# 2 Project Description

## 2.1 Project Overview

This chapter describes the Proposed Project in detail, including the components to be installed or modified, the construction processes, and operations and maintenance (O&M) activities. The figures shown in this chapter identify project segments and staging yard locations and illustrate the various structure types. The locations of all project components (e.g., temporary work areas, access roads, guard structures, stringing sites) are provided in Appendix A, Project Components.

The Proposed Project is designed to remediate discrepancies and improve reliability. The Proposed Project would remediate discrepancies associated with existing subtransmission lines. Discrepancies are defined as potential clearance problems between an energized conductor and its surroundings (e.g., the structure, another energized conductor on the same structure, a different line, or the ground).

The project area is in unincorporated Kern County, unincorporated Los Angeles County, and the cities of Arvin and Bakersfield (Figure 2-1). The Proposed Project is divided into 5 segments discussed below and shown in Figure 2-2 through Figure 2-6.

1. Segment 1 spans approximately 20.4 miles from the existing Kern River 1 Hydroelectric Substation to and including Structure M20-T3 (a location referred to as "the T"). The existing structures in Segment 1 support portions of the Gorman-Kern River 1 and Banducci-Kern River 1 66 kV subtransmission lines.
2. Segment 2 spans approximately 26.5 miles from Structure M20-T3 to and including Structure M46-T6. The existing structures in Segment 2 support portions of the Gorman-Kern River 1 66 kV Subtransmission Line.
3. Segment 3 spans approximately 4.1 miles from Structure M46-T6 to the existing Gorman Substation. The existing structures in Segment 3 support portions of the Gorman-Kern River 1 and Frazier Park-Gorman 66 kV subtransmission lines.
4. Segment 4 spans approximately 11.3 miles from Structure M20-T3 to and including Structure M11-T3. The existing structures in Segment 4 support portions of the Banducci-Kern River 1 66 kV Subtransmission Line.
5. Segment 5 spans approximately 3 miles from Pole X7666E to the existing Banducci Substation. The existing structures in Segment 5 support portions of the Banducci-Kern River 1 66 kV Subtransmission Line, distribution circuitry, and telecommunications infrastructure.

### 2.1.1 Project Objectives

SCE identified the following project objectives:

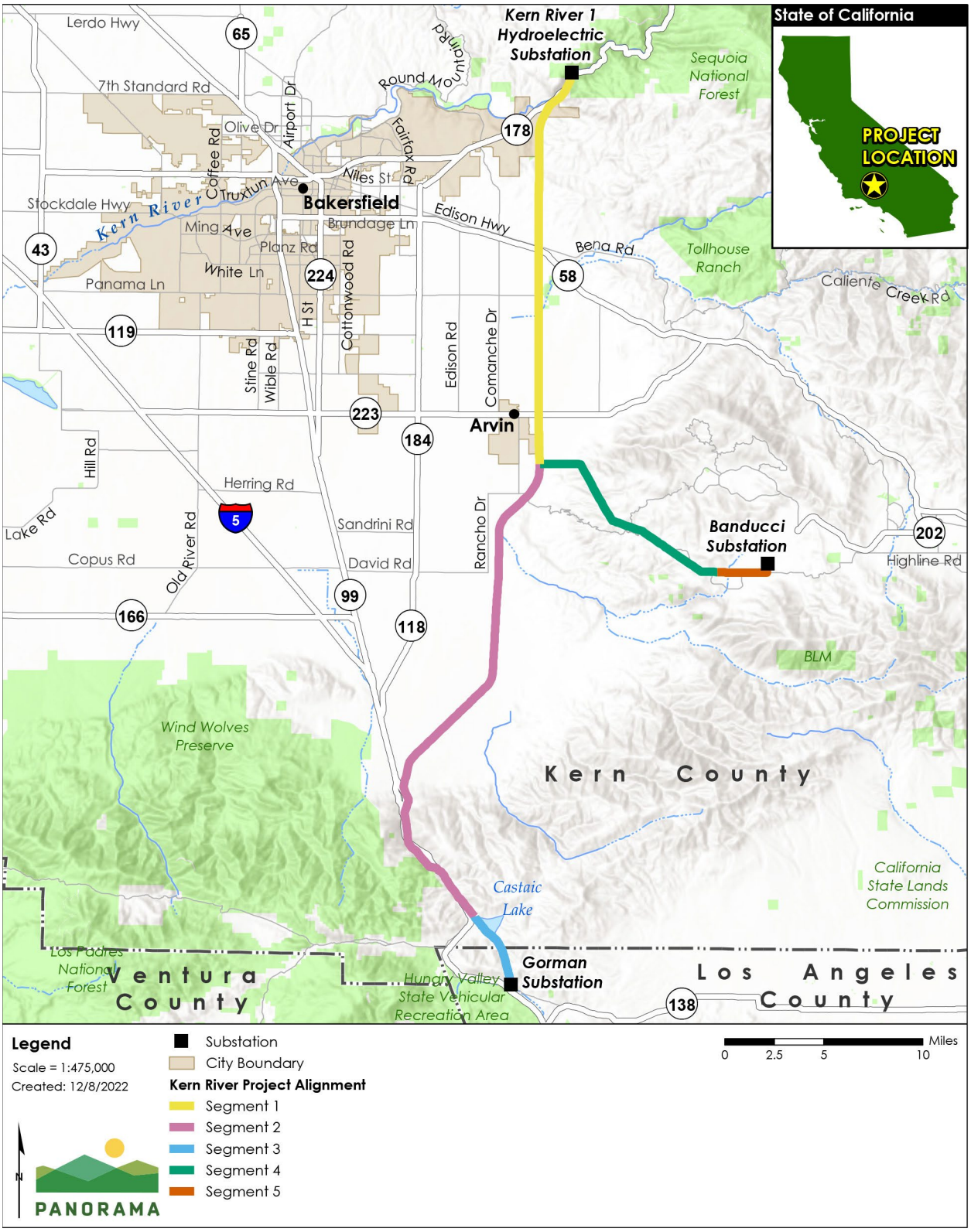
- Ensure compliance with CPUC G.O. 95 standards.
- Address reliability concerns related to the condition of existing infrastructure on the affected subtransmission lines.

### 2.1.2 Existing System Infrastructure

The existing utility system includes the following subtransmission lines and substations, as shown in the system diagram (Figure 2-7):

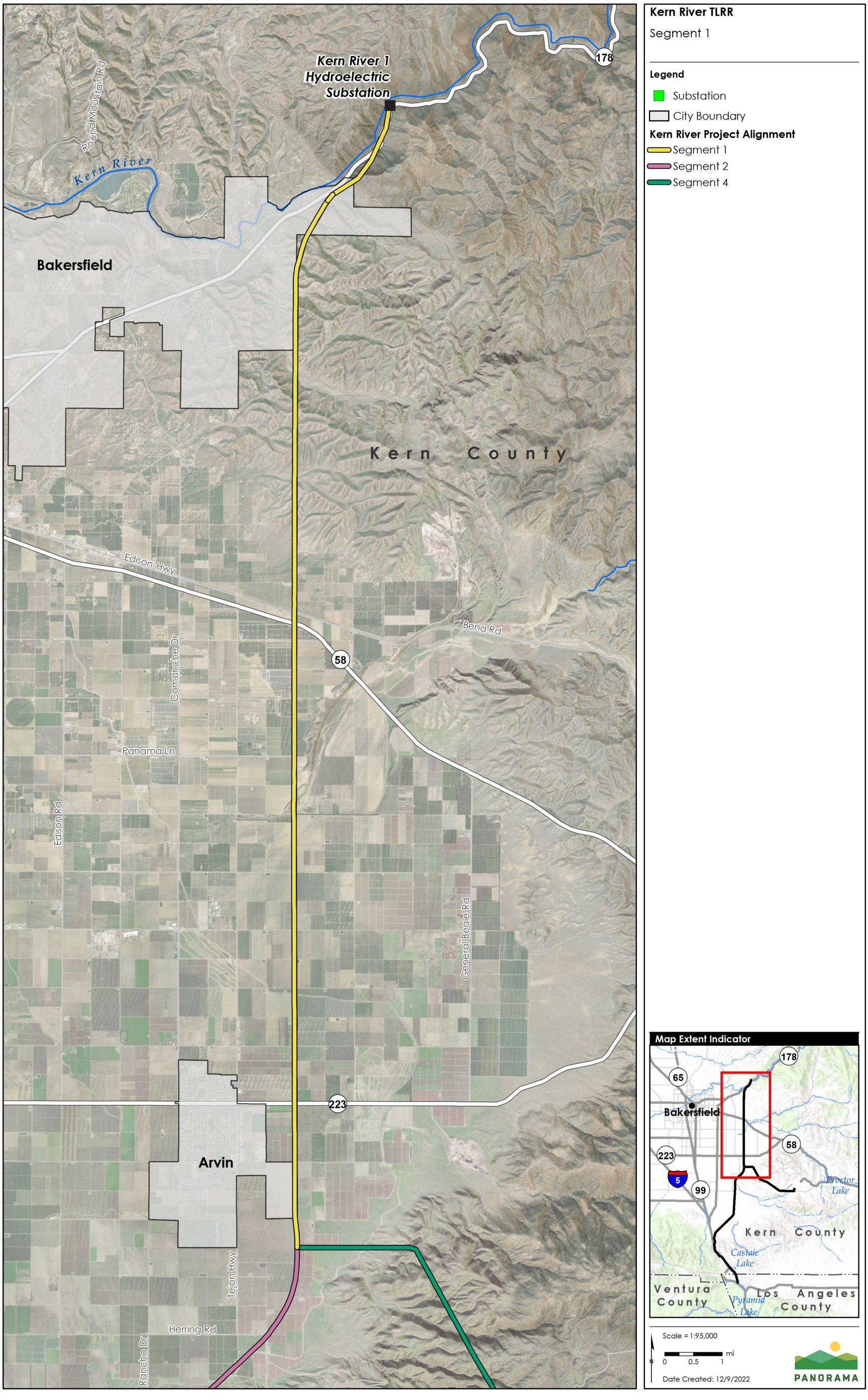
- Banducci-Kern River 1 66-kV subtransmission line
- Frazier Park-Gorman 66-kV subtransmission line
- Gorman-Kern River 1 66-kV subtransmission line
- Banducci 66-kV substation
- Frazier Park 66-kV substation
- Gorman 66-kV substation
- Kern River 1 hydroelectric 66-kV substation

**Figure 2-1 Project Location**



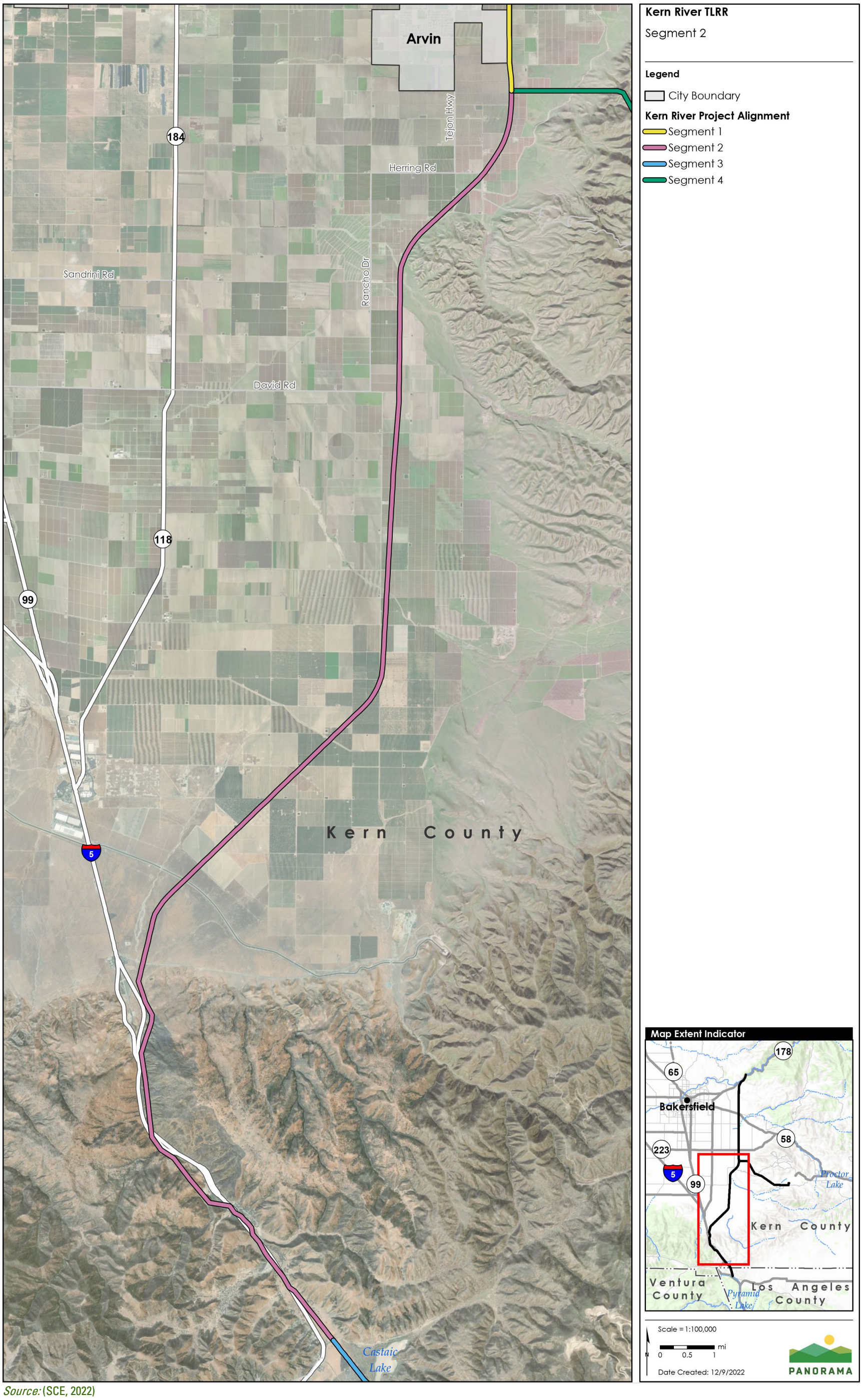

*Source: (SCE, 2022)*

**Figure 2-2 Segment 1**




*Source: (SCE, 2022)*

**Figure 2-3 Segment 2**




*Source:* (SCE, 2022)

**Figure 2-4 Segment 3**


*Source:* (SCE, 2022)

