valley Sequence is a series of Jurassic and Cretaceous-age rock bodies. These units are thickly deposited accumulations of mudstone, sandstone, and conglomerate. They represent sequences of turbidites deposited on the oceanic crust. The Great Valley Sequence is west of Assemblage I and includes the following units:

- **Redwood Canyon Formation (Kr)** is distinctly bedded, cross-bedded to massive, thick beds of biotite, quartz-rich wacke, and thin interbeds of mica-rich siltstone.
- **Shepard Creek Formation (Ksc)** is distinctly bedded mudstone, shale, mica-rich siltstone, and thin fine-grained, mica-rich wacke beds.
- **Oakland conglomerate (Ko)** is massive, medium- to coarse-grained biotite, quartz-rich wacke, and prominent interbedded pebble-to-cobble conglomerate lenses. Conglomerate clasts are distinguished by a large amount of silicic volcanic detritus, including quartz porphyry rhyolite.

- **Joaquin Miller Formation (Kjm)** is thinly bedded shale with minor sandstone. The shale grades into thinly bedded, fine-grained sandstone near the top of the formation.
- **Keratophyre (Jsv)** are highly altered intermediate and silicic volcanic and hypabyssal rocks.

5.2.5 Coast Range Ophiolite

West of the Great Valley Sequence is a series of rock bodies known as Coast Range Ophiolite. It is a slab of oceanic upper mantle and crust formed from the middle to the late Jurassic. The ophiolite sequences that occur in the study area include:

- **Massive basalt and diabase (jb)** are types of igneous rock with a similar composition. Basalt is considered extrusive because it cools on or near the surface whereas diabase cools underground.
- **Serpentinite (sp)** is a metamorphic rock that forms in midocean ridges and in subduction zones.

5.2.6 Franciscan Complex

West of Coast Range Ophiolite is a series of rock bodies known as the Franciscan Complex, which consists in this area of deformed and metamorphosed sedimentary and volcanic rocks of late Jurassic to late Cretaceous age. The Franciscan Complex units in the study area are:

- **Sandstone Novato Quarry (Kfn)** is distinctly bedded to massive, mica-bearing, lithic wacke. Where distinctly bedded, sandstone beds are about 1 meter thick and siltstone interbeds are a few centimeters thick. Sedimentary structures are well preserved.
- **Franciscan Complex (KJfm)** is sheared black argillite, graywacke, and minor green tuff, containing blocks and lenses of graywacke and meta-graywacke, chert, shale, metachert, serpentinite, greenstone, amphibolite, tuff, eclogite, quartz schist, greenschist, basalt, marble, conglomerate, and glaucophane schist. Blocks range in size from pebbles to several hundred meters in length.
- **Graywacke and meta-graywacke (fs)** are sandstone rocks formed by submarine currents when sediment laden water moves rapidly down a slope forming a sort of underwater avalanche. A mass of sediment called, a turbidite, is deposited on the seafloor.

5.3 Literature and Records Search Results

Institutional records searches and scientific literature reviews were performed for the study area and surroundings. Many of the geologic units associated with the project are not known to be fossiliferous or have no fossil records associated with them in this area.

The geologic units in the study area in which vertebrate macrofossils have been found are, from youngest to oldest: Pleistocene-age sediment, Siesta Formation, Moraga Formation, Orinda Formation, Claremont Formation, and Mulholland Formation. The fossil records for these units are discussed in the following subsections.

Few records of invertebrate fossils were found for the geologic units in the project area in Contra Costa or Alameda counties. These included two invertebrate fossils recorded for the Siesta Formation (refer to Table 2). Three invertebrate fossils were recorded as part of the Orinda Formation (refer to Table 4). In addition, three invertebrate fossil localities are recorded as part of the Redwood Canyon Formation; however, no specimen type is listed for any of the localities. Well-preserved fossil corals are reported in Graymer (2000) and Alden (2023) in glauconitic sandstone on Saroni Drive within half a mile of the project area.

Microfossils are present in various units in the study area but, when present, generally are found in abundance.

5.3.1 Pleistocene-Age Fossils

Pleistocene-age fossils have been found on the East Bay Coastal Plain in sediment mapped as Holocene or Pleistocene at the surface. The west end of the project area is on Pleistocene-aged sediment (Qpaf). Table 1 lists 13 fossil locality records within 5 miles of the project area. The closest fossil locality is at Montclair Playground, less than 1 mile from the project area. The other 12 localities are more than 2 miles away.

Table 1. Pleistocene-Age Fossil Localities within 5 Miles of the Project Area

	Locality Name	Location	ID	Taxon	Other Information	Reference
1	Montclair Playground	Oakland	V3933	*Mammuthus, Camilidae*	N/A	UCMP 2023
2	Oakland 81st Ave	Oakland	V4045	*Mammuthus*	Excavation at Sunshine Bisquit Co.	Savage 1951; UCMP 2023
3	Oakland Coliseum	Oakland	V6420	*Mammuthus, Glossotherium*	Construction of sports arena	UCMP 2023
4	Alameda	Alameda Island	not listed	*Megalonyx*	Found on east end	Hay 1927
5	Alameda Canal	Alameda	V69168	*Glossotherium*	N/A	UCMP 2023
6	Harrison St Tunnel	Posey Tube	V2841	*Mammuthus*	Alameda tube construction	Savage 1951; UCMP 2023
7	Alameda Tube Excavation	Webster St Tube	V6227	26 specimens, various	Alameda tube construction	UCMP 2023
8	Webster St	Alameda County	V69170	*Proboscidea*	BART construction?	UCMP 2023
9	Aquatic Park	Berkeley	V4007	*Bison*	N/A	Savage 1951; UCMP 2023
10	University Ave	Berkeley	V6644	*Mammut*	BART construction?	UCMP 2023
11	Shattuck Ave 1	Berkeley	V67194	*Glossotherium*	BART construction?	UCMP 2023
12	Berkeley Municipal Wharf	Berkeley	V3613	*Mammuthus*	Found by WPA 1936	Savage 1951; UCMP 2023
13	Oak Knoll Hospital View	Oakland	V5834	26 specimens, various	N/A	UCMP 2023

5.3.2 Siesta Formation Fossils

The Siesta Formation (Tst) is an Assemblage I geologic unit of late Miocene age. It forms a narrow belt, oriented northwest-southwest near the east end of the Project area. Table 2 records 15 fossil localities in this unit, 11 of which are vertebrates. The closest localities are the “Curtis” locality 2 miles southwest of the project area and 5 localities in the Siesta Valley approximately 2 miles northwest. The other fossil localities are all within 4 miles of the project area.

Table 2. Siesta Formation (Tst) Fossil Localities in the East Bay

	ID	Fossil Type	Locality Name	County	Taxon	Reference
1	V6000	V	Curtis	Contra Costa	*Equidae*	UCMP 2023

	ID	Fossil Type	Locality Name	County	Taxon	Reference
2	-707	IV	Siesta Valley 1	Contra Costa	*Camelidae*	UCMP 2023
3	V3652	V	Siesta Valley 2	Contra Costa	Various	UCMP 2023
4	V4604	V	Siesta Valley 3	Contra Costa	Various	UCMP 2023
5	V68113	V	Siesta Valley 4	Contra Costa	*Camelidae*	UCMP 2023
6	V75231	V	Siesta Valley 5	Contra Costa	*Equidae*	UCMP 2023
7	V2404	V	Bald Peak	Alameda	Various	UCMP 2023
8	-1082	V	Bald Peak N	Contra Costa	Various	UCMP 2023
9	V67102	V	Bald Peak N	Contra Costa	*Equidae*	UCMP 2023
10	V75273	V	Gompho Springs	Contra Costa	Not listed	UCMP 2023
11	V6352	V	Melvin's	Contra Costa	*Camelidae*	UCMP 2023
12	V75272	V	Tom's Sites	Contra Costa	Not listed	UCMP 2023
13	P3832	P	Siesta	Alameda	Not listed	UCMP 2023
14	B7268	I	Not listed	Contra Costa	*Gastropoda*	UCMP 2023
15	IP12002	I	Not listed	Contra Costa	*Gastropoda*	UCMP 2023

V = Vertebrate, I = Invertebrate, P = Plant

5.3.3 Moraga Formation Fossils

Two fossil localities were recorded in the Moraga Formation (Tmb and Tms) (Table 3). The first is less than 2 miles from the project area. The second is approximately 2.5 miles from the project area and is recorded as having been found in volcanic tuff.

Table 3. Moraga Formation (Tmb and Tms) Fossil Localities in the East Bay

	ID	Fossil Type	Locality Name	County	Taxon	Reference
1	V85014	V	Curtis Class	Contra Costa	*Camilidae*	UCMP 2023
2	V6580	V	Roadcut Canyon	Contra Costa	*Equidae*	UCMP 2023

V = Vertebrate, I = Invertebrate, P = Plant

5.3.4 Orinda Formation Fossils

The Orinda Formation (Tor) has at least 20 records of vertebrate fossil localities in Contra Costa County (Table 4). The locality known as "Bellshire" is the closest to the project area at approximately 1.5 miles north. Several others, including the Caldecott Tunnel and Orinda localities, are approximately 2 miles away.

Table 4. Orinda Formation (Tor) Fossil Localities in the East Bay

	ID	Fossil Type	Locality Name	County	Taxon	Reference
1	V3603	V	Bellshire	Contra Costa	*Artiodactyla*	UCMP 2023; Stirton 1939
2	V3615	V	Caldecott Tunnel 1	Contra Costa	*Camelidae*	UCMP 2023

	ID	Fossil Type	Locality Name	County	Taxon	Reference
3	V3651	V	Caldecott Tunnel 2	Contra Costa	Not listed	UCMP 2023
4	V6031	V	Caldecott Tunnel 2	Contra Costa	*Camelidae*	UCMP 2023
5	V6224	V	Caldecott Tunnel 3	Contra Costa	Various	UCMP 2023
6	V6336	V	Caldecott Tunnel 3	Contra Costa	Various	UCMP 2023
7	V12012	V	Caldecott Tunnel 4th Bore Orinda General	Contra Costa	Various	UCMP 2023
8	V70135	V	Caldecott Tunnel 5	Contra Costa	Various	UCMP 2023
9	V2837	V	Claremont Tunnel 1	Contra Costa	*Equidae*	UCMP 2023
10	V2839	V	Claremont Tunnel 2	Contra Costa	*Equidae*	UCMP 2023
11	V2840	V	Claremont Tunnel 3	Contra Costa	*Mammutidae*	UCMP 2023
12	-1035	IV	Bollinger Canyon 2	Contra Costa	*Equidae*	UCMP 2023
13	-1042	IV	Bollinger Canyon 3	Contra Costa	*Equidae*	UCMP 2023
14	V3523	V	Elkington	Contra Costa	*Camelidae*	UCMP 2023
15	V83085	V	Kokinos	Contra Costa	*Equidae*	UCMP 2023
16	V1001	V	Orinda 1	Contra Costa	*Equidae*	UCMP 2023
17	V92089	V	Orinda Gomphothere	Contra Costa	*Gomphotheriidae*	UCMP 2023
18	V3641	V	Rocky Ridge 3	Contra Costa	*Desmostylidae*	UCMP 2023
19	V83070	V	Round Top	Contra Costa	*Equidae*	UCMP 2023
20	V91210	V	Round Top North	Contra Costa	Not listed	UCMP 2023
21	V74154	V	Round Top South	Contra Costa	*Equidae*	UCMP 2023
22	V69121	V	San Pablo Ridge	Contra Costa	Not listed	UCMP 2023
23	V6239	V	Whitten	Contra Costa	*Camelidae*	UCMP 2023
24	V1102	V	Wildcat Canyon District	Contra Costa	*Leporidae*	UCMP 2023; Stirton 1939
25	589	IM	Wildcat Canyon	Contra Costa	*Ostracoda*	UCMP 2023
26	140-		N/A	Contra Costa	*Gastropoda*	UCMP 2023
27	A2568	I	N/A	Contra Costa	*Bivalvia*	UCMP 2023
28	A2569	I	N/A	Contra Costa	*Bivalvia, gastropoda*	UCMP 2023

V = Vertebrate, I = Invertebrate, P = Plant, M = Microfossil

5.3.5 Claremont Formation Fossils

Four records of vertebrate fossils were found in Alameda County in the Claremont Formation but none in Contra Costa County (Table 5). They were found during the fourth bore of the tunnel, less than 2 miles from the project area.

Table 5. The Claremont Formation Fossil Localities in the East Bay

	ID	Fossil Type	Locality Name	County	Taxon	References

1	V12004	V	Caldecott 4th Bore Claremont General	Alameda	*Osteichthyes, Chondrichthyes*	UCMP 2023
2	V12009	V	Caldecott Tunnel 4th Bore Claremont Chert	Alameda	*Cetacea*	UCMP 2023
3	V12010	V	Caldecott Tunnel 4th Bore Claremont Sandstone	Alameda	Not listed	UCMP 2023
4	V12011	V	Caldecott Tunnel 4th Bore Claremont Chert and Shale	Alameda	*Osteichthyes*	UCMP 2023

V = Vertebrate, I = Invertebrate, P = Plant, M = Microfossil

5.3.6 Mulholland Formation Fossils

The Mulholland Formation (TmII) has yielded many Pliocene-age vertebrate fossils (Table 6). This formation is approximately one-half mile east of Moraga Substation.