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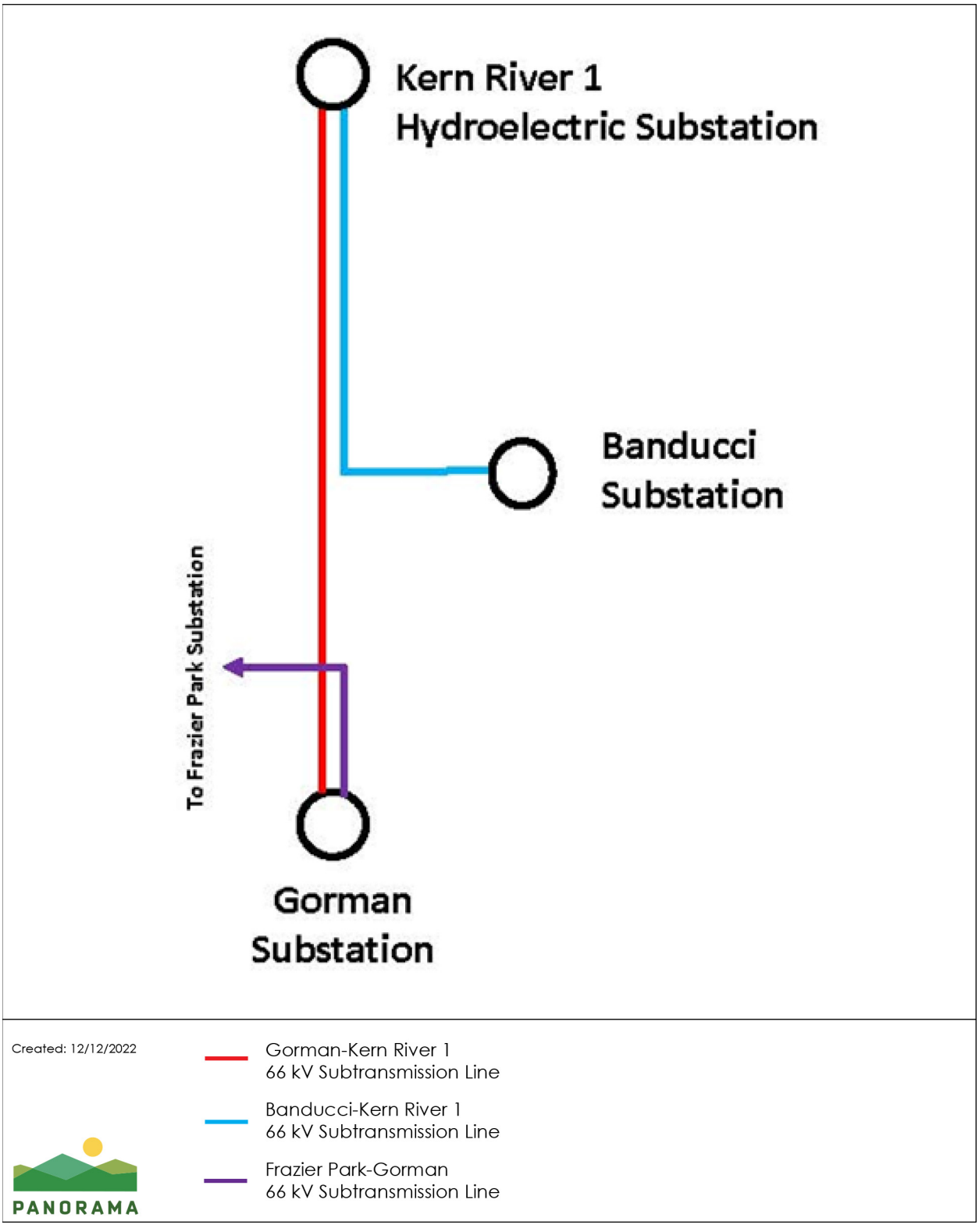
**Figure 2-5 Segment 4**


*Source: (SCE, 2022)*

**Figure 2-6 Segment 5**


*Source: (SCE, 2022)*

**Figure 2-7 Existing Utility System**




*Source: (SCE, 2022)*

### 2.1.3 Existing Facilities

The quantities and types of structures to be removed or modified within each subtransmission line segment are listed in Table 2-1

**Table 2-1 Number of Existing Structures to be Removed or Modified**

| Project Type | Number of Structures Removed | Number of Structures Modified | Approximate Height Above Ground, Existing and Modified Structures (ft) |
|---|---|---|---|
| **Segment 1** | | | |
| Lattice steel tower (LST) | 117 | 6 | 29 to 95 |
| Wood H-frame | 38 | 0 | 51 to 71 |
| Two-pole structure | 1 | 0 | 66 |
| **Segment 2** | | | |
| LST/tubular steel pole (TSP) | 189 | 0 | 47 to 100 |
| Wood H-frame | 3 | 0 | 50 to 62 |
| Wood structures | 2 | 0 | 81 to 92 |
| **Segment 3** | | | |
| LST | 37 | 0 | 31 to 61 |
| Wood H-frame | 16 | 0 | 37 to 79 |
| Two-pole structure | 3 | 0 | 75 to 78 |
| Wood structures | 1 | 0 | 34 |
| **Segment 4** | | | |
| LST | 58 | 0 | 52 to 78 |
| Wood H-frame | 12 | 0 | 52 to 71 |
| Three-pole structure | 3 | 0 | 51 to 53 |
| **Segment 5** | | | |
| Wood structures | 2 | 4 | 50 to 60 |

*Source: (SCE, 2022)*

Notes:

Lattice Steel Tower (LST): self-supporting tower structure constructed from galvanized steel that has foundations

Tubular Steel Pole (TSP): self-supporting monopole structure constructed from galvanized steel that has a foundation

Wood H-frame: self-supporting or guyed H-frame structure constructed from two direct-buried wood structures, including a spar arm

Two- or three-pole structure: self-supporting or guyed structure constructed from two or three direct-buried wood structures

### 2.1.4 Area Served by the Existing Utility System

The existing infrastructure provides power to a portion of unincorporated Kern County, the city of Tehachapi, and the surrounding communities. The infrastructure also has the ability to provide power to communities directly served from the existing Gorman and Frazier Park substations, as needed. The Proposed Project would not provide service to any new users or areas.

## 2.2 Proposed Project

The Proposed Project includes the following major elements:

- rebuilding a substantial portion of the existing subtransmission lines;
- replacing/modifying individual existing structures and re-using individual existing subtransmission structures along portions of existing subtransmission lines; and
- minor modifications at existing substations.

Each project component is described in further detail next. Table 2-2 lists the components to be included in each project segment.

**Table 2-2 Proposed Project Components per Segment**

| Segment | Description of Components |
|---|---|
| Segment 1 | Approximately 154 structures would be removed and replaced with new structures. The double-circuit structures and conductors would be removed and replaced with new single-circuit structures and conductors. The following components would be installed in Segment 1:<br>• 38 single-circuit TSPs<br>• Two single-circuit TSP H-frames<br>• 114 single-circuit LWS structures<br>• One circuit (three wires) of new conductor on replacement structures along the 20.4-mile length of Segment 1<br>• 20.4 linear miles of OPGW on replacement and reused structures<br>• Vaults or pull boxes to support the installation of OPGW/ADSS<br>• Marker balls on overhead wire spans M0-T1 to M0-T2, M0-T2 to M1-T1, M1-T2 to M1-T3, M1-T3 to M1-T4, and M3-T5 to M3-T6 if required by FAA final determination<br>In addition to the new structure installation, six existing LSTs would be re-used, and/or modified to support the installation of OPGW. |
| Segment 2 | The structures and conductor in Segment 2 would be removed and replaced with new structures and conductor. The following components would be installed in Segment 2:<br>• 46 single-circuit TSPs<br>• Two single-circuit LWS structure H-frames<br>• 147 single-circuit LWS structures<br>• One circuit (three wires) of new conductor on replacement structures along the 26.5-mile length of Segment 2<br>• 26.5 linear miles of OPGW on replacement structures |

| Segment | Description of Components |
|---|---|
| Segment 3 | The structures and conductor in Segment 3 would be removed and replaced with new structures and conductor. The following components would be installed in Segment 3:<br>• 18 double-circuit TSPs<br>• 29 double-circuit LWS structures<br>• Two circuits (six wires) of new subtransmission conductor on replacement structures along the 4.1-mile length of Segment 3<br>• 4.1 linear miles of OPGW on replacement structures<br>• Vaults or pull boxes to support the installation of OPGW/ADSS |
| Segment 4 | The structures and conductor in Segment 4 would be removed and replaced with new structures and conductor. The following components would be installed in Segment 4:<br>• 17 single-circuit TSPs<br>• Two single-circuit TSP H-frames<br>• 46 single-circuit LWS structures<br>• Nine LWS H-frames<br>• One circuit (three wires) of new subtransmission conductor on replacement structures along the 11.3-mile length of Segment 4<br>• 11.3 linear miles of OPGW on replacement structures<br>• Marker balls between the following structures/spans, if required by FAA final determination:<br>– 2145311E_2145312E to 2145308E_2145309E_21 45310E<br>– 2145305E_2145306E_21 45307E to 2145303E_2145304E<br>– 2145303E_2145304E to 2145301E_2145302E<br>– 2145301E_2145302E to M3-T2<br>– M3-T3 to M3-T4<br>– M4-T3 to M4-T4<br>– M4-T4 to M4-T5<br>– M6-T1 to M6-T2 |
| Segment 5 | Two structures would be removed and replaced with new structures; no conductor or distribution circuit would be removed; however, the conductor and distribution circuit would be transferred to the two new structures. The following components would be installed:<br>• Two new single-circuit structures and transfer of existing conductor to new structures; third-party infrastructure (e.g., telephone lines) also may be transferred or left in-place on existing structures<br>• 3 linear miles of all-dielectric self-supporting (ADSS) fiber optic cable on replacement and existing structures<br>• Vaults or pull boxes to support the installation of OPGW/ADSS<br>The following components would be modified:<br>– Insulators on three structures<br>– Distribution underbuild on one structure |

*Source: (SCE, 2022)*

### 2.2.1 Description of Project Components

#### Subtransmission Conductor

The new conductor would consist of Aluminum Conductor Composite Core (ACCC) and/or Aluminum Conductor Steel-Reinforced (ACSR) subtransmission conductor. The conductor would be non-specular and would have a diameter of approximately 0.81 inches for ACCC conductor or 1.196 inches for ACSR conductor.

#### Subtransmission Poles

Subtransmission structures to be installed as part of the Proposed Project would be dull galvanized tubular steel poles (TSPs) or light-weight steel (LWS) structures, which may include components such as down guys and span guys Table 2-3 shows the above-ground height, diameter, and foundation for each proposed subtransmission structure/pole to be installed in each segment. Typical details for the proposed structures are shown in Figure 2-8 through Figure 2-10.

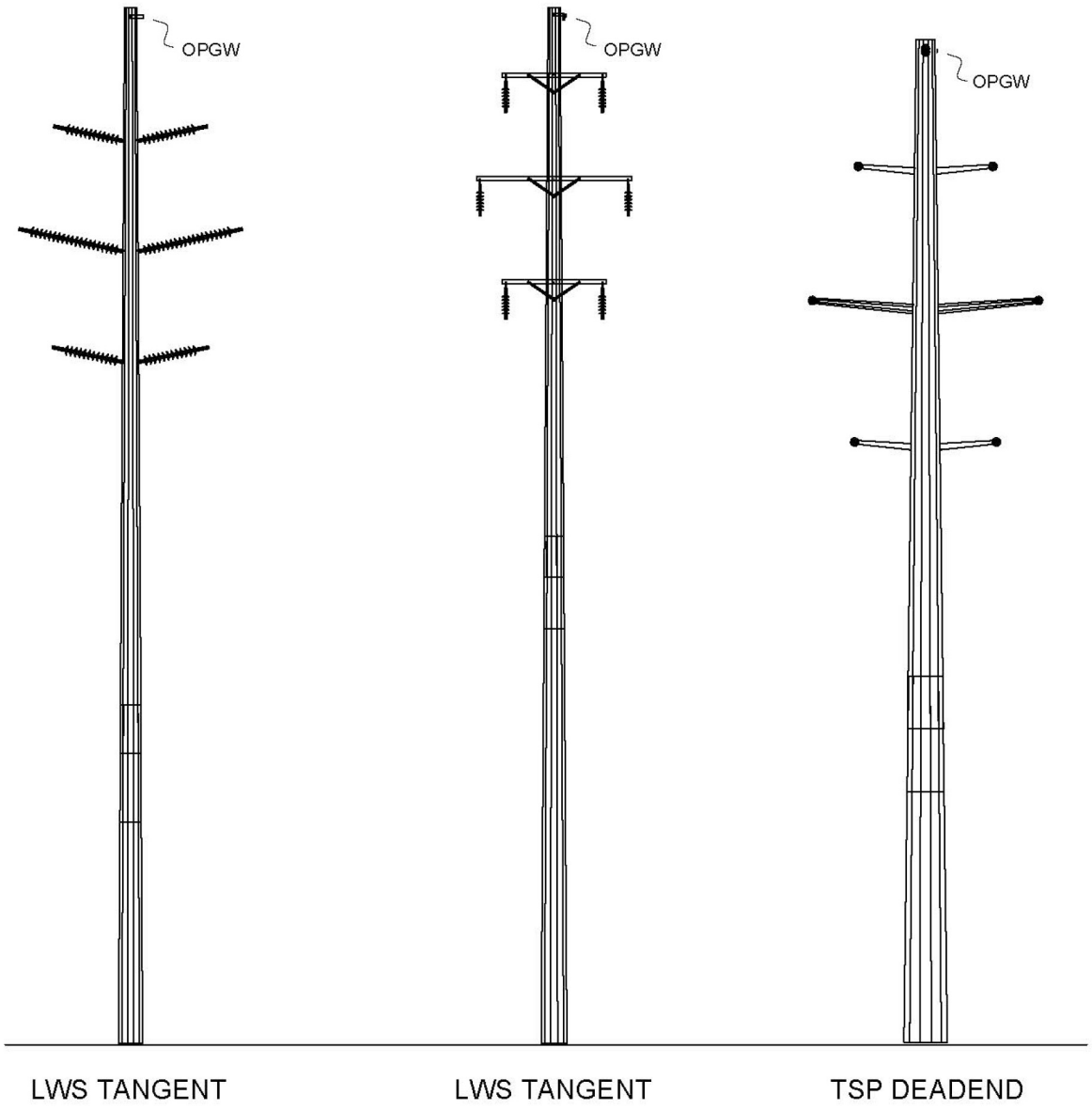
**Table 2-3 Structures to be Installed per Segment**

| Pole Type | Proposed Approximate Number of Structures | Approximate Height Above Ground (feet) | Approximate Pole Diameter (feet) | Approximate Foundation Depth (TSPs) or Burial Depth (LWS structures) (feet) | Approximate Foundation Diameter (TSPs) or Auger Width (LWS structure) (feet) | Approximate Concrete Volume (cubic yards) |
|---|---|---|---|---|---|---|
| **Segment 1** | | | | | | |
| TSP | 38 | 50 to 100 | 2.4 to 3.7 | 10 to 30 | 3 to 4 | 1.8 to 7 |
| TSP, H-frame | 2 | 55 to 70 | 2.6 to 2.7 | 10 to 30 | 4 to 8 | 2.3 to 14 |
| LWS structure | 114 | 52 to 97 | 1.5 to 2.7 | 7 to 14 | 2 to 3 | N/A |
| **Segment 2** | | | | | | |
| TSP | 46 | 60 to 105 | 2.0 to 4.3 | 9 to 13 | 4 to 8 | 2.3 to 14 |
| LWS, H-frame | 2 | 52 to 57 | 1.5 to 1.6 | 7 to 14 | 2 to 3 | N/A |
| LWS structure | 147 | 52 to 84 | 1.5 to 2.6 | 7 to 14 | 2 to 3 | N/A |
| **Segment 3** | | | | | | |
| TSP | 18 | 65 to 90 | 2.8 to 3.6 | 9 to 11 | 4 to 8 | 2.1 to 5.1 |
| LWS structure | 29 | 66 to 106 | 1.8 to 3.0 | 7 to 14 | 2 to 3 | N/A |
| **Segment 4** | | | | | | |
| TSP | 17 | 60 to 120 | 2.0 to 4.3 | 10 to 30 | 4-8 | 2.3 to 14 |
| TSP, H-frame | 2 | 50 to 65 | 2.1 to 2.8 | 10 to 30 | 4-8 | 2.3 to 14 |

| Pole Type | Proposed Approximate Number of Structures | Approximate Height Above Ground (feet) | Approximate Pole Diameter (feet) | Approximate Foundation Depth (TSPs) or Burial Depth (LWS structures) (feet) | Approximate Foundation Diameter (TSPs) or Auger Width (LWS structure) (feet) | Approximate Concrete Volume (cubic yards) |
|---|---|---|---|---|---|---|
| LWS structure | 46 | 61 to 106 | 1.5 to 3.0 | 7 to 14 | 2-4 | N/A |
| LWS H-frame | 9 | 52 to 84 | 1.5 to 2.6 | 7 to 14 | 2-3 | N/A |
| **Segment 5** | | | | | | |
| LWS structure | 2 | 61 | 1.5 | 7 to 14 | 2 | N/A |