Table 6. Mulholland Formation Fossil Localities in the East Bay

	ID	Fossil Type	Locality Name	County	Taxon	Reference
1	V5330	V	Avila	Contra Costa	Not listed	UCMP 2023
2	V4717	V	Borghesani	Contra Costa	*Aves*	UCMP 2023
3	V65129	V	Bush	Contra Costa	*Equidae*	UCMP 2023
4	V3935	V	Cull Creek	Alameda	Not listed	UCMP 2023
5	V73148	V	Darren's Bear	Contra Costa	*Agriotherium*	UCMP 2023
6	V5807	V	Donald Drive	Contra Costa	*Equidae*	UCMP 2023
7	V5055	V	Holmes	Contra Costa	*Camilidae*	UCMP 2023
8	V3607	V	Las Trampas Creek	Contra Costa	*Gomphotherium*	UCMP 2023
9	V6814	V	Mudhole	Alameda	*Camilidae*	UCMP 2023
10	V3611	V	Mulholland 2	Contra Costa	Various	UCMP 2023
11	V3862	V	Mulholland 3	Contra Costa	Various	UCMP 2023
12	V4858	V	Mulholland 4	Contra Costa	*Equidae*	UCMP 2023
13	V4955	V	Mulholland 5	Contra Costa	*Equidae*	UCMP 2023
14	V65510	V	Mulholland Fm General	Contra Costa	*Camilidae*	UCMP 2023
15	V5271	V	Mulholland Hill	Contra Costa	*Equidae*	UCMP 2023
16	V4003	V	Orinda Crossroads	Contra Costa	*Equidae*	UCMP 2023
17	V4104	V	Orinda Crossroads 2	Contra Costa	*Camilidae*	UCMP 2023
18	V5017	V	Orinda School House	Contra Costa	Various	UCMP 2023
19	V5018	V	Palos Colorados	Contra Costa	Various	UCMP 2023
20	V5505	V	Rheem	Contra Costa	*Muridae*	UCMP 2023
21	V5048	V	Sacramento Northern Railroad	Contra Costa	*Rhinocerotidae*	UCMP 2023
22	V3303	V	Saint Mary's Banks	Contra Costa	Various	UCMP 2023
23	V6815	V	Saint Mary's College 1	Alameda	*Gomphotherium*	UCMP 2023
24	V6029	V	San Pablo Dam Road	Contra Costa	*Tayassuidae*	UCMP 2023

V = Vertebrate, I = Invertebrate, P = Plant, M = Microfossil

6. Paleontological Significance and Sensitivity

PG&E uses definitions of significance and sensitivity based on the FLPMA, as well as standards developed by agencies and professional societies, including the BLM, SVP, and the California Department of Transportation (PG&E 2015).

6.1 Definition of Significance and Significance Criteria

Significance refers to the scientific importance of fossils. PG&E (2015) considers an individual fossil specimen to be significant if it is identifiable and if it meets one of the following criteria:

- A type specimen (the individual from which a species or subspecies has been described)
- A member of a rare species
- A species that is part of a diverse assemblage (for instance, a site where more than one fossil has been discovered) and from which important information regarding life histories of individuals can be drawn
- An element different from, or more complete than, those now available for its species
- A complete specimen

More specifically, PG&E uses the following research criteria to determine whether a fossil is significant:

- Taxonomy – Fossils that represent rare or unknown taxa, such as defining a new species
- Evolution – Fossils that represent important stages in evolutionary relationships, to fill gaps or enhance under-represented intervals in the stratigraphic record
- Biostratigraphy – Fossils that are important for determining relative geologic age, or for use in stratigraphic correlation
- Paleoecology – Fossils that are important for re-creating ancient community structure and ancient sedimentary environment
- Taphonomy – Fossils that are exceptionally well or uniquely preserved

6.2 Sensitivity Criteria

PG&E uses the PFYC developed by BLM to assess paleontological sensitivity (Table 7). In this system, geologic units are classified based on the relative abundance of scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts. It is important to note that although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher class. The relative abundance of significant localities is the primary determinant for the class assignment.

Table 7. Paleontological Sensitivity of Geologic Units Using BLM Potential Fossil Yield Classification System

Class 1 – Very Low
Geologic units not likely to contain fossil remains that include: ▪ Igneous or metamorphic units ▪ Units precambrian in age or older ▪ Artificial or imported fill material
Class 2 – Low
Geologic units not likely to contain vertebrate or scientifically significant nonvertebrate fossils that include: ▪ Vertebrate or significant invertebrate or plant fossils not present or very rare ▪ Geologic units younger than 10,000 years before present ▪ Recent aeolian deposits ▪ Sediments that exhibit significant physical and chemical changes
Class 3 – Moderate or Unknown
Fossiliferous sedimentary units in which fossil content varies in significance, abundance, and occurrence or they are of unknown fossil potential. These units have the following subclassifications: ▪ Class 3a – Moderate potential: relatively low potential to impact significant fossils but high potential to impact common fossils. They generally exhibit the following characteristics: - Marine in origin with sporadic occurrences of vertebrate fossils - Vertebrate and scientifically significant invertebrate or plant fossils occur intermittently, with low predictability ▪ Class 3b – Unknown potential: sedimentary unit is poorly studied or documented but conditions suggest significant fossils could be present.
Class 4 – High
Geologic units that have a high occurrence of significant fossils that vary in occurrence and predictability. These units have the following subclassifications: ▪ Class 4a – Unit is exposed with little soil or vegetative cover or has extensive outcrop areas with exposed bedrock ▪ Class 4b – Unit is buried by extensive soil or vegetation cover. Exposed outcrops are less than contiguous 2 acres.
Class 5 – Very High
Geologic units that consistently produce scientifically significant fossils. Fossils can be reasonably expected to occur within the impacted area.
Source: Adapted from PG&E 2015.

6.3 Determination of Sensitivity for Geologic Units within Study Area

PFYC criteria from Table 7 were applied to the geologic units in the study area as summarized in Table 8. These sensitivity ratings incorporate the geologic unit description in Section 5.2 and literature and records search in Section 5.3. The ratings also incorporate the extent of proposed earth-moving activities discussed in Section 2.

Table 8. Paleontological Sensitivity of Geologic Units in Study Area

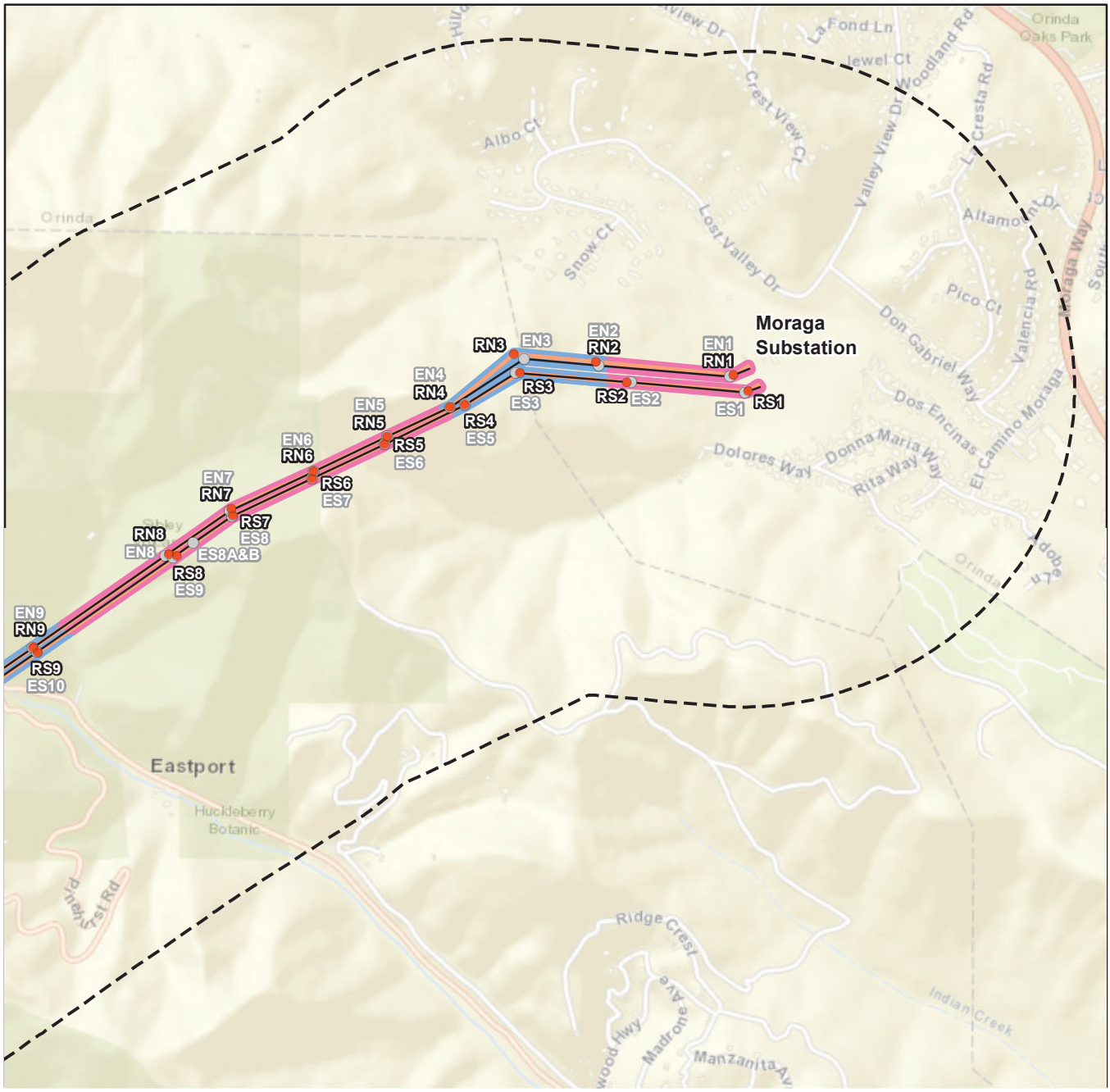
Geologic Unit	Paleontological Sensitivity – PFYC Category	Basis for Sensitivity Rating
Af – Artificial fill	1: very low	Artificial fill has lost its geological context.
Qhsc – stream channel deposits	2: low	Holocene-age sediment generally is considered too young to contain scientifically significant fossils.
Qhaf – Alluvial/fluvial deposits (Holocene)		
Qpaf – Alluvial/fluvial deposits (Pleistocene)	4: high	The project area crosses Pleistocene-age sediment at its west end. Significant vertebrate fossils are periodically found in Qpaf sediment. Because of the extent of excavation for the duct banks and vaults in this unit, there is a high probability that vertebrate fossils will be encountered.
Tst – Siesta Formation	4: high	This formation has many fossil localities relative to the small size of the outcrop. Twelve fossil localities were found within 4 miles of the project area.
Moraga Formation – Tmb and Tms	3a: moderate	Two vertebrate localities were found in these formations. Both are within 2 miles of the project area. This is considered a moderate concentration of fossils considering the extent of the outcrops.
Tor – Orinda Formation	4: high	This formation has 20 vertebrate fossil localities in the East Bay. Several of these are within 2 miles of the project area.
Tcc – Claremont chert	3a: moderate	Only four fossil localities are attributed to this formation. All four were found in the drilling of the Caldecott Tunnel.
Tsm – glauconitic mudstone	2: low	No vertebrate fossil records were found for this unit despite it being disturbed by Caldecott tunnel boring.
Tes – mudstone	2: low	This unit is known to be foraminifera-rich (Graymer 2000). But these microfossils are abundant in this unit.
Ta – glauconitic sandstone	4: high	Well-preserved fossil corals are reported in Graymer (2000). Alden (2023) describes them as being found on Saroni Drive within half a mile of the project area.
TmII – Mulholland Formation	2: low	This formation is fossiliferous but is limited to the study area's eastern margin. It crops out on a ridge east of Moraga Substation. Because the geology changes greatly over small areas, project activities will not likely disturb this formation.
Kr – Redwood Canyon Formation	3: moderate	This formation has yielded a couple marine invertebrate fossils across a large area.
Ksc – Shephard Creek Formation	2: low	No fossil records were found for this unit.
Ko – Oakland Conglomerate	2: low	No fossil records were found for this unit.

Geologic Unit	Paleontological Sensitivity – PFYC Category	Basis for Sensitivity Rating
Kjm – Joaquin Miller Formation	2: low	No fossil records were found for this unit.
Jsv – Keratophyre	1: very low	Intrusive igneous rocks are not paleontologically sensitive.
Jb – Massive basalt and diabase	1: very low	Coast Range Ophiolite are intrusive igneous rocks and other rocks not considered paleontologically sensitive.
Sp - Serpentinite		
Kfn – Sandstone Novato Quarry	2: low	Fossils have been discovered in this unit in Marin County, but none have been found in Alameda County or Contra Costa County.
KJfm – Franciscan Complex	2: low	Franciscan Complex units have undergone low-grade metamorphic processes. Macrofossils are lacking in these units with rare exceptions. Microfossils are present but are found in abundance.
Fs – Graywacke and meta-graywacke		

7. Findings

Figure 3, Paleontological Sensitivity Map, is based on Table 8 and shows the paleontological sensitivity of geologic units underlying existing and rebuilt power line alignments and substations. From Figure 3 and Table 4, the following conclusions can be made.