*Source: (SCE, 2022)*

**Figure 2-8 Typical Proposed Structure Design**

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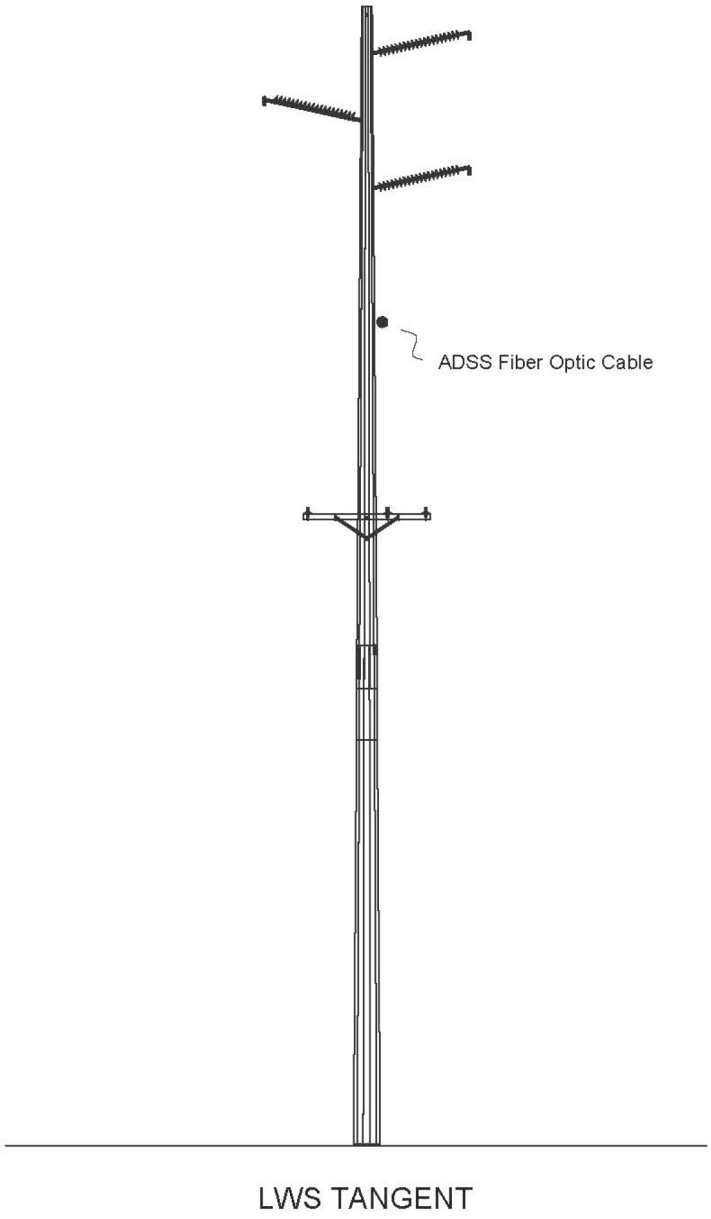
*Source: (SCE, 2022)*

**Figure 2-9 Typical Proposed Structure Design**

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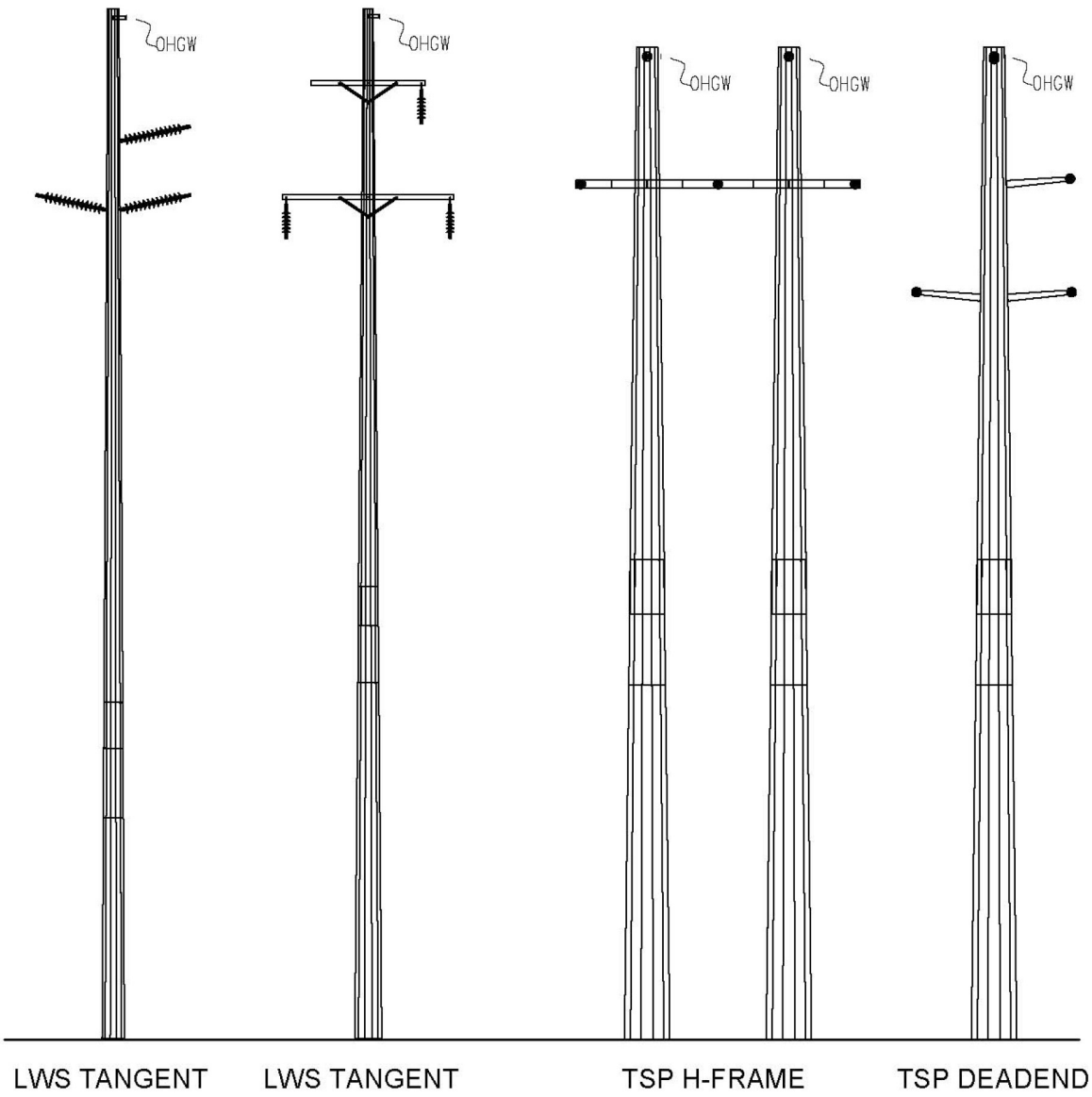
*Source: (SCE, 2022)*

**Figure 2-10 Typical Proposed Structure Design**

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*Source: (SCE, 2022)*

### Foundations

Concrete foundations and/or micropile foundations would be used for TSPs. Most LWS structures would be direct bury, with the structure installed directly in the ground at a depth of up to 30 feet. Steel, cardboard, slurry or plastic forms may be placed to stabilize the excavation walls before installation of the LWS structures.

TSP concrete foundations would be approximately 4 to 6 feet in diameter and would extend underground approximately 10 to 30 feet, with approximately 1 to 3 feet of concrete visible above the ground. Micropile foundations would be used where the substrate is rocky, and excavation would be difficult or would require blasting or rock breakers. Micropile foundations also would be used where access is limited, and concrete pile foundations cannot be constructed because of space constraints. The micropile foundations would consist of several small-diameter holes (approximately 7 to 10, 8-inch-diameter holes), arranged in a circular pattern, which would be drilled, grouted, and reinforced.

### Optical Ground Wire and Fiber Optic Cable

Optical ground wire (OPGW) is the type of wire that would be installed at the top of each subtransmission structure, to provide lightening protection, grounding and communications. OPGW would replace traditional static/shield/earth wires on overhead subtransmission lines, with the added benefit of containing optical fibers that could be used for telecommunications. The OPGW would be non-specular and would have a diameter of 0.5 inch.

All-dialectric self-supporting (ADSS) fiber optic cable is non-metallic cable that is used for communications. ADSS cable would be installed below the conductor. The ADSS fiber optic cable would be non-specular and would have a diameter of 0.5 inch.

### Marker Balls

Marker balls are visibility markers placed on overhead ground wire or OPGW to make the conductor crossings visible to aircraft pilots. Marker balls may be required on up to 13 conductor spans (along Segments 1 and 4). The use of marker balls would depend on the Federal Aviation Administration's (FAA) determination as to whether the structure would propose a hazard to air navigation.

## 2.2.2 Substation Modifications

The Proposed Project would include substation-related work, as shown in Table 2-4.

**Table 2-4 Substation Modifications**

| Substation | Proposed Modifications |
|---|---|
| Banducci 66-kV Substation | • Replace conductor at existing positions at substation, which would include disconnecting and reconnecting.<br>• Connect optical ground wire (OPGW) to the ground grid at the existing substation.<br>• Install telecommunications equipment including new cable line within existing underground cable raceways and install new or replace existing infrastructure within existing control buildings or mechanical-electrical equipment rooms (MEERs). |

| Substation | Proposed Modifications |
|---|---|
| Gorman 66-kV Substation | • Replace conductor at existing positions at substations, which would include disconnecting and reconnecting.<br>• Install new OPGW and make minor modifications to the existing terminal racks to accommodate the new OPGW. Connect the OPGW to the ground grid at the existing substations.<br>• Install telecommunications equipment including new cable line within a new or existing underground cable raceway and install new or replace existing infrastructure within the control buildings or MEERs. |
| Kern River 1 Hydroelectric 66-kV Substation | • Replace conductor at existing positions at substations, which would include disconnecting and reconnecting.<br>• Install new OPGW and make minor modifications to the existing terminal racks to accommodate the new OPGW. Connect the OPGW to the ground grid at the existing substations.<br>• Install telecommunications equipment including new cable line within a new or existing underground cable raceway and install new or replace existing infrastructure within the control buildings or MEERs. |

*Source: (SCE, 2022)*

## 2.3 Right-of-Way, and Easements

### 2.3.1 Existing Right of Way and Easements

The majority of the project alignment is within existing right-of-way (ROW) on private lands. Easements over private lands vary in width, from 13 to 100 feet. The existing ROW for the 0.4-mile-long portion of the project alignment within the Sequoia National Forest (SNF) is 100 feet wide, and the ROW for the 0.8-mile portion of the project alignment on the Los Padres National Forest (LPNF) is 50 feet wide. The existing easements on State lands, where present, range from 25 to 50 feet wide. Portions of the project alignment also cross county and city roadways. The Proposed Project would replace structures in close proximity to the existing facility alignment and would be able to use portions of the existing ROW for the proposed structures.

### 2.3.2 New/Modified Right of Way and Easements

SCE does not possess sufficient ROW or easements for approximately 7.4 miles of the project alignment, as shown in Figure 2-11[1]. SCE would seek to obtain up to a 70-foot ROW for the subtransmission lines where existing ROW is insufficient. However, the specific width of the required easements would be developed during the final engineering process.

[1] The length of the project where ROW is insufficient will be confirmed upon completion of land surveys during the final engineering process. The mileage provided is an approximation based upon GIS data.

New permanent easements over private lands would be obtained by SCE through negotiations with landowners. New permanent or modified ROWs may be obtained from the relevant public agency through that agency's designated process. All acquisitions would be finalized during final engineering, and no properties or parcels, or partial properties or parcels, would be acquired in fee. The parcels over which new easements would be acquired are shown in Figure 2-11

### 2.3.3 Temporary Rights-of-Way and Easements

Some off-alignment construction work areas may require a temporary construction easement, including staging areas and helicopter landing zones. SCE anticipates obtaining temporary ROWs for all the staging areas listed in Section 2.4.4. Most temporary construction areas would be within the existing ROWs or easements; use of these areas would be available to SCE without a temporary ROW. Where portions of temporary construction areas extend beyond the easement boundary, SCE would obtain a temporary construction easement or temporary entry permit from the landowner. Temporary ROWs on federal lands (if identified during final engineering) would be acquired from the U.S. Forest Service (USFS). On non-federal and State lands, SCE would work with the appropriate landowners to acquire any necessary temporary construction easements and/or temporary entry permits.

## 2.4 Project Construction

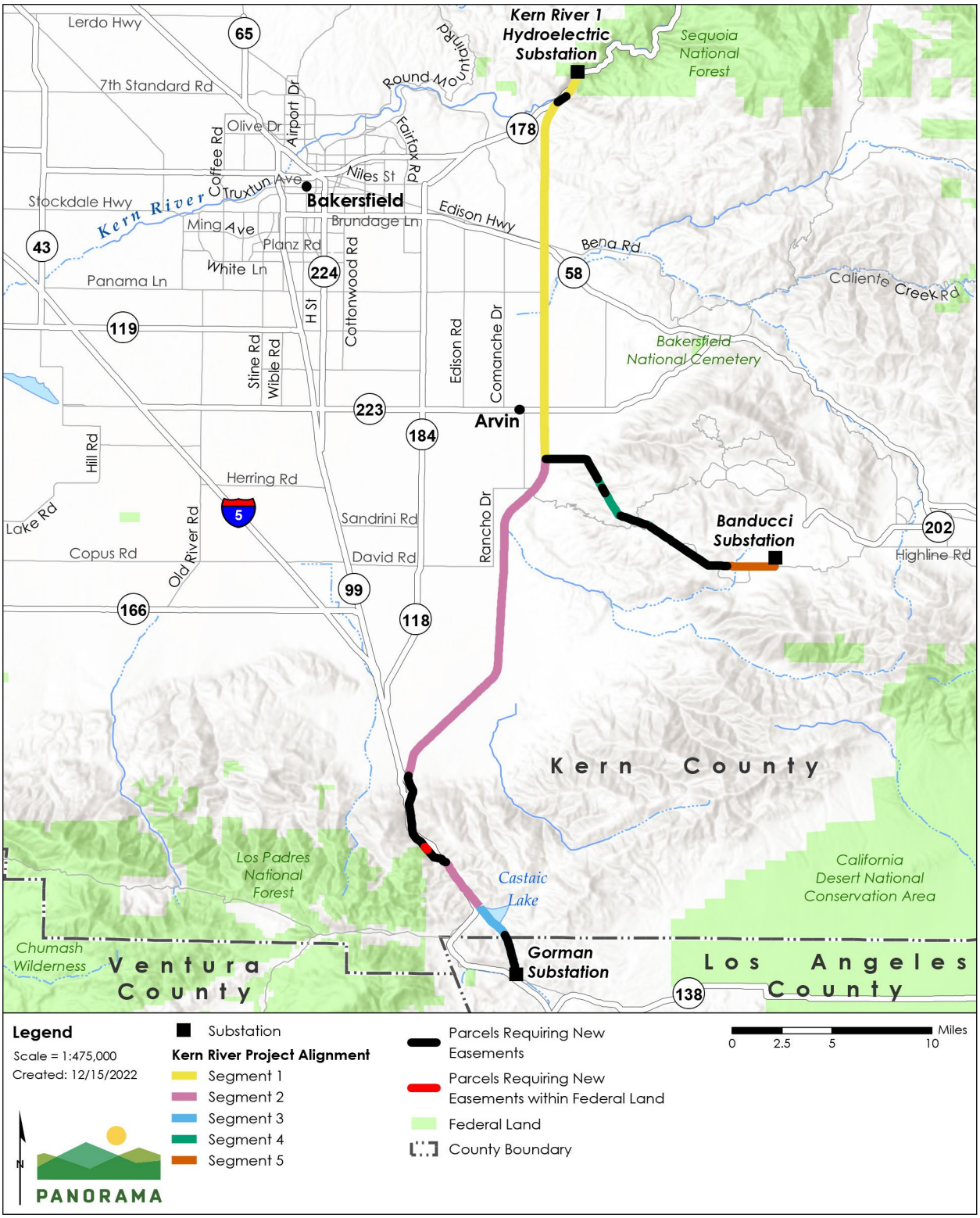
This section describes the construction activities associated with the following elements of the Proposed Project:

- Workers Environmental Awareness Training Program
- Construction Work Areas and Work Area Disturbance
- Construction Access
- Staging Areas
- Site Preparation
- Subtransmission Line Construction
- Substations
- Public Safety and Traffic Control
- Dust, Erosion, and Runoff Controls
- Water Use and Dewatering
- Hazardous Materials and Management
- Waste Generation and Management
- Fire Prevention and Response
- Workforce and Equipment
- Construction Schedule

### 2.4.1 Workers Environmental Awareness Training Program

SCE would prepare a Workers Environmental Awareness Training Program (WEAP). All project personnel would be required to attend the training, which would include the resource

**Figure 2-11 New Easements Required**




*Source: (SCE, 2022)*

protection and avoidance measures as well as procedures to be followed on discovery of environmental resources. The training would include, at a minimum, the following topics so that construction crews would understand their obligations: environmentally sensitive areas (ESAs) and other delineated boundaries (e.g., work areas); housekeeping (trash and equipment cleaning); safety, hazardous materials, and fire management; work stoppage; communications protocols; consequences of non-compliance; Storm Water Pollution Prevention Plan (SWPPP) procedures; and environmental resources procedures (e.g., biological, cultural, and paleontological).