- Excavation activities deeper than 3 feet in the following geological units have high paleontological sensitivity and have high potential to encounter paleontological resources:
  - Tst – Siesta Formation
  - Tor – Orinda Formation
  - Ta – Glauconitic sandstone
  - Qpaf – Alluvial/fluvial deposits (Pleistocene)
- Excavation activities in other units have very low to moderate potential to encounter paleontological resources. These units include:
  - Af – Artificial fill
  - Qhsc – Stream channel deposits
  - Qhaf – Alluvial/fluvial deposits (Holocene)
  - Tmb/Tms - Moraga Formation
  - Tcc – Claremont chert
  - Tsm – Glauconitic mudstone
  - Tes – Mudstone
  - TmIl – Mulholland Formation
  - Ksc – Shepard Creek Formation
  - Ko – Oakland Conglomerate
  - Kjm – Joaquin Miller Formation
  - Jsv – Keratophyre
  - Jb – Massive basalt and diabase
  - Sp – Serpentinite
  - Kfn – Sandstone Novato Quarry
  - KJfm – Franciscan Complex
  - Fs – Graywacke and meta-graywacke



Legend

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed
- 0.5-mile Project Buffer

Paleontological Sensitivity Category (PFYC)
- 1: Very Low
- 2: Low
- 3: Moderate
- 4: High

Version: 3/19/2024

N

0 0.25
Miles

Figure 3. Page 1 of 4
Paleontological Sensitivity
Oakland Power Reinforcement Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Geology Data Source: Graymer, 2000

Jacobs

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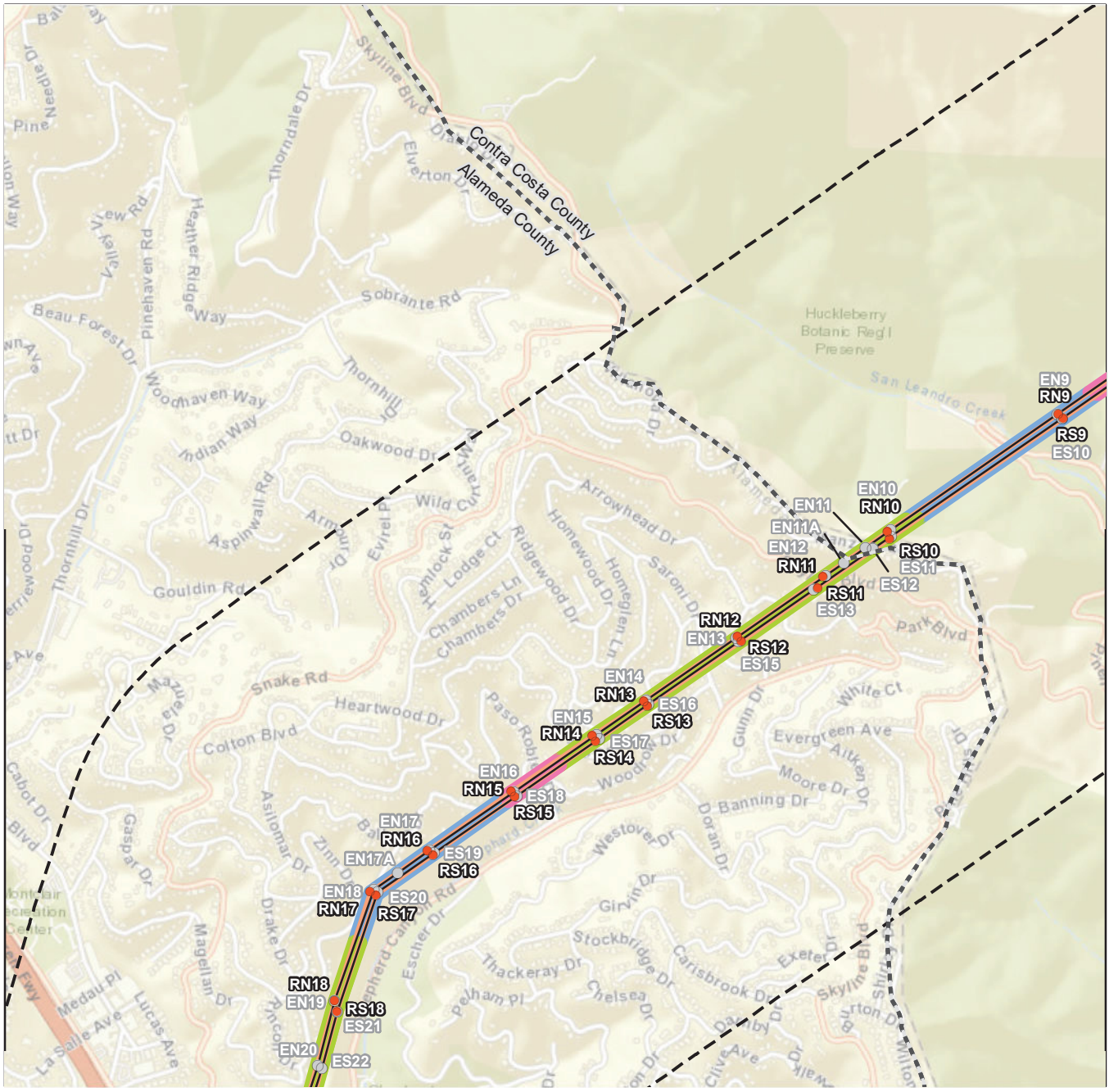

Version: 3/19/2024

Legend

Overhead Structures
- Existing
- Proposed

Overhead Routes
- Existing
- Proposed

Underground Routes
- Proposed
- 0.5-mile Project Buffer

Paleontological Sensitivity Category (PFYC)
- 1: Very Low
- 2: Low
- 3: Moderate
- 4: High

N

0 0.25
Miles

Figure 3. Page 2 of 4
Paleontological Sensitivity
Oakland Power Reinforcement Project
Pacific Gas & Electric Company

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Geology Data Source: Graymer, 2000