### 2.4.2 Construction Work Areas and Work Area Disturbance

Project construction would be performed in the following work areas:

- helicopter landing zones and touchdown areas
- temporary work pads for facility installation, modification, or removal
- temporary guard structures
- temporary pull-and-tension/stringing sites
- splice sites for conductor and overhead ground wire removal and installation.

Each construction work area is described next.

#### Helicopter Landing Zones and Touchdown Areas

The activities that may be performed at any given helicopter landing zone (including touchdown areas) would include:

- dropping off or picking up construction crew members
- dropping off or picking up air-portable construction equipment
- assembling structure sections (e.g., installing cross-arms or hardware on a section of structure)
- lifting structure sections by helicopter
- disposing removed LSTs or LST sections
- dropping off or picking up conductor pull rope
- dropping off or picking up conductor
- loading and unloading structures, LST sections, and other material to and from trucks
- parking temporary vehicles and equipment

Additional activities could be performed at helicopter landing zones within a staging area, including helicopter fueling.

#### Temporary Work Pads for Facility Installation, Modification, or Removal

Temporary work pads, also referred to as construction work areas, would serve as temporary work areas for crews and where project-related equipment and/or materials would be placed at or near each structure location. The activities that may be performed at any given temporary work pad would include:

- installing TSPs, TSP H-frames, LWS structures and LWS H-frames

- removing existing structures (LSTs or poles)
- modifying LSTs
- removing conductor from existing structures
- installing conductor and OPGW/OHGW on replacement structures
- splicing conductors
- removing or trimming vegetation
- surface grading, leveling, and/or compacting
- benching
- parking temporary vehicles and equipment
- Installing foundations as required
- Installing temporary "Guard" Structures

### Temporary Guard Structures

Guard structures are temporary facilities that typically would be installed at transportation, flood control, aqueducts, railroad crossings and utility crossings, including roads before conductor, OPGW/ADSS fiber optic cable removal or installation activities. These structures would be designed to support the conductor, OPGW, or ADSS fiber optic cable if it momentarily "sagged" below a conventional "sagging" height. Depending on the overall spacing of the conductors being installed, approximately one to five guard structures would be required on either side of a crossing. In some cases, the temporary guard structures could be substituted by using specifically equipped boom trucks or, at highway crossings, temporary netting could be installed if required. Guard structures would be installed at all crossings of electrical structures and roads where required. The guard structures would be removed after the conductor is secured into place. For highway crossings, SCE would work closely with the State of California Department of Transportation (Caltrans) to secure the necessary permits to install new conductors and remove existing conductors and install OPGW and remove ground wire.

### Conductor Pulling and Tensioning

Conductor Pulling and Tensioning locations are areas where equipment necessary for removal of existing conductor and OPGW are required. These same areas will be used for installation of new conductors and OPGW/ADSS fiber optic cable.

Each conductor, OPGW, or ADSS fiber optic cable removal or installation operation would consist of a "Puller" at one end of the pulling section and at the other end would be a conductor trailer including a "tensioner." "Pulling Sections" could include just one or multiple spans. "Wire pull" is the term used to describe the length of any given continuous wire installation process between two selected points along the line. Pulling-and-tensioning sites may be used for splicing and field snubbing of the conductors. Field Snubs are areas located usually in the middle of a "span" and are used to temporarily secure the conductors while the Puller or Tensioner can be turned 180 degrees to "Pull" or "Pay Out" conductor in the opposite direction.

### Splice Sites for Conductor and Overhead Ground Wire Removal

Before removal of existing conductor, existing "Line Splices" will require to be removed and replaced with "Pulling Socks". Because existing line Splices, which join the conductor ends together should not travel through the rollers used during conductor removal activities. At each existing "Line Splice" location, construction crews using bucket trucks will remove the existing Line Splice and install temporary "Pulling Sock(s)".

### Summary of Land Disturbance

Areas of project disturbance are summarized in Table 2-5.

**Table 2-5 Work Area Disturbance**

| Work Area | Quantity | Preferred Size (feet) | Temporary Disturbance (acres) | Permanent Disturbance (acres) |
|---|---|---|---|---|
| Staging Areas | 36 | Varies | 134 | 0 |
| Helicopter Landing Zones and Touchdown Areas | 2 | Varies | 1.27 | 0 |
| **Temporary Work Pads for Facility Installation Modifications, or Removal** | | | | |
| Install TSP | 119 | 200 by 150 | 81.9 | 7.1 |
| Install TSP H-frame | 4 | 200 by 150 | 2.8 | .4 |
| Install LWS structure | 338 | 200 by 100 | 155.2 | 16.9 |
| Install LWS H-frame | 11 | 200 by125 | 6.3 | .7 |
| Remove existing structure | 477 | 22 by 150 | 25.1 | 0 |
| Modify LST | 6 | 200 by 100 | 2.8 | 0 |
| Modify existing structure | 4 | 75 by 75 | .5 | 0 |
| Excavation and associated equipment work areas | 370 | Varies | .2 | 0 |
| Temporary guard structures | 194 | 75 by 75 | 25.1 | 0 |
| Pull-and-tension/stringing sites | 290 | 400 by 150 | 399.4 | 0 |
| Splice sites, conductor and overhead ground wire installation | 2 | 400 by 100 | 1.8 | 0 |
| **Total Disturbance Areas** | | | **833 acres** | **25.1 acres** |
| **Existing Permanent Disturbance Area to be abandoned and considered no longer permanently disturbed** | | | | **44.9 acres** |
| **Net Disturbance Area** | | | **833 acres** | **-19.8 acres** |

*Source: (SCE, 2022)*

### 2.4.3 Construction Access

During construction, the project area would be accessed by unpaved access and spur roads, overland routes, helicopters, unpaved public roads, and paved public roads. Access roads would be roads running between structure sites and serving as the main transportation routes along the subtransmission line alignments. Spur roads would be roads leading from access roads and terminating at one or more structure sites. Construction activities to establish access to the project area are described next.

#### Modifications to Existing Access Roads and Spur Roads

Approximately 84 miles of existing access and spur roads would be used for project construction. All existing access and spur roads are expected to require rehabilitation work, including regrading and repairing the existing roadbeds. Access and spur roads would be cleared of vegetation; blade-graded to remove potholes, ruts, and other surface irregularities; and re-compacted to provide a smooth and dense riding surface, capable of supporting heavy construction equipment. As part of the rehabilitation, vegetation within and along the existing road prism may be trimmed and/or removed to prevent vegetation from intruding into the roadway. In some locations, road base (crushed rock), temporary plating, or matting may be placed within the existing road prism. This road base, temporary plating, or matting may be laid to compensate for soft soils. Road base, plating, or matting would be removed at the end of construction. This activity may be repeated as required during project implementation.

Before the start of construction, some of the existing 84 miles of access and spur roads may require more extensive rehabilitation. The extent and scope of this rehabilitation is unknown at this time, because field conditions along the project alignment are subject to change. More extensive rehabilitation could include:

- widening of the existing roadbed at curves and other locations, and
- installing new or repairing existing drainage structures, such as wet crossings, water bars, over-side drains, and pipe culverts, to allow construction traffic use as well as to prevent road damage from uncontrolled water flow.

Where existing access or spur roads cross culverted waterways, temporary plating or matting may be laid over the roadway, to protect the culverts and support the movement of heavy construction equipment. Plating or matting also may be placed in other locations, depending on surface conditions at the time of construction.

#### Overland Access Routes

Approximately 2.4 miles of new overland access routes would be used during project construction. No grading or gravel placement would occur in these areas. The overland access routes would be approximately 14 feet wide. Establishment of overland access routes would involve trimming vegetation while leaving the root structure intact, or vehicles would drive over the extant vegetation (overland travel). In some locations, temporary matting may be placed on the ground surface to facilitate access to a work location. No blading, grading, or gravel placement would occur on overland access routes.

### Helicopter Access

Light, medium, and heavy helicopters may be used during project construction. Helicopters would be used to support construction in areas where access is limited (e.g., no suitable access or spur road, limited construction area to facilitate on-site construction activities, and/or environmental constraints exist to accessing a construction work area with standard construction vehicles and equipment) or where helicopter-supported construction would provide environmental, cost, and schedule savings compared to surface construction.

Helicopter takeoff and landing areas typically include helicopter landing zones and staging areas, and public and private airports or airstrips. SCE also anticipates using the staging areas listed in Table 2-6 as helicopter staging areas. Helicopter refueling generally would occur off-site at local airports and at the staging areas; in some instances, helicopter refueling could occur at locations along the project alignment that are not identified as staging areas.

Flight paths would be determined immediately before construction by the helicopter contractor. Flight paths would be filed with the appropriate authorities. When operated, helicopters generally would be flown only during daytime hours (the period from 30 minutes before sunrise to 30 minutes after sunrise).

## 2.4.4 Staging Areas

SCE anticipates using multiple staging areas listed in Table 2-6 and shown in Figure 2-12. The size of each of the identified staging areas and the total acreage associated with staging areas are shown in Table 2-6. Details of each substation are provided in Appendix A, Project Components.

**Table 2-6 Potential Staging Area Locations**

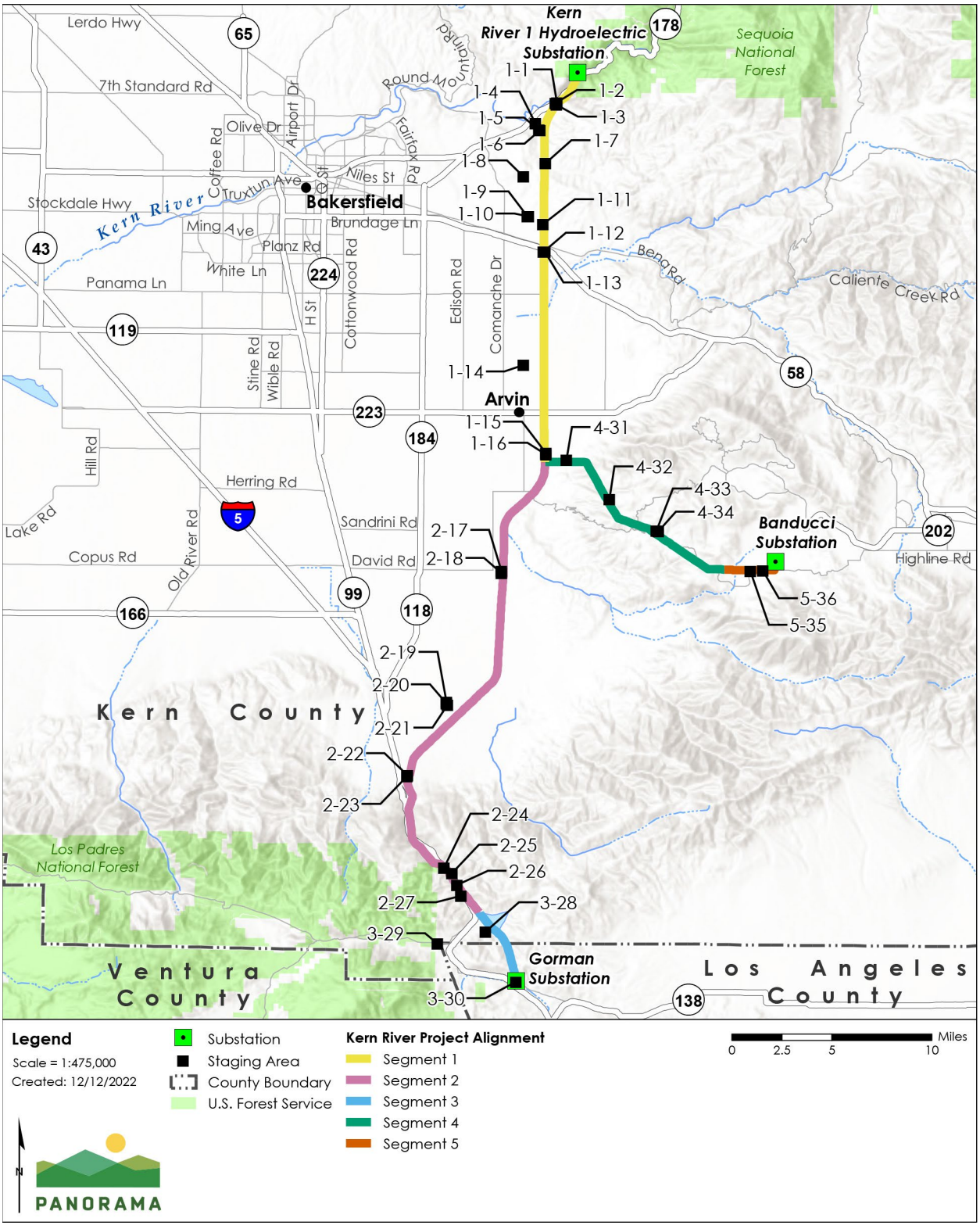
| Staging Area Name | Location | Condition | Approx. Area (acres) | Project Component |
|---|---|---|---|---|
| 1-1 | Kern Canyon Road | Grassland | 4.0 | Segment 1 |
| 1-2 | Kern Canyon Road | Grassland | 3.5 | Segment 1 |
| 1-3 | Kern Canyon Road | Ruderal/Disturbed | 2.2 | Segment 1 |
| 1-4 | Kern Canyon Road | Disturbed | 0.9 | Segment 1 |
| 1-5 | Kern Canyon Road | Disturbed/Grassland | 1.8 | Segment 1 |
| 1-6 | Kern Canyon Road | Disturbed/Grassland | 5.0 | Segment 1 |
| 1-7 | Breckenridge Road | Disturbed | 4.2 | Segment 1 |
| 1-8 | Breckenridge Road | Disturbed/Grassland | 4.9 | Segment 1 |
| 1-9 | Bakersfield-Tehachapi Highway | Disturbed | 4.9 | Segment 1 |
| 1-10 | Bakersfield-Tehachapi Highway | Disturbed | 5.0 | Segment 1 |

| Staging Area Name | Location | Condition | Approx. Area (acres) | Project Component |
|---|---|---|---|---|
| 1-11 | Bakersfield-Tehachapi Highway | Disturbed | 5.0 | Segment 1 |
| 1-12 | Tower Line Road | Disturbed | 4.8 | Segment 1 |
| 1-13 | Tower Line Road | Disturbed | 4.1 | Segment 1 |
| 1-14 | Tejon Highway | Disturbed | 2.2 | Segment 2 |
| 1-15 | Millux Road | Agricultural | 4.7 | Segment 2 |
| 1-16 | Millux Road | Agricultural | 4.9 | Segment 2 |
| 2-17 | Rancho Road | Agricultural | 4.8 | Segment 3 |
| 2-18 | Rancho Road | Agricultural | 4.9 | Segment 3 |
| 2-19 | Laval Road | Disturbed | 3.2 | Segment 3 |
| 2-20 | Laval Road | Disturbed | 3.1 | Segment 3 |
| 2-21 | Laval Road | Disturbed | 4.5 | Segment 3 |
| 2-22 | Edmonston Pumping Plant Road | Disturbed | 1.6 | Segment 3 |
| 2-23 | Edmonston Pumping Plant Road | Asphalted | 1.5 | Segment 3 |
| 2-24 | I-5 | Disturbed | 0.8 | Segment 3 |
| 2-25 | Lebec Road | Asphalted | 4.4 | Segment 3 |
| 2-26 | Lebec Road | Disturbed | 1.4 | Segment 3 |
| 2-27 | Lebec-Clear Canyon Road | Disturbed/Grassland | 1.1 | Segment 3 |
| 3-28 | Crane Canyon Road | Disturbed/Grassland | 3.0 | Segment 3 |
| 3-29 | Frazier Mountain Road | Disturbed/Grassland | 5.0 | Segment 3 |
| 3-30 | Gorman Substation | Disturbed/Grassland | 1.5 | Segment 3 |
| 4-31 | Bear Valley Road | Disturbed/Grassland | 9.9 | Segment 4 |
| 4-32 | Bear Valley Road | Grassland | 2.2 | Segment 4 |
| 4-33 | Comanche Point Road | Grassland | 4.7 | Segment 4 |
| 4-34 | Comanche Point Road | Grassland | 5.0 | Segment 4 |
| 5-35 | Banducci Road | Grassland | 5.0 | Segment 4/5 |
| 5-36 | Banducci Road | Grassland | 4.1 | Segment 4/5 |

| Staging Area Name | Location | Condition | Approx. Area (acres) | Project Component |
|---|---|---|---|---|
| **Total Area** | | | **133.8** | |

*Source: (SCE, 2022)*

**Figure 2-12 Staging Areas**




*Source: (SCE, 2022)*

### Staging Area Preparation

Staging area preparation would involve grubbing (i.e., vegetation removal) and/or minor grading to provide a flat and compacted surface for the application of gravel or crushed rock, with the exception of staging areas that are asphalted or already have a rock base. No new access roads would be constructed to access any of the staging areas. Any land that may be disturbed in a staging area would be returned to preconstruction conditions following construction completion.

### Staging Area Uses

Staging areas would be used as the reporting location for workers, vehicle and equipment parking, helicopter landing zones, and as material storage areas. Materials commonly stored at the staging areas would include construction trailers, construction equipment, portable worker sanitation facilities, steel bundles, steel/wood structures, conductor/OHGW/OPGW reels, hardware, insulators, cross arms, signage, consumables (e.g., fuel and filler compound), waste materials for salvaging, recycling, or disposal, and SWPPP Best Management Practice (BMP) materials (e.g., straw wattles, gravel bags, silt fences).

The staging areas also may have construction trailers for supervisory and clerical personnel. Normal maintenance and refueling of construction equipment also would be conducted at the staging areas. All refueling—which may include helicopters—and fuel storage would be in accordance with the site-specific SWPPP.

### Staging Area Security

The staging areas would be secured through installation of temporary perimeter fencing and one or more gates; typically, chain-link fencing would be used. In some instances, existing fencing may be present at the staging area location; in these instances, temporary perimeter fencing would not be installed. Other security measures that may be employed at staging areas could include cameras, privacy screening, and security personnel.

### Staging Areas Power

Temporary power would be determined based on the type of equipment/facilities being used at the staging areas. If existing distribution facilities are available, a temporary service and meter may be used for electrical power at one or more of the yards. If determining that temporary power is not needed or available at a staging areas full-time, a portable generator may be used intermittently for electrical power at one or more of the yards.

### Staging Area Lighting

Staging areas may be lit for security; this lighting would be directed internally and on site. If temporary lighting is needed at staging areas, portable light standards would be placed at point(s) along the outside edge of the staging area as necessary. The sources of illumination on the light standards would be shielded, resulting in light being directed downward and inward (toward the staging area). To the extent feasible, light standards would be positioned so that illumination would be directed away from the nearest residence(s).

### 2.4.5 Site Preparation

#### Underground Utility Identification

Before the start of activities requiring excavation, SCE or its construction contractor would identify underground utilities by contacting DigAlert, conduct visual observations, conduct exploratory excavations (potholing), and/or use buried line locating equipment.

#### Temporary Power

Temporary power may be installed at one or more staging area(s) as part of project construction. The process for installing temporary power would be determined by the service provider but generally would include installing a temporary meter on a temporary structure, the temporary installation of one or more wood structures (to be installed in the same manner as guard structures) and installing temporary electrical cable from the meter to the load source(s) at the staging area(s).

#### Vegetation Clearing

Vegetation and trees would be trimmed or removed as needed at or adjacent to construction work areas, to facilitate the safe project construction and reduce fire hazards associated with construction activities. Only the minimum amount of vegetation and trees necessary for the safe construction and operation of structures and facilities would be removed.

Surveys indicate that 1,689 trees with a diameter of 8 inches at breast height or greater occur within anticipated project work areas and associated access roads. An additional 116 trees are rooted outside these work areas but overhang the anticipated work areas and/or access roads and may by subject to pruning that would remove 25 percent or more of the tree canopy or cause disturbance to more than 25 percent of the root zone under the dripline of the tree canopy. The actual number of trees subject to removal, pruning, and/or root disturbance would be quantified during construction and would depend on equipment size and height, as well as implementation of potential oak tree avoidance and protection measures. SCE would try to minimize the number of trees removed during final design.

Vegetation removal would consist of “brushing” (i.e., shrubs and other low-lying vegetation would be trimmed and/or removed within the construction work area). Vegetation removal generally would be accomplished using a mower-type attachment mounted to a tractor; in some instances, areas would be brushed by individuals using heavy-duty “weed whacker” type equipment. Vegetation growing on the road surface would be removed by a motor grader during the blade-grading of roads, to remove potholes, ruts, and other surface irregularities.

#### Work Area Stabilization

Benching of temporary work pads and pull-and-tension/stringing sites may be required to provide access for foundation construction, assembly, structure erection, and wire stringing activities during line construction. Benching is a technique in which an earth-moving vehicle excavates a terraced access to structure locations in extremely steep and rugged terrain. Benching also may be used on an as-needed basis in some areas to help ensure the safety of personnel during construction activities.

#### Grading

Staging areas and construction work areas could require minor grading to provide a reasonably level work surface for equipment and vehicle use. Sites would be graded so that water would run toward the direction of the natural drainage and as directed by the SWPPP requirements. In addition, drainage would be designed to prevent ponding and erosive water flows at the new structures. If there are any areas that require cut and fill, they would be compacted to at least 90 percent relative density and would be capable of supporting heavy vehicles.

### 2.4.6 Subtransmission Line Construction

#### Subtransmission Structure Removal

##### Wood Pole Removal

Both the above-ground and below-ground portions of the wood structures at each structure would be removed using a line truck or similar equipment with an attached boom. Ground crew members would hand-excavate at the base of each structure and hydraulic jacks would be placed around the base of the structure; a boom would be attached to the structure, and the structure then would be jacked and lifted out and placed in the temporary work pad area or on a trailer. The structures would be transported by truck to a staging area, and then to an SCE facility for re-use or recycling.

Helicopters may be used to remove structures where access is limited. When helicopters are used for structure removal, crews would first cut the structure approximately 4 feet above ground and fell the above-ground portion in the temporary work pad area. The remaining above-ground and below-ground portions of the structure would be removed using hydraulic pole jacks and/or by hand-digging. The two portions of the structure then would be removed by helicopter; each portion would be placed on the ground within a previously disturbed area or on a trailer or would be flown to a helicopter landing zone. The hole left from removing the structure would be backfilled and compacted.

##### LST and TSP Removal

LSTs and TSPs would be removed either whole or in pieces. If the topography and land use(s) surrounding the LST or TSP are suitable, a crane would be positioned proximate to the LST or TSP in the temporary work pad area, and the crane would place it in tension. The LST or TSP then would be unbolted or cut from its foundations, and lifted clear of its location, set down in the temporary work pad area or in another cleared or previously disturbed area, and then dismantled by hand or with cutting tools (e.g., cutting torches, pneumatic cutters). If a crane cannot be used in a given location, an LST or TSP may be dismantled in-place by hand or with cutting tools; in these instances, crews may work from bucket trucks or man-lifts in the temporary work pad area rather than climbing the structures.

Helicopters would be used to remove existing LSTs or TSPs when overland access for equipment is not feasible. When helicopters are used for removal, ground crews would unbolt or cut portions of the LST or TSP and attach a sling to the unbolted portion. This portion then would be lifted by helicopter and placed in a previously disturbed area or on a trailer. The steel

components would be transported to a staging area, where they would be prepared for recycling.

**Foundation Removal**

To remove LST or TSP foundations, crews would excavate around each of the foundations, and the foundations then would be demolished, generally with a jackhammer or other pneumatic tool. The demolished concrete would be removed from the site and transported to a staging area before final disposal. Foundations typically would be removed 2 to 3 feet below grade; the holes left from removing the foundations would be backfilled and compacted. Foundations may be left in-place in locations where their removal may cause slope or soil instability, and thus could contribute to localized erosion. Foundations also may be removed completely if leaving a portion of the foundations in the ground is not compatible with land use in the area.

### Foundation Construction

Direct-buried, LWS and wood structures would require a hole to be excavated using either an auger or backhoe or dug by hand. In some locations, corrugated steel, cardboard, slurry, or plastic forms may be placed to stabilize the excavation walls before installation of LWS structures. If a single concrete foundation is used, the hole would be drilled using truck or track-mounted excavators. Excavated material would be used as described in Section 2.4.10, Waste Generation and Management.

For concrete foundations, steel-reinforced cages would be set, positioning would be survey-verified, and concrete then would be poured in the excavation. Foundations in soft or loose soil or those extending below the groundwater level may be stabilized with drilling mud slurry. When mud slurry is used, it would be placed in the hole during the drilling process to prevent the sidewalls from sloughing. Concrete then would be pumped to the bottom of the hole, displacing the mud slurry. Depending on site conditions, the mud slurry brought to the surface typically would be collected in a pit adjacent to the foundation or vacuumed directly into a truck to be re-used or discarded at an appropriate off-site disposal facility.

Installation of micropile foundations would be used where there is no equipment access to the location. The micropile plant form including all the necessary equipment and material, including workers would be flown in using helicopters. Micropile foundations consist of several smaller diameter holes, using a drilling rig. Each micropile hole would be flushed with water or air to remove drill cuttings and loose material. After the holes are completed, rebar would be inserted in each hole and grout would be injected through grout tubes at the lowest point of each micropile, and the hole filled until viscous grout reaches the top of the casing. The micropiles then would be tied together, to act as a single unit foundation, in a reinforced concrete cap. Dry grout could be brought to each tower site and mixed at the site or could be flown in by helicopter.

During construction, existing concrete supply facilities would be used where feasible. However, because of the remoteness of some structure locations, a temporary concrete batch plant could be set up in one or more established staging areas.

## Subtransmission Structure Installation and Modification

### TSP/LWS Installation

TSP structures typically consist of multiple sections. The TSP/LWS sections would be placed at temporary work pads adjacent to each structure location. Depending on conditions at the time of construction, the top sections may come preconfigured, may be configured on the ground, or configured after structure installation with the necessary cross arms, insulators, and wire stringing hardware.

A crane would be used to install each TSP/LWS structure into the excavated hole. A crane or helicopter would be used to "stack" the sections onto the TSP foundation. TSPs and LWS structures also may be set by helicopter. When the base section is secured, the subsequent section(s) of the TSP would be slipped together into place onto the base section by crane or helicopter. Hydraulic jacks may be installed temporarily between structure sections to jack the structure sections together. The TSP sections then may be spot welded together for additional stability. Depending on the terrain and available equipment, the structure sections also could be pre-assembled into a complete structure before setting the structure.

### Wood Pole Installation

Depending on conditions at the time of construction, the wood structure could be configured on the ground or configured after structure installation with the necessary cross arms, insulators, and wire-stringing hardware. The structures then would be installed in the direct bury holes, typically by a line truck or crane. Existing Lattice Steel Tower Modification

At the northern end of Segment 1, approximately six existing LSTs would be modified to accommodate the OPGW. The modifications would include installation of new mounting hardware at the top of the LSTs. In addition, conductor-related hardware, including insulators, would be removed and replaced during conductor installation. This work would be performed by crews on the towers; crews would gain access to the LSTs by foot, overland vehicle, or helicopter.

## Above-Ground and Underground Conductor and Wire

### Telecommunications

#### *Overhead Installation*

Overhead OPGW installed on replacement and re-used structures would be installed simultaneously with conductor. ADSS fiber optic cable would be installed along Segment 5.

#### *Underground Installation*

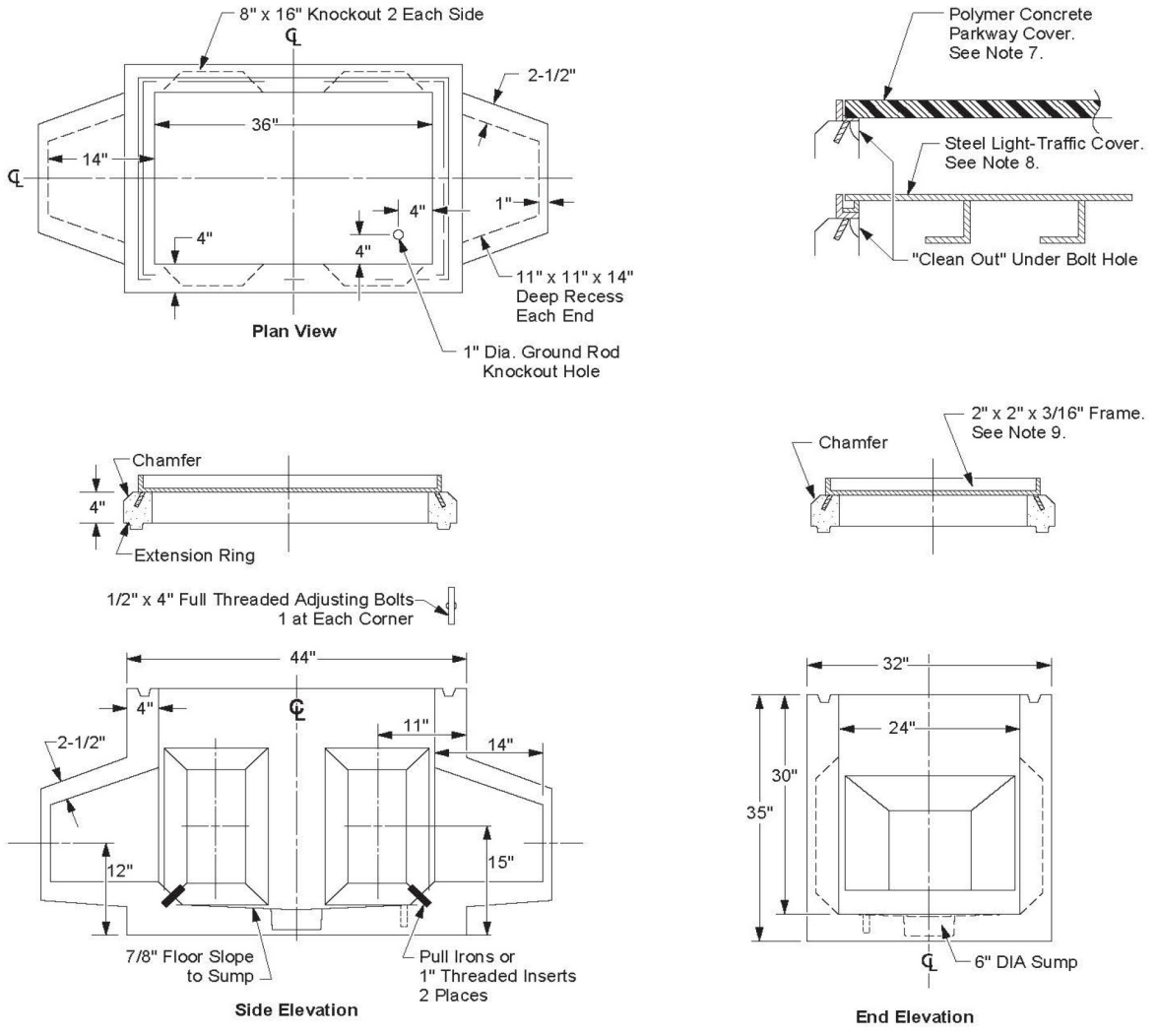
Short sections of fiber optic cable would be installed underground at and adjacent to the existing Banducci, Gorman, and Kern River 1 hydroelectric substations. OPGW would transition from an overhead configuration to an underground configuration through risers installed on replacement of existing structures (known as getaway poles).