Jacobs

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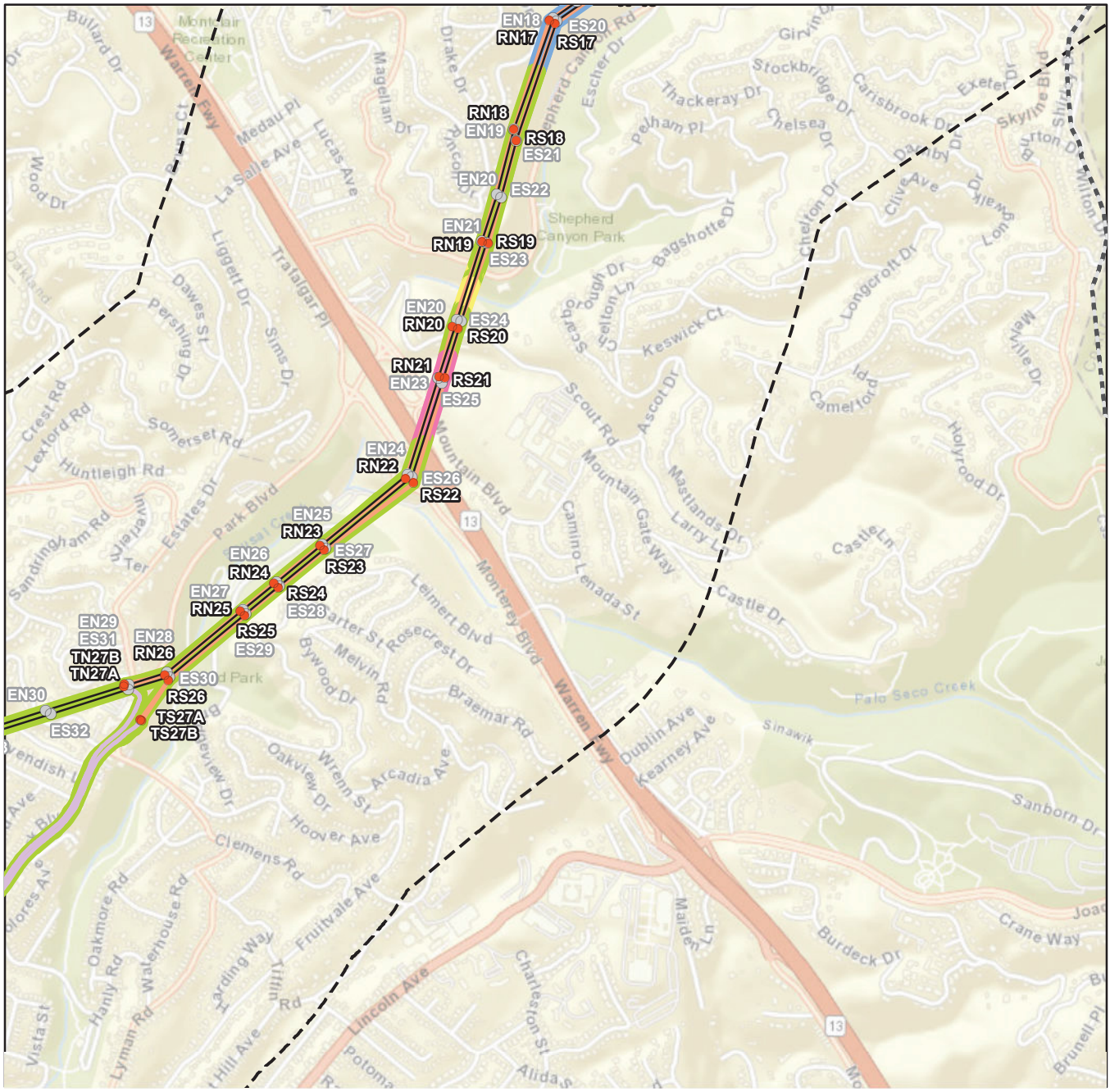

Legend

Overhead Structures

- Existing
- Proposed

Overhead Routes

- Existing
- Proposed

Underground Routes

- Proposed
- 0.5-mile Project Buffer

Paleontological Sensitivity Category (PFYC)

- 1: Very Low
- 2: Low
- 3: Moderate
- 4: High

Version: 3/19/2024

N

0 0.25

Miles

Preliminary and Subject to Change Based on CPUC Requirements, Final Engineering, and Other Factors

Figure 3. Page 3 of 4
Paleontological Sensitivity
Oakland Power Reinforcement Project
Pacific Gas & Electric Company

Geology Data Source: Graymer, 2000

Jacobs

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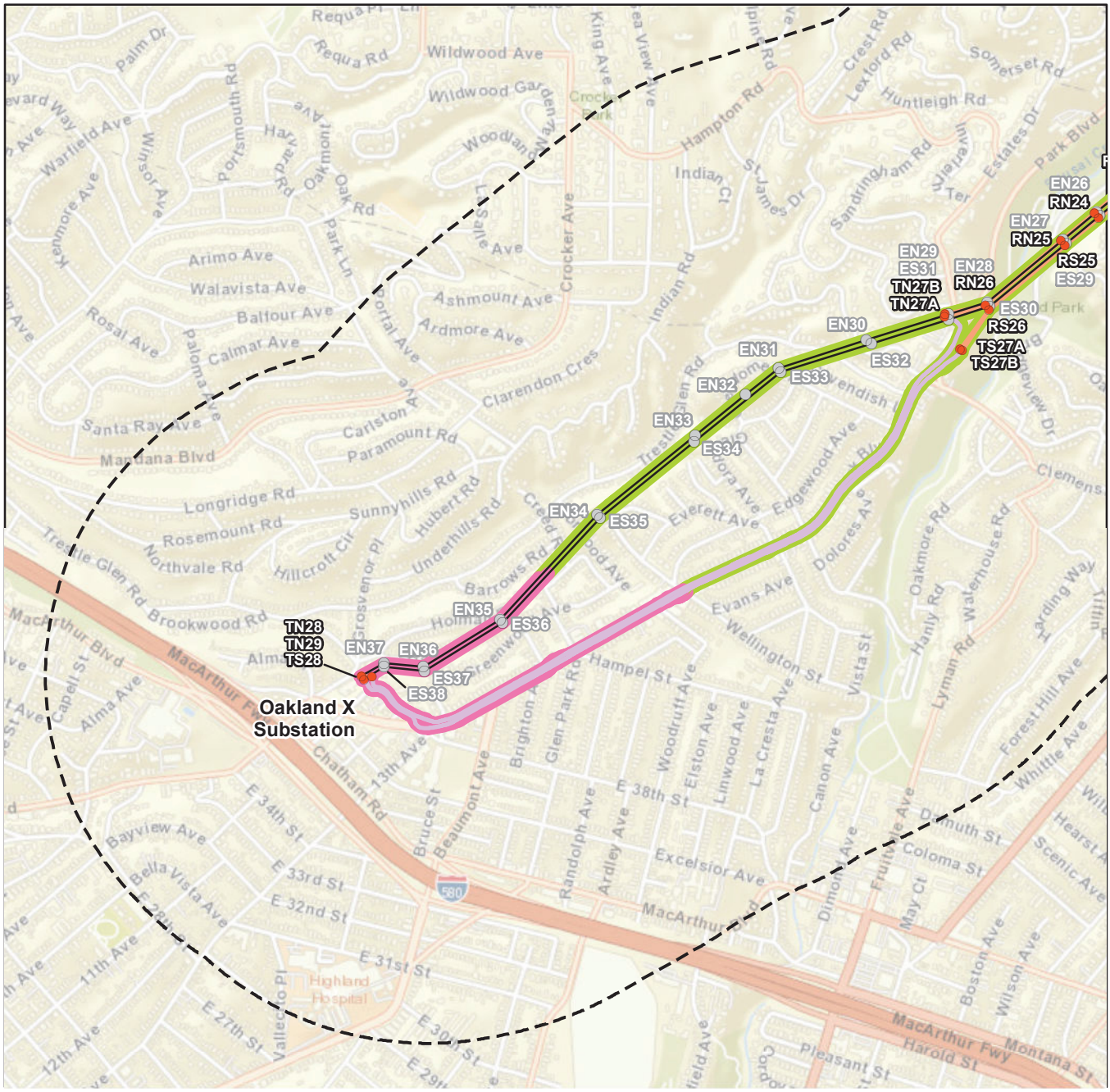