Where existing conduit or cable raceways within and adjacent to the substations are available, underground fiber optic cable would be installed in these structures. If existing conduit or

raceways are not available within the substation, new conduit would be installed in trenches. New conduit also would be installed in trenches between the getaway pole(s) and the mechanical-electrical equipment rooms/telecommunications rooms/telecommunications cabinets in each substation. Conduit trenches would be approximately 12 inches wide and 36 inches deep. New underground conduit and structures typically would be installed with a backhoe. Polyvinyl chloride conduit would be placed in the trench and covered with a minimum of approximately 30 inches of concrete slurry, then backfilled and compacted. The fiber optic cable would be installed in an innerduct to protect and identify the cable within the underground conduit and structures. To install the innerduct, it would first be pulled in the conduit using a pull rope and pulling machine or truck-mounted hydraulic capstan. Then, the fiber optic cable would be pulled inside the innerduct using the same procedure.

Undergrounding would require excavation for installation of vaults or pull boxes at each end of the underground conduit (Figure 2-13). For each vault or pull box, a hole is excavated approximately 8 feet deep by 6 feet long by 6 feet wide. The vault or pull box would be lowered into place, connected to the conduits, and the hole would be backfilled with concrete slurry. One or more splice boxes also would be required on each getaway pole. SCE would install the fiber optic cable at the vaults and pull boxes and would splice the cable segments, where it transitions from underground to overhead.

## Figure 2-13 Vault and T-Pull Box Details




Created: 12/12/2022

PANORAMA

*Source: (SCE, 2022)*

Approximately three vaults or pull boxes would be installed, at or in the vicinity of the Gorman and Kern River 1 hydroelectric substations, resulting in the excavation of approximately 900 cubic feet of material. An additional approximately 1,800 cubic feet of material may be excavated for installation of underground fiber optic cable at or in the vicinity of the existing substations. Fiber optic cable is anticipated to be installed in underground facilities at the Banducci substation.

#### Guard Structures

Guard structures are used to help keep the existing conductors and the new installed conductors from coming in contact with the ground. Typically these guard structures are located at road crossings, over existing electrical circuits, and rail road crossings. These guard structures are made of two wood structures "uprights" and are direct buried into the ground. After the existing conductors have been removed and the new conductors have been installed these "guard structures" will be removed. In some cases, the guard structures could be substituted with the use of specifically equipped boom trucks, or at highway crossings, temporary netting could be installed if required. Typical guard structures are wood structures with diameters of 12 to 18 inches at the base and burial depths of 5 to 7 feet. Depending on the overall spacing of the conductors being installed, approximately three to five guard structures would be required on either side of a crossing. Guard structure wood structures would be installed using a direct-buried approach. Direct-buried wood structures would require a hole to be excavated using either an auger or a backhoe, or with the use of hydraulic or pneumatic equipment (e.g., jackhammers, drills). In some locations, corrugated steel or plastic forms may be placed to stabilize the excavation walls before installation of the structure. Following excavation of the structure hole, the wood structure then would be installed in the excavated or augured holes, typically by a line truck with an attached boom; the base would be secured by backfilling with the excavated material in the interstitial space between the wall of the excavated or augured hole and the structure.

### 2.4.7 Substations

#### Transformers/Electric Components

At the Gorman and Kern River 1 hydroelectric substations, conductor would be removed from the subtransmission racks, and new conductor would be connected to the existing racks. Minor modifications to the existing racks at each of the substations may be required, so that OHGW could be installed between the racks and the getaway structures. These minor modifications could include installation of new fittings to which the OHGW would be attached, or structural reinforcement of the existing racks could be added.

#### Communication Systems (Supervisory Control and Data Acquisition Software)

At the Banducci, Gorman, and Kern River 1 hydroelectric substations, SCE would install new terminal equipment, channel multiplexer equipment, equipment cabling, and other telecommunication equipment devices in the control buildings/mechanical-electrical equipment rooms. This installation work would provide the required telecommunication circuit connection for subtransmission line protection relay equipment in the substations. The work would occur

generally within the substation fence line on previously disturbed surfaces. SCE also would install cabling between the dead-end rack to the control rooms/mechanical-electrical equipment rooms at each of the substations and would install new relay and protection racks in those facilities.

### 2.4.8 Public Safety and Traffic Management

#### Public Safety Considerations

Because of the non-urbanized location of many of the project components, public safety considerations during construction could include:

- spills of fuels or hazardous materials;
- work being performed along public roadways;
- movement of construction equipment along public roadways;
- use of helicopters;
- construction-caused wildfire; and
- de-energized conductor being dropped on personal property during wire stringing activities.

Measures that would be implemented during project construction to address public safety considerations would include:

- development and implementation of one or more SWPPPs, to ensure that fuels and hazardous materials are used and handled according to applicable regulations, and to ensure efficient and effective response to spills;
- development and implementation of a spill prevention, control, and countermeasures plan, if necessary, to ensure that fuels are stored appropriately, and to ensure efficient and effective response to spills, as specified in Applicant Proposed Measure (APM) HAZ-1;
- development and implementation of a hazardous materials business plan (HMBP), to ensure that materials are managed according to applicable regulations, as specified in APM HAZ-1;
- development and implementation of traffic control plans, to meet local permit requirements and protect public safety during construction along public roadways, as specified in APM TRA-1;
- development and implementation of a helicopter use and safety plan, to address use of helicopters in areas where the public are present, as specified in APM TRA-2;
- development and implementation of a construction fire prevention plan, to mitigate the risk of construction activities triggering a wildfire, as specified in APM HAZ-3; and
- installation of guard structures or use of specially equipped trucks during wire stringing activities, where public roadways are crossed by the project alignment.

To ensure public safety during project construction, the public would be restricted from entering or transiting construction work areas and staging areas and also would be excluded from those areas of the alignment where overhead cable removal or installation activities are underway. Public access restrictions would be maintained for the duration of construction activities at a given location.

#### Traffic Control

During construction, SCE would implement APM TRA-1. SCE would install appropriate traffic control devices between work zones and transportation facilities, post signs, and follow the recommendations in the California Temporary Traffic Control Handbook regarding basic standards for the safe movement of traffic on highways and streets, in accordance with Section 21400 of the California Vehicle Code.

The locations, process, and timing for the closing of sidewalks, lanes, roads, trails, paths, or driveways to manage public access is presented in Section 4.16, Transportation. Overhead cable removal and installation activities would require the temporary closures of roads, lanes of roads (if the entire road does not need to be closed), and associated sidewalks or pedestrian paths. SCE would obtain encroachment permits from the local jurisdictions and Caltrans, as appropriate, for lane or roadway closures. Closures of private driveways would be coordinated with individual property owners. SCE would coordinate with the relevant jurisdictions to coordinate closure of paths and trails if necessary, during stringing of conductor or wire over paths and trails.

#### Security

Staging areas would be fenced and may be illuminated for security purposes. Security personnel either may patrol the staging areas periodically or be stationed at staging areas. Security measures would not be employed at construction work areas.

### 2.4.9 Site Management and Waste Disposal

#### Dust

During construction, migration of fugitive dust from work sites would be limited by control measures set forth by the Eastern Kern Air Pollution Control District (EKAPCD), San Joaquin Valley Air Pollution Control District (SJVAPCD), and South Coast Air Quality Management District (SCAQMD). In addition, SCE would implement the following dust control measures:

- All exposed surfaces with the potential of dust-generating will be watered or covered with coarse rock to reduce the potential for airborne dust from leaving the site.
- The simultaneous occurrence of more than two ground-disturbing construction phases on the same area at any one time will be limited. Activities will be phased to reduce the number of disturbed surfaces at any one time.
- All haul trucks entering/leaving the site will be covered, and their loads will be trimmed as necessary.

- Wet power vacuum street sweepers will be used to sweep all paved access road, parking areas, staging areas, and public roads adjacent to project sites on a daily basis (at minimum) during construction. Use of dry power sweeping will be prohibited.
- Gravel or non-toxic soil stabilizers will be applied at all unpaved parking areas and staging areas.
- Soil stockpiles will be watered and/or covered daily.
- All vehicles will be limited to a speed of 15 miles per hour (mph) or less on unpaved areas.
- Dust monitoring will be implemented, in compliance with the standards of the local air district.
- Project construction will be halted during any periods when wind speeds are in excess of 50 mph.

#### Stormwater Management

To obtain coverage under the Construction General Permit, SCE would submit permit registration documents, including a Notice of Intent, to the State Water Resources Control Board (SWRCB) and would develop an SWPPP that complies with the Construction General Permit requirements. SCE also would receive an SWRCB-issued Waste Discharger Identification number before starting construction activities. SCE would implement the SWPPP during construction, which would include requirements for inspections and monitoring, BMPs, and requirements to revise the SWPPP and implement revisions as needed to protect stormwater quality. The SWPPP would describe the following:

- project location, site features, area of disturbance, dates of construction, and types of materials and activities that may result in pollutant discharges;
  BMPs to implement during construction, to control erosion, discharge of sediments, and other potential impacts associated with construction activities;
- an inspection and maintenance program for BMPs; and
- a sampling and analysis plan for monitoring pollutant discharges to water bodies, if required.

SCE must submit a Notice of Termination (NOT) to the SWRCB after completing a project, subject to the Construction General Permit to be relieved of the permit requirements. Final soil stabilization throughout the project area would need to be achieved before the SWRCB would approve the NOT.

### 2.4.10 Waste Generation and Management

#### Solid Waste

Project construction would result in generation of various solid wastes, including metals (from the removed LSTs, conductor, OHGW, and associated fittings), wood structures, wood pallets, cardboards/papers (e.g., from material packaging), worker-generated solid waste (e.g., food and food packaging), and organic waste (e.g., removed vegetation). Solid waste generated during

project construction would be collected at the point of creation, transported to a staging area, and then temporarily stored at a staging area as the solid waste awaits salvage, recycling, and/or disposal. Solid wastes would be sorted, and recyclable and non-recyclable materials would be stored separately at the staging areas. Solid wastes would be transported off-site using SCE-approved transporters and disposed at one or more SCE-approved disposal facilities or at an industrial-scale recycling facility. Mulch or green waste would be removed from the site in a covered vehicle, to prevent seed dispersal and transported to a licensed landfill or composting facility.

Approximately 900 tons of metal, consisting of 400 tons of steel from existing towers, 36 tons of hardware, 462 tons of metals from subtransmission conductor, and 2.5 tons of OHGW would be removed, as would approximately 210 tons of concrete from the foundations of existing towers. The mass of miscellaneous solid waste (e.g., pallets, packaging) would be approximately 10 tons.[2]

Because of the very large mass and recyclable content (approximately 35 percent of waste) of the waste streams that would be generated during project construction, the steel from the removed LSTs, conductor, OHGW, and steel hardware and fittings are expected to be transported to industrial-scale recycling facilities. Appropriate disposal facilities for non-metallic recyclable materials and non-recyclable materials are available at the Bena Landfill near Bakersfield and the Tehachapi Sanitary Landfill.

### Liquid Waste

Sanitary waste is the only liquid waste planned to be generated during project construction. No other liquid wastes (e.g., drilling muds, contaminated waters) are expected to be generated. Portable toilets would be provided for on-site use by construction workers; sanitary waste would be collected, contained, and stored in these portable toilets before disposal by a licensed sanitation contractor. Sanitary waste would be treated at a wastewater treatment plant. The volumes of liquid waste generated during project construction would be approximately 25,000 gallons of liquid waste, commensurate with the number of workers on site during construction (i.e., a maximum of approximately 85 workers).

### Hazardous Waste

Only small volumes of hazardous waste are anticipated to be generated during project construction. The wood structures or portions of wood structures to be removed would be returned to a staging area, and would be re-used by SCE, returned to the manufacturer, disposed in a Class I hazardous waste landfill, and/or disposed in the lined portion of an

[2] This assumes a mass of 2,000 pounds per LST removed, 654 pounds/1,000 feet for conductor; 450 pounds/1,000 feet for OHGW; 100 pounds of hardware and fittings; and 50 pounds of miscellaneous solid waste per existing structure on which new conductor would be installed. Furthermore, this assumes that 2 tons per wood pole would be removed.

RWQCB-certified landfill. Approximately 149 wood structures (accounting approximately 69 H-frames, three 3-pole installations, and two single poles), weighing approximately 298 tons in total, would be removed.

All hazardous waste would be stored, handled, and used in accordance with applicable regulations. SCE crews and/or SCE's construction contractor would implement proper hazardous waste management activities, which would include preparation and implementation of a project-specific HMBP, as specified in APM HAZ-1.

To address contaminated soil or groundwater, SCE would develop and implement a soil management plan, per APM HAZ-2. The plan would direct that, if encountered, contaminated soil would be segregated, sampled, and tested to determine appropriate disposal options. If the soil is classified as hazardous, it would be managed properly on location and transported in accordance with U.S. Department of Transportation (USDOT) regulations using a Uniform Hazardous Waste Manifest to a Class I Landfill or other appropriate soil treatment or recycling facility, as approved by SCE. If potentially contaminated groundwater is encountered, then groundwater samples would be collected and tested to determine appropriate treatment and disposal. Hazardous waste would be transported and disposed in accordance with applicable rules, regulations, and SCE standard protocols, designed to protect the environment, workers, and the public.

The final disposition location of hazardous wastes to an SCE-approved facility would be determined by the construction contractor immediately before or during construction. One or more of the following SCE-approved facilities may be used:

- Clean Harbors, Buttonwillow LLC, 2500 West Lokern Road, Buttonwillow, CA 93206
- Kettleman Hills, 35251 Old Skyline Road, Kettleman City, CA 93239

### 2.4.11 Water Use and Dewatering

#### Water Use

Water would be used for dust control, for restoration activities, and in the construction of TSP foundations. Project construction is estimated to require approximately 350 acre-feet of water; this water would be consumed over the 2-year construction duration.

SCE preferentially would use recycled or reclaimed water, if and when such water is available; at this time, the volume of recycled or reclaimed water that would be available for purchase is unknown. However, if the full volume of water needed for the Proposed Project is available for purchase at competitive rates, SCE would use only recycled or reclaimed water. If recycled or reclaimed water is not available in sufficient quantities to supply the entirety of project water demand, SCE would purchase water from commercial purveyors to supplement the volumes of recycled or reclaimed water available. Because of the nature of water resources in the project area, water purchased from commercial purveyors could be sourced either from surface water or groundwater resources.

### Dewatering

During installation of TSPs or LWS structures, shallow groundwater may be encountered. In these instances, excavations would be dewatered using one or more pumps, and the water would be discharged on site to the surface (if so permitted) or be stored in Baker tanks or similar equipment before disposal off-site; Baker tanks or similar equipment would be located on the temporary work pad, established for new structure installation. Dewatering water also may be used for dust control.

## 2.4.12 Hazardous Materials and Management

Project construction would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. These would be used to power internal combustion engines, to lubricate internal combustion engines and other construction equipment and hardware, and for cleaning purposes. The estimated volumes of these materials that would be consumed or used during construction are shown in Table 2-7.

**Table 2-7 Types, Uses, and Volumes of Hazardous Materials**

| Hazardous Material Type | Use | Approximate Volume (gallons) |
|---|---|---|
| Diesel | Engine fuel | 386,486 |
| Gasoline | Engine fuel | 48,579 |
| Lubricants/Hydraulic Fluids | Engine and equipment lubrication/ Powering hydraulic equipment | 21,753 |
| Miscellaneous Construction Fluids (e.g., solvents) | Cleaning/lubricating hardware | 1,088 |

*Source: (SCE, 2022)*

Foundations would be sampled for the presence of asbestos before the start of removal activities; sampling would be performed in accordance with American Society for Testing Methods (ASTM) standard E2356-09, Standard Practice for Comprehensive Building Surveys. If asbestos-containing materials are identified, response actions would be performed in compliance with 8 California Code of Regulations (CCR) 1529 and overseen and monitored per ASTM standards E1368-05, Standard Practice for Visual Inspection of Asbestos Abatement Projects, and D7201-06, Standard Practice for Sampling and Counting Airborne Fibers, Including Asbestos Fibers, in the Workplace, by Phase Contrast Microscopy (with an Option of Transmission Electron Microscopy).

If a foundation is found to be an asbestos-containing material, it would be properly abated and disposed in a California Department of Toxic Substances Control (DTSC)-approved landfill that accepts asbestos-containing wastes. Notification to the local air quality management district having jurisdiction over the particular location would be made at least 10 business days before any demolition activities.

### 2.4.13 Fire Prevention and Response

SCE would implement standard fire prevention protocols during construction activities and comply with applicable laws and regulations. Vegetation clearing activities before the staging of equipment would minimize the potential for vehicles or equipment to start a fire. In the event that the National Weather Service issues a Red Flag Warning during project construction, additional measures would be implemented to address smoking and fire rules, storage and parking areas, the use of gasoline-powered tools, the use of spark arresters on construction equipment, road closures, the use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements.

### 2.4.14 Workforce and Equipment

SCE personnel on the project would include construction crews, environmental monitors, construction inspectors, and SCE personnel. SCE anticipates that two reconductoring crews would work concurrently, with up to approximately 85 construction personnel working at one time. Workers, monitors, and inspectors needed for each construction activity are listed in Table 2-8. Table 2-8 also lists the equipment that would be needed for each project activity and shows the typical use of equipment

**Table 2-8 Construction Equipment and Workforce**

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment (horsepower) | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (days) | Duration of Use (hours/day) | Estimated Production (per day) |
| **Survey** | | | | | | | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | 4 | Duration of Project | 10 | N/A |
| **Staging Areas** | | | | | | | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 4 | 5 | Duration of Project | 4 | N/A |
| R/T Forklift | 350 | Diesel | 4 | 5 | Duration of Project | 5 | N/A |
| Boom/Crane Truck | 350 | Diesel | 4 | 5 | Duration of Project | 5 | N/A |
| Generator | 45 | Diesel | 4 | 5 | Duration of Project | 10 | N/A |
| Water Truck | 300 | Diesel | 8 | 5 | Duration of Project | 10 | N/A |
| Truck, Semi-Tractor | 500 | Diesel | 4 | 5 | Duration of Project | 6 | N/A |
| Road Work | | | | 6 | 84 | | 84 miles |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | 6 | 84 | 5 | 1 mile per day |
| Backhoe/Front Loader | 350 | Diesel | 1 | 6 | 84 | 7 | 1 mile per day |
| Track Type Dozer | 350 | Diesel | 1 | 6 | 84 | 7 | 1 mile per day |
| Motor Grader | 350 | Diesel | 1 | 6 | 84 | 5 | 1 mile per day |

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment (horsepower) | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (days) | Duration of Use (hours/day) | Estimated Production (per day) |
| Water Truck | 300 | Diesel | 2 | 6 | 84 | 10 | 1 mile per day |
| Drum Type Compactor | 250 | Diesel | 1 | 6 | 84 | 5 | 1 mile per day |
| Excavator | 300 | Diesel | 1 | 6 | 42 | 7 | 1 mile per day |
| Lowboy Truck/Trailer | 500 | Diesel | 1 | 6 | 42 | 4 | 1 mile per day |
| **Install TSP Foundations** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | 5 | 238 | 5 | 0.5 TSP/day<br>119 TSPs total |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 238 | 7 | |
| Backhoe/Front Loader | 200 | Diesel | 1 | 5 | 238 | 10 | |
| Auger Truck | 500 | Diesel | 1 | 5 | 179 | 10 | |
| Water Truck | 350 | Diesel | 1 | 5 | 238 | 10 | |
| Dump Truck | 350 | Diesel | 1 | 5 | 238 | 10 | |
| Concrete Mixer Truck | 425 | Diesel | 2 | 5 | 179 | 6 | |
| **TSP Haul** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | 5 | 30 | 8 | 4 TSPs per day<br>119 TSPs total |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 30 | 8 | |
| Flat Bed Pole Truck | 400 | Diesel | 2 | 5 | 30 | 10 | |
| Water Truck | 350 | Diesel | 1 | 5 | 30 | 10 | |
| TSP Assembly | | | | 5 | 119 | | 119 TSPs |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | 5 | 119 | 6 | 1 TSP |

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment (horsepower) | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (days) | Duration of Use (hours/day) | Estimated Production (per day) |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | 5 | 119 | 6 | 1 TSP |
| Water Truck | 350 | Diesel | 1 | 5 | 119 | 10 | 1 TSP |
| Compressor Trailer | 60 | Diesel | 1 | 5 | 119 | 6 | 1 TSP |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 119 | 7 | 1 TSP |
| **TSP Erection** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 1 | 5 | 119 | 6 | 1 TSP/day<br>119 TSPs total |
| 1-Ton Truck, 4x4 | 300 | Diesel | 1 | 5 | 119 | 6 | |
| Water Truck | 350 | Diesel | 1 | 5 | 119 | 10 | |
| Compressor Trailer | 60 | Diesel | 1 | 5 | 119 | 6 | |
| R/T Crane | 350 | Diesel | 1 | 5 | 119 | 7 | |
| Jet A Fuel Truck | 300 | Diesel | 1 | 5 | 12 | 4 | |
| Helicopter Support Truck | 300 | Diesel | 1 | 5 | 12 | 6 | |
| Heavy-duty Helicopter | | Jet A | 1 | 5 | 12 | 1 | |
| **Install TSP H-frame Foundations** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | 5 | 8 | 5 | 1 TSP H-frame per day<br>4 TSPs total |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 8 | 7 | |
| Backhoe/Front Loader | 200 | Diesel | 1 | 5 | 8 | 10 | |
| Auger Truck | 500 | Diesel | 1 | 5 | 8 | 10 | |
| Water Truck | 350 | Diesel | 1 | 5 | 8 | 10 | |

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment (horsepower) | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (days) | Duration of Use (hours/day) | Estimated Production (per day) |
| Dump Truck | 350 | Diesel | 1 | 5 | 8 | 10 | |
| Concrete Mixer Truck | 425 | Diesel | 2 | 5 | 6 | 6 | |
| **TSP H-frame Haul** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | 5 | 4 | 8 | 1 TSP H-frame per day<br>4 TSPs total |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 4 | 8 | |
| Flat Bed Pole Truck | 400 | Diesel | 2 | 5 | 4 | 10 | 4 TSPs total |
| Water Truck | 350 | Diesel | 1 | 5 | 4 | 10 | 4 TSPs total |
| **TSP H-frame Assembly** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | 5 | 8 | 6 | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | 5 | 8 | 6 | 0.5 TSP H-frame per day<br>4 TSP H-frames total |
| Water Truck | 350 | Diesel | 1 | 5 | 8 | 10 | |
| Compressor Trailer | 60 | Diesel | 1 | 5 | 8 | 6 | |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 8 | 7 | |
| **TSP H-frame Erection** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 1 | 5 | 8 | 6 | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 1 | 5 | 8 | 6 | 0.5 TSP H-frame per day<br>4 TSP H-frames total |
| Water Truck | 350 | Diesel | 1 | 5 | 8 | 10 | |
| Compressor Trailer | 60 | Diesel | 1 | 5 | 8 | 6 | |
| R/T Crane | 350 | Diesel | 1 | 5 | 8 | 7 | |

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment (horsepower) | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (days) | Duration of Use (hours/day) | Estimated Production (per day) |
| Jet A Fuel Truck | 300 | Diesel | 1 | 5 | 1 | 4 | |
| Helicopter Support Truck | 300 | Diesel | 1 | 5 | 1 | 6 | |
| Heavy-duty Helicopter | | Jet A | 1 | 5 | 1 | 1 | |
| **Existing Pole Removal** | | | | | | | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | 5 | 37 | 10 | 4 structures per day<br>145 structures total |
| Compressor Trailer | 60 | Diesel | 1 | 5 | 37 | 5 | |
| Manlift/Bucket Truck | 250 | Diesel | 1 | 5 | 37 | 8 | |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 37 | 8 | |
| Flat Bed Pole Truck | 400 | Diesel | 1 | 5 | 37 | 10 | |
| Water Truck | 300 | Diesel | 1 | 5 | 37 | 10 | |
| **Existing Lattice Structure/TSP Removal** | | | | | | | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | 5 | 802 | 10 | 0.5 TSP or lattice structure per day<br>401 TSPs/ lattice structures total |
| Compressor Trailer | 60 | Diesel | 1 | 5 | 802 | 5 | |
| Manlift/Bucket Truck | 250 | Diesel | 1 | 5 | 802 | 8 | |
| Backhoe/Front Loader | 125 | Diesel | 2 | 5 | 802 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 802 | 8 | |
| Flat Bed Pole Truck | 400 | Diesel | 1 | 5 | 802 | 10 | |
| Water Truck | 300 | Diesel | 1 | 5 | 802 | 10 | |
| Jet A Fuel Truck | 300 | Diesel | 1 | 5 | 80 | 4 | |

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment (horsepower) | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (days) | Duration of Use (hours/day) | Estimated Production (per day) |
| Helicopter Support Truck | 300 | Diesel | 1 | 5 | 80 | 6 | |
| Medium-duty Helicopter | | Jet A | 1 | 5 | 80 | 6 | |
| Dump Truck | 350 | Diesel | 1 | 5 | 802 | 10 | |
| Excavator | 250 | Diesel | 1 | 5 | 802 | 10 | |
| R/T Crane (M) | 215 | Diesel | 1 | 5 | 802 | 5 | |
| R/T Crane (L) | 300 | Diesel | 1 | 5 | 802 | 7 | |
| **LWS Pole Haul** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 1 | 5 | 85 | 10 | |
| Water Truck | 300 | Diesel | 1 | 5 | 85 | 10 | 4 poles per day<br>338 structures total |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 85 | 8 | |
| Flat Bed Pole Truck | 400 | Diesel | 1 | 5 | 85 | 10 | |
| **LWS Pole Assembly** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | 5 | 85 | 6 | |
| Compressor Trailer | 60 | Diesel | 1 | 5 | 85 | 6 | 4 structures per day<br>338 structures total |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | 5 | 85 | 10 | |
| Water Truck | 350 | Diesel | 1 | 5 | 85 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 85 | 8 | |
| **Install LWS Pole** | | | | | | | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 1 | 5 | 85 | 6 | |

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment (horsepower) | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (days) | Duration of Use (hours/day) | Estimated Production (per day) |
| Manlift/Bucket Truck | 350 | Diesel | 1 | 5 | 85 | 10 | 4 structures per day<br>338 structures total |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 85 | 7 | |
| Auger Truck | 210 | Diesel | 1 | 5 | 85 | 8 | |
| Water Truck | 300 | Diesel | 1 | 5 | 85 | 10 | |
| Backhoe/Frontloader | 125 | Diesel | 1 | 5 | 85 | 10 | |
| Extendable Flat Bed Pole Truck | 400 | Diesel | 1 | 5 | 85 | 6 | |
| Jet A Fuel Truck | 300 | Diesel | 1 | 5 | 9 | 4 | |
| Helicopter Support Truck | 300 | Diesel | 1 | 5 | 9 | 6 | |
| Medium-duty Helicopter | | Jet A | 1 | 5 | 9 | 4 | |
| **LWS H-frame Haul** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 1 | 5 | 6 | 10 | 2 H-frames/ day<br>11 H-frames total |
| Water Truck | 300 | Diesel | 0.5 | 5 | 6 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 6 | 8 | |
| Flat Bed Pole Truck | 400 | Diesel | 1 | 5 | 6 | 10 | |
| **LWS H-frame Assembly** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | 5 | 6 | 6 | 2 H-frames/day<br>11 H-frames total |
| Compressor Trailer | 60 | Diesel | 1 | 5 | 6 | 6 | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | 5 | 6 | 10 | |
| Water Truck | 350 | Diesel | 1 | 5 | 6 | 10 | |

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment (horsepower) | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (days) | Duration of Use (hours/day) | Estimated Production (per day) |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 6 | 8 | |
| **Install LWS H-frame** | | | | | | | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 1 | 5 | 6 | 6 | 2 H-frames/day<br>11 H-frames total |
| Manlift/Bucket Truck | 350 | Diesel | 1 | 5 | 6 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 6 | 7 | |
| Auger Truck | 210 | Diesel | 1 | 5 | 6 | 8 | |
| Water Truck | 300 | Diesel | 1 | 5 | 6 | 10 | |
| Backhoe/Frontloader | 125 | Diesel | 1 | 5 | 6 | 10 | |
| Extendable Flat Bed Pole Truck | 400 | Diesel | 1 | 5 | 6 | 6 | |
| **Install/Remove Conductor/OPGW/OHGW** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 1 | 20 | 217 | 10 | 0.3 miles/ day<br>65 linear miles total |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | 20 | 217 | 10 | |
| Manlift/Bucket Truck | 250 | Diesel | 1 | 20 | 217 | 10 | |
| Boom/Crane Truck | 350 | Diesel | 1 | 20 | 217 | 10 | |
| Dump Truck | 350 | Diesel | 1 | 20 | 143 | 10 | |
| Wire Truck/Trailer | 350 | Diesel | 2 | 20 | 109 | 10 | |
| Sock Line Puller | 300 | Diesel | 1 | 20 | 55 | 10 | |
| Bull Wheel Puller | 350 | Diesel | 1 | 20 | 109 | 10 | |