Version: 3/19/2024

Legend

Overhead Structures
- Existing
- Proposed

Overhead Routes
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Figure 3. Page 4 of 4
Paleontological Sensitivity
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There is potential to encounter geologic units of greater sensitivity at depth and also potential – although relatively low – for unanticipated fossil discovery in geologic units determined to be of low to moderate sensitivity.

References

Alden, A. Oakland Geology: Archive for the 'Oakland Fossils/Features' Category [Fact Sheet]. https://oaklandgeology.com/category/oakland-fossils-features/ Accessed December 13, 2023.

California Geological Survey. 2002. California Geomorphic Provinces: Note 36. https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-36.pdf.

City of Oakland. 1996. *City of Oakland General Plan*, Open Space, Conservation, and Recreation Element. Oakland, CA. Adopted June 1996. https://www.oaklandca.gov/topics/city-of-oakland-general-plan.

City of Orinda. 1987. *City of Orinda General Plan.* Adopted May 20, 1987. https://www.cityoforinda.org/269/General-Plan-Housing-Element.

City of Piedmont. 2009. *City of Piedmont General Plan*. Adopted April 6, 2009. https://piedmont.ca.gov/services___departments/planning___building/general_plan___other_policy_documents.

Contra Costa County. 2005. *Contra Costa County General Plan*. Adopted January 18, 2005. https://www.contracosta.ca.gov/4732/General-Plan.

Graymer, R.W. 2000. Geologic map and map database of the Oakland metropolitan area, Alameda, Contra Costa, and San Francisco Counties, California: United States Geological Survey Miscellaneous Field Studies Map MF-2342.

Hay, O.P. 1927. *The Pleistocene of the Western Region of North American and its Vertebrated Animals*. Carnegie Institution of Washington. https://books.google.com/books?hl=en&lr=&id=dI5QAQAAMAAJ&oi=fnd&pg=PP9&dq=oliver+perry+hay+auriferous+gravels+grey%27s+flat&ots=7Yz09rOd8P&sig=E96UO4BuL1VpSnjphjbUuMPHxLI#v=onepage&q=oliver%20perry%20hay%20auriferous%20gravels%20grey's%20flat&f=false.

Murphey, P.C., Knauss, G.E., Fisk, L.H., Deméré, T.A., Reynolds, R.E., Trujillo, K.C., and Strauss, J.J. 2014. *A Foundation for Best Practices in Mitigation Paleontology*. v. 6, p. 44.

Paleobiology Database (PBDB). 2023. Paleobiology Database. Locality Search. Accessed July. https://paleobiodb.org/#/.

Pacific Gas and Electric Company (PG&E). 2015. *Paleontological Resources Standards and Procedures.*

Radbruch, D.H. 1969. Areal and Engineering Geology of the Oakland East Quadrangle, California. United States Geological Survey.

Savage, D.E. 1951. "Late Cenozoic Vertebrates of the San Francisco Bay Region," in University of California Publications, Bulletin of the Department of Geological Sciences 24, v. 13, p. 339–410.

Stirton, R.A. 1939. "Cenozoic Mammal Remains from the San Francisco Bay Region," in University of California Publications, Bulletin of the Department of Geological Sciences 28, v. 10, p. 215–314.

Society for Vertebrate Paleontology (SVP). 1995. "Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources: Standard Guidelines." *Society for Vertebrate Paleontology News Bulletin*, v. 163, p. 22–27.

Society for Vertebrate Paleontology (SVP). 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources.* Society for Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee.

University of California, Museum of Paleontology (UCMP). 2023. University of California at Berkeley, Museum of Paleontology Database. Locality Search. Accessed November. http://ucmpdb.berkeley.edu.

Table of Abbreviations

APM	Applicant-Proposed Measure
bgs	below ground surface
BLM	Bureau of Land Management
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CRS	Cultural Resource Specialist
FLPMA	Federal Land Policy and Management Act
kV	kilovolt(s)
OPLA-PRP	Omnibus Public Lands Act, Paleontological Resources Preservation
PBDB	Paleobiology database
PFYC	Potential Fossil Yield Classification
PG&E	Pacific Gas and Electric
SVP	Society for Vertebrate Paleontology
UCMP	University of California, Museum of Paleontology
USC	United States Code
USFS	U.S. Forest Service

Appendix I

AIR QUALITY EMISSIONS CALCULATIONS

Proposed Project

Overhead Lines (5 Ph 1 APMs)							
			Emissions (lbs/year)				MT/yr
Year	ROG	CO	NOx	SOx	PM10	PM2.5	CO2e
2026	457.34	3286.16	436.13	116.81	436.51	66.87	132.53
2027	1300.64	6039.56	3630.00	1124.54	1239.69	320.76	1214.24
2028	557.06	2399.75	1283.22	321.10	182.16	93.14	471.41
2029	0.10	3.86	5.52	0.06	2.79	0.78	2.88
2030	0.02	0.97	1.38	0.01	0.70	0.20	0.72
Maximum	**2315.16**	**11730.29**	**5356.26**	**1562.52**	**1861.85**	**481.75**	**1821.79**

Overhead Lines						
		Emissions (lbs/day)				
Year	ROG	CO	NOx	SOx	PM10	PM2.5
2026	10.73	77.13	10.24	2.74	10.25	1.57
2027	10.18	47.25	28.40	8.80	9.70	2.51
2028	4.36	18.78	10.04	2.51	1.43	0.73
2029	0.00	0.03	0.04	0.00	0.02	0.01
2030	0.00	0.03	0.04	0.00	0.02	0.01
Maximum	**10.73**	**77.13**	**28.40**	**8.80**	**10.25**	**2.51**

Underground Lines (7 Ph 2 APMs)							
			Emissions (lbs/year)				MT/yr
Year	ROG	CO	NOx	SOx	PM10	PM2.5	CO2e
2026	197.04	1791.36	583.10	6.33	155.02	69.89	303.40
2027	795.17	7462.72	2688.96	26.12	675.40	300.74	1249.39
2028	14.42	236.30	99.10	0.87	72.07	21.57	39.71
2029	0.04	0.98	3.44	0.03	1.17	0.35	1.57
2030	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	**1006.68**	**9491.36**	**3374.60**	**33.35**	**903.67**	**392.56**	**1594.08**

Underground Lines						
		Emissions (lbs/day)				
Year	ROG	CO	NOx	SOx	PM10	PM2.5
2026	4.62	42.05	13.69	0.15	3.64	1.64
2027	6.22	58.39	21.04	0.20	5.28	2.35
2028	0.11	1.85	0.78	0.01	0.56	0.17
2029	0.00	0.01	0.03	0.00	0.01	0.00
2030	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	**6.22**	**58.39**	**21.04**	**0.20**	**5.28**	**2.35**

Existing OH Lines (9 Ph 3 APMs)							
			Emissions (lbs/year)				MT/yr
Year	ROG	CO	NOx	SOx	PM10	PM2.5	CO2e
2026	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2028	69.83	589.64	105.89	1.84	35.46	25.37	88.25
2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	**69.83**	**589.64**	**105.89**	**1.84**	**35.46**	**25.37**	**88.25**

Existing OH Lines						
		Emissions (lbs/day)				
Year	ROG	CO	NOx	SOx	PM10	PM2.5
2026	0.00	0.00	0.00	0.00	0.00	0.00
2027	0.00	0.00	0.00	0.00	0.00	0.00
2028	0.55	4.61	0.83	0.01	0.28	0.20
2029	0.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	**0.55**	**4.61**	**0.83**	**0.01**	**0.28**	**0.20**

Moraga Substation (10 Ph 4a)							
			Emissions (lbs/year)				MT/yr
Year	ROG	CO	NOx	SOx	PM10	PM2.5	CO2e
2026	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	0.15	7.52	1.06	0.03	3.32	0.87	2.71
2028	0.11	6.62	0.75	0.03	3.07	0.79	2.20
2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	**0.26**	**14.13**	**1.81**	**0.06**	**6.39**	**1.66**	**4.91**

Moraga Substation						
		Emissions (lbs/day)				
Year	ROG	CO	NOx	SOx	PM10	PM2.5
2026	0.00	0.00	0.00	0.00	0.00	0.00
2027	0.00	0.06	0.01	0.00	0.03	0.01
2028	0.00	0.05	0.01	0.00	0.02	0.01
2029	0.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	**0.00**	**0.06**	**0.01**	**0.00**	**0.03**	**0.01**

Oakland X Subtation (11 Ph 4b)							
			Emissions (lbs/year)				MT/yr
Year	ROG	CO	NOx	SOx	PM10	PM2.5	CO2e
2026	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2027	0.36	23.36	2.25	0.09	10.65	2.74	4.33
2028	0.42	32.14	2.34	0.13	14.67	3.74	6.13
2029	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	**0.79**	**55.50**	**4.59**	**0.23**	**25.32**	**6.48**	**10.45**

Oakland X Substation						
		Emissions (lbs/day)				
Year	ROG	CO	NOx	SOx	PM10	PM2.5
2026	0.00	0.00	0.00	0.00	0.00	0.00
2027	0.00	0.18	0.02	0.00	0.08	0.02
2028	0.00	0.25	0.02	0.00	0.11	0.03
2029	0.00	0.00	0.00	0.00	0.00	0.00
2030	0.00	0.00	0.00	0.00	0.00	0.00
Maximum	**0.00**	**0.25**	**0.02**	**0.00**	**0.11**	**0.03**

	days/year
2026	42.60
2027	127.81
2028	127.81
2029	127.81
2030	31.95

Alternative Analysis

	ROG	CO	NOx	SOx	PM10	PM2.5					
			lbs/day				Months	Miles Alt	Miles Prop	Ratio	Miles Difference
Overhead Replacement Alt 2	7.19	51.65	19.02	5.89	6.86	1.68	18.00	5.27	7.87	0.67	2.60
Overhead Replacement Alt 3	8.01	57.53	21.18	6.56	7.64	1.87	18.00	5.87	7.87	0.75	2.00
Overhead Replacement Alt 4	10.46	75.17	27.68	8.57	9.99	2.45	18.00	7.67	7.87	0.97	0.20
Western Section Undergrounding	6.22	58.39	21.04	0.20	5.28	2.35	16.00	2.44	2.44	1.00	0.00
Alt 2 Skyline Colton Snake	5.61	52.64	18.97	0.18	4.76	2.12	16.00	2.20	2.44	0.90	0.24
Alt 3 Shepherd Canyon	2.80	26.32	9.48	0.09	2.38	1.06	16.00	1.10	2.44	0.45	1.34
Alt 4 Skyline Ascot	7.39	69.39	25.00	0.24	6.28	2.80	16.00	2.90	2.44	1.19	-0.46
Alt 5 Estates Drive	2.04	19.14	6.90	0.07	1.73	0.77	16.00	0.80	2.44	0.33	1.64
Overhead Replacement - Estates Drive (Alt 5)	9.92	71.25	26.24	8.13	9.46	2.32	18.00	7.27	7.87	0.92	0.60
Remove Existing OH - Estates Drive (Alt 5)	0.55	4.61	0.83	0.01	0.28	0.20	2.00	2.33	2.33	1.00	0.00

Concurrent Alternative Phase Construction

Unmitigated Emissions

	ROG	CO	NOx	SOx	PM10	PM2.5
			lbs/day			
OH + WUG + Alt2+Alt 3	21.82	189.00	68.51	6.37	19.29	7.22
OH + WUG + Alt2+Alt 4	26.41	232.08	84.03	6.52	23.19	8.95
OH + WUG + Alt3+Alt 4	24.43	205.75	74.54	6.43	20.81	7.89
OH + WUG + Alt2	19.02	162.68	59.02	6.28	16.91	6.15
OH + WUG + Alt3	16.21	136.36	49.54	6.19	14.53	5.09
OH + WUG + Alt4	20.80	179.43	65.06	6.34	18.43	6.83
OH + WUG + Alt5	18.18	148.78	54.17	8.40	16.48	5.44

Mitigated Emissions

	ROG	CO	NOx	SOx	PM10	PM2.5
			lbs/day			
OH + Alt2	12.80	104.29	37.99	6.08	11.63	3.80
OH + Alt3	9.99	77.97	28.50	5.98	9.24	2.74
OH + Alt4	14.58	121.04	44.02	6.13	13.14	4.48
OH + Alt5	11.96	90.39	33.13	8.19	11.20	3.09
WUG + Alt2	11.83	127.78	46.04	0.45	11.56	5.15
WUG + Alt3	9.03	84.71	30.52	0.30	7.67	3.41
WUG + Alt4	13.62	127.78	46.04	0.45	11.56	5.15
WUG + Alt5	8.81	82.14	28.76	0.29	7.29	3.32

OH = Overhead Replacement
WUG = Western Section Undergrounding