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment (horsepower) | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (days) | Duration of Use (hours/day) | Estimated Production (per day) |
| Hydraulic Rewind Puller | 350 | Diesel | 1 | 20 | 217 | 10 | |
| Static Truck/ Tensioner | 350 | Diesel | 1 | 20 | 217 | 10 | |
| Backhoe/Front Loader | 125 | Diesel | 1 | 20 | 55 | 8 | |
| Truck, Semi-Tractor | 400 | Diesel | 2 | 20 | 217 | 10 | |
| Lowboy Truck/Trailer | 450 | Diesel | 2 | 20 | 217 | 10 | |
| Water Truck | 300 | Diesel | 1 | 20 | 217 | 10 | |
| Jet A Fuel Truck | 300 | Diesel | 1 | 20 | 109 | 4 | |
| Helicopter Support Truck | 300 | Diesel | 1 | 20 | 109 | 7 | |
| Light Helicopter | | Jet A | 1 | 20 | 109 | 5 | |
| Conductor Splicing Rig | 350 | Diesel | 1 | 20 | 55 | 10 | |
| Fiber Splicing Lab | 300 | Diesel | 1 | 20 | 55 | 10 | |
| **Install/Remove Guard Structures** | | | | | | | |
| 3/4-Ton Truck, 4x4 | 275 | Gas | 2 | 5 | 39 | 8 | 5 structures/day<br>194 structures total |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | 5 | 39 | 8 | |
| Compressor Trailer | 60 | Diesel | 2 | 5 | 39 | 7 | |
| Backhoe/Front Loader | 125 | Diesel | 1 | 5 | 39 | 10 | |
| Water Truck | 300 | Diesel | 1 | 5 | 39 | 5 | |
| Manlift/Bucket Truck | 250 | Diesel | 1 | 5 | 39 | 8 | |
| Boom/Crane Truck | 350 | Diesel | 1 | 5 | 39 | 10 | |

| Work Activity | | | | Activity Production | | | |
|---|---|---|---|---|---|---|---|
| Primary Equipment Description | Estimated Equipment (horsepower) | Probable Fuel Type | Primary Equipment Quantity | Estimated Workforce | Estimated Schedule (days) | Duration of Use (hours/day) | Estimated Production (per day) |
| Auger Truck | 500 | Diesel | 1 | 5 | 39 | 8 | |
| Extendable Flat Bed Pole Truck | 400 | Diesel | 1 | 5 | 39 | 8 | |
| **Telecommunications Underground Infrastructure Installation** | | | | | | | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | 6 | 5 | 4 | |
| Backhoe/Front Loader | 125 | Diesel | 1 | 6 | 5 | 6 | |
| Dump Truck | 350 | Diesel | 2 | 6 | 5 | 6 | |
| Pipe Truck/Trailer | 275 | Diesel | 1 | 6 | 5 | 8 | 125 feet/day<br>600 feet total |
| Concrete Mixer Truck | 350 | Diesel | 3 | 6 | 5 | 2 | |
| Water Truck | 300 | Diesel | 1 | 6 | 5 | 6 | |
| Compressor Trailer | 60 | Diesel | 1 | 6 | 5 | 4 | |
| Lowboy Truck/Trailer | 450 | Diesel | 1 | 6 | 5 | 4 | |
| **Restoration** | | | | | | | |
| 1-Ton Truck, 4x4 | 300 | Diesel | 2 | 7 | 65 | 4 | |
| Backhoe/Front Loader | 125 | Diesel | 1 | 7 | 65 | 4 | |
| Motor Grader | 250 | Diesel | 1 | 7 | 65 | 6 | 1 mile/day<br>65 miles total |
| Water Truck | 300 | Diesel | 1 | 7 | 65 | 8 | |
| Drum Type Compactor | 100 | Diesel | 1 | 7 | 65 | 4 | |
| Lowboy Truck/Trailer | 450 | Diesel | 1 | 7 | 65 | 4 | |

*Source: (SCE, 2022)*

### 2.4.15 Construction Traffic

Construction equipment would be transported to and from construction work areas along the project alignment by being driven (in the case of self-propelled vehicles) or towed (in the case of equipment that is not self-propelled) along public roadways and along the existing network of access roads. Construction crews would be transported to and from construction work areas along the project alignment in construction vehicles (pick-up trucks or other self-propelled vehicles) or by helicopter. Along the project alignment, many pieces of construction equipment would be likely to be left at work areas overnight and on off-days (e.g., holidays) rather than being driven to and from construction work areas each day. The vehicle miles traveled (VMT) estimated to be generated during construction are shown in Table 2-9.

**Table 2-9 Vehicle Miles Traveled during Project Construction**

| Vehicle Type | VMT (daily)[a] | VMT (total) |
|---|---|---|
| Worker Vehicles | 1,598 | 957,250 |
| Construction Vehicles | 1,203 | 720,480 |

Note:

[a] Assumes 6-day construction week, and 24-month construction duration, totaling 599 workdays.

*Source: (SCE, 2022)*

### 2.4.16 Construction and Work Schedule

Project construction is anticipated to take approximately 23 months. Construction is anticipated to begin in June 2026 and end in May 2028. Some activities may be performed concurrently; for instance, pull-and-tension/stringing sites may be established at the same time as guard structures are being installed, and the restoration of disturbed areas may occur at the same time as staging area demobilization and restoration is occurring. Furthermore, work could occur in one or more segments simultaneously.

To the extent feasible, construction activities would occur between 7 a.m. and 7 p.m., Monday through Saturday, or during the hours established in local ordinances and/or in any ministerial permits obtained. However, at limited times some construction along the project alignment may be required or finished outside these hours. The dates and locations of such work is not known at this time.

### 2.4.17 Project Operation and Maintenance

SCE would continue to perform O&M activities as described herein along the subtransmission lines that would be included under the Proposed Project. In addition, SCE would conduct a wide variety of emergency repairs in response to emergency situations, such as damage resulting from high winds, storms, fires, and other natural disasters, and accidents. Such repairs could include replacement of downed structures or lines, or re-stringing of conductors. Emergency repairs could be needed at any time.

### 2.4.18 Inspection Programs

Portions of the project alignment are in a high-fire threat district: portions of Segments 4 and all of Segment 5 are in an area designated by the California Public Utilities Commission (CPUC) as Tier 3-Extreme, and portions of Segments 1, 2, 3, and 4 are in areas designated by the CPUC as Tier 2-Elevated. Asset management and inspections of SCE's Wildfire Mitigation Plan, as detailed on the CPUC website, would be performed as applicable in these areas.

#### Inspection Processes

GO 165 inspections are performed via ground and/or aerial observation. No new access would be required for future inspections; ground-based inspections would be performed using the existing network of access and spur roads.

#### Proposed Maintenance Programs

The existing maintenance activities performed along the subtransmission lines included under the Proposed Project would be unchanged by project construction. Maintenance would occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing structures and towers, tree trimming, brush and weed control, and access road maintenance.

Most regular O&M activities for overhead facilities are performed from existing access roads with no surface disturbance. Repairs done to existing facilities, such as repairing or replacing existing structures and towers, could occur in undisturbed areas.

Existing conductors could require re-stringing to repair damage. Some pull-and-tension/stringing site locations could be in previously undisturbed areas, and at times, conductors could be passed through existing vegetation during re-stringing activities.

Insulators could require periodic washing with water to prevent the buildup of contaminants (e.g., dust, salts, animal droppings, smog, condensation) and reduce the possibility of electrical arcing that can result in circuit outages and potential fire. Frequency of insulator washing is region-specific and based on local conditions and build-up of contaminants. Replacement of insulators, hardware, and other components is performed as needed to maintain circuit reliability.

Some structure locations and/or laydown areas could be in previously undisturbed areas and could result in ground and/or vegetation disturbance, though attempts would be made to use previously disturbed areas to the greatest extent possible. In some cases, new temporary access would be created to remove and replace an existing structure.

In some cases, structures would not have access roads and could be accessed only on foot, by helicopter, or by creating temporary access areas. O&M-related helicopter activities could include transportation of transmission line workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, and conductor and OPGW stringing operations. Helicopter landing areas could need to be created in locations where access by road is infeasible.

### Access Road Maintenance

Routine access road maintenance is conducted on an annual and/or as-needed basis. Road maintenance includes maintaining a vegetation-free corridor, to facilitate access and for fire prevention, and blading, to smooth over washouts, eroded areas, and washboard surfaces as needed. For the Proposed Project, access road maintenance could include brushing (i.e., trimming or removal of vegetation) approximately 2 to 5 feet beyond berms or the road edge when necessary to keep vegetation from intruding into the roadway. Road maintenance also could include cleaning ditches, moving, and establishing berms, clearing, and making functional drain inlets to culverts, culvert repair, clearing and establishing water bars, and cleaning and repairing over-side drains. Access road maintenance would include repair, replacement, and installation of stormwater diversion devices on an as-needed basis.

## 2.5 Applicant-Proposed Measures

SCE included APMs in its February 2022 Proponents Environmental Assessment (PEA). Further revisions were made in October 2022. SCE proposes to implement these measures during project design, construction, and operation, to avoid or minimize potential environmental impacts. APMs are considered part of the Proposed Project in the evaluation of environmental impacts. The APMs are shown in Table 2-10.

**Table 2-10 Applicant-Proposed Measures**

| APM Number | Requirements |
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| AIR-1 | **Tier 4 Construction Equipment**. All construction equipment with rating between 100 and 750 horsepower (hp) will be required to use engines compliant with U.S. EPA Tier 4 non-road engine standards. In the event a Tier 4 engine is not available for any off-road construction equipment with rating at or higher than 100 hp, that documentation of the unavailability will be provided. |
| BIO-HERP-5 | **Tehachapi Slender Salamander**<br>**Pre-construction survey/Construction monitoring**. Prior to initial ground-disturbing activities, a qualified Tehachapi Slender Salamander (TSS) biologist will conduct focused surveys within areas identified as habitat for this species. Biological monitors shall monitor construction activities impacting areas identified as occupied or potentially occupied TSS habitat. If TSS are observed and relocation is required, SCE will obtain the necessary permits or authorizations to relocate salamander individuals to the closest habitat area containing talus, as required by California Department of Fish and Wildlife (CDFW) in applicable permits or habitat conservation plans.<br>**Avoid and minimize impacts.** All project activities located within areas identified as TSS habitat shall implement the following avoidance and minimization measures:<br>• **Limited Operating Period**. If occupied habitat is identified, no construction activities will occur during the TSS active period without coordination with CDFW, February through April, in work areas impacting TSS occupied habitat.<br>• Project activities occurring in habitat located within oak woodlands and ravines shall avoid displacing rocks, logs, bark, and other debris in thick leaf litter, near talus slopes.<br>**Trapped Animal Prevention**. All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to TSS will be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapment. At the start and end of each workday, and just before backfilling, all excavations will be inspected for trapped animals. If found, trapped animals will be removed by the qualified biologist and relocated to outside the Project footprint, as required in all applicable permits or habitat conservation plans. |
| BIO-MAM-2 | **San Joaquin kit fox**<br>Pre-construction survey/Construction monitoring. Within 30 days prior to initial ground-disturbing activities, a qualified biologist will conduct surveys within areas identified as habitat for San Joaquin kit fox. Known and potential dens shall be monitored for evidence of kit fox use by placing an inert tracking medium or an infra-red beam camera at the entrance and monitoring for at least five consecutive nights. A qualified biologist will monitor construction activities within occupied kit fox habitat. If SJKF occupancy is determined at a given site during pre-construction surveys, USFWS and CDFW will be consulted for any necessary and unavoidable impacts prior to conducting work.<br>**Agency consultation and den avoidance** |

If there are known or potential SJKF dens within project impact areas or project activities within den exclusion zone distances, CDFW and U.S. Fish and Wildlife Service (USFWS) will be consulted to ensure project activities will not impact the species.

The following exclusion zones will be established for SJKF dens in accordance with the 2011 USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox:

- **Potential and atypical dens**. An exclusion zone with a minimum radius of 50 feet as measured outward from the entrance or cluster of entrances will be maintained. Potential dens include any hole of any appropriate size for SJKF. Atypical dens may include any man-made structure, pipes, culverts, and similar structures with a diameter of approximately 4-inches or greater.
- **Known/occupied dens**. An exclusion zone with a minimum radius of 100 feet as measured outward from the entrance or cluster of entrances will be maintained.
- **Natal/pupping dens**. If a den is identified as known/occupied during the breeding season (February through September), the den will be demarcated with a 200-foot buffer.
- Actions within exclusion zones will be limited to essential vehicle and equipment travel on authorized roads and foot traffic and will be monitored by a qualified biologist.

No modification to existing occupied or natal dens can occur without authorization from USFWS and/or CDFW and in accordance with the 2011 USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox. Natal/pupping dens will not be destroyed until the pups and adults have vacated. If a den can be avoided by construction, but the exclusion zone can't be, then the den can have a one-way door installed or the entrance plugged once confirmed not to be occupied; one-way doors will be removed at the end of construction. If a den cannot be avoided by construction, the den might be able to be removed but may require additional mitigation, such as the creation of artificial dens. Dens in which no activity was detected may be closed by a qualified biologist following agency guidelines.

**Avoid and minimize impacts**. The following avoidance and minimization measures shall be implemented for all project activities located within areas identified as SJKF habitat:

- **Limited Operating Period**. Within occupied SJKF areas, SCE shall restrict work to daylight hours, except during an emergency, in order to avoid nighttime activities when kit fox may be present on access roads.
- **Disposal of Trash**. Trash and food items will be contained in closed containers and removed daily to reduce attractiveness to opportunistic predators.
- **Pets Prohibited**. Employees will not bring pets or other animals to the GKR Project area, unless the animal is ADA compliant.
- **Vehicle Travel**. During construction-related activities, motor vehicles will be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Project footprint. Motor vehicle speeds along Project routes and access roads within areas identified as habitat for SJKF will not exceed 20 miles per hour.
- **Trapped Animal Prevention**. All auger holes, trenches, pits, or other steep-sided excavations that may pose a hazard to SJKF will be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapping SJKF. At the start and end of each workday, and just before backfilling, all excavations will be inspected for trapped animals. Any SJKF found will be allowed to escape unimpeded. If a SJKF is trapped and does not leave on its own, a qualified biologist will move the

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| | animal according to agency authorizations, if there is no agency authorization, the fox shall not be moved (unless in imminent danger) until the USFWS and/or CDFW has been contacted and further guidance has been received.<br>• **Cover Construction Materials**. All construction pipes, culverts, or similar structures with a diameter of approximately four (4) inches or greater that are stored for one or more overnight periods will be thoroughly inspected for SJKF before the pipe is subsequently buried, capped, otherwise used or moved in any way. Likewise, all construction equipment with the potential to entrap SJKF (e.g., water buffalos, barrels, bins) will be covered or secured by turning over or tipping on their side to prevent trapping SJKF. All water tanks and containers will have tight fitting lids and will be checked to ensure the lids are closed and properly secured. Any SJKF found will be allowed to escape unimpeded. If a SJKF is trapped and does not leave on its own, a qualified biologist will move the animal according to agency authorizations, if there is no agency authorization, the fox shall not be moved (unless in imminent danger) until the USFWS and/or CDFW has been contacted and further guidance has been received. |
| BIO-RES-2 | **Develop Invasive Plant Management Plan.** SCE shall prepare and implement an Invasive Plant Management Plan (IPMP). This plan shall include measures designed to avoid the introduction and spread of new nonnative invasive plant species (invasive plants) and minimize the spread of existing invasive plants resulting from project activities. The IPMP shall be submitted to the CPUC and for review and approval prior to the start of construction.<br>For the purpose of the IPMP, invasive plants shall include plants that (1) are invasive and rated high or moderate for negative ecological impact in the California Invasive Plant Inventory Database (Cal-IPC, 2006), or (2) aid and promote the spread of wildfires (such as Bromus tectorum (cheatgrass), Brassica tournefortii (Sahara mustard), and Bromus madritensis spp. Rubens (red brome)) or (3) identified by USFS as special concern. The IPMP will be implemented throughout project pre-construction, construction, and restoration phases.<br>**Invasive Plant Management Plan**<br>The IPMP will include the information defined in the following sections:<br>**Assessment.** An assessment of the GKR Project's potential to cause spread or introduction of invasive plants into new areas, or to introduce new invasive plants into the ROW. This section will list known and potential invasive plants occurring on the ROW and in the project region and identify threat rankings and potential for project-related occurrence or spread for each species. This section will identify control goals (e.g., eradication, suppression, or containment) for invasive plants of concern with potential to occur on the ROW.<br>**Pre-construction invasive plant inventory.** SCE shall inventory of all invasive plants of concern in areas (both within and outside the ROW) subject to project-related vegetation removal/disturbance, overland travel (drive and crush), and ground-disturbing activity. The invasive plants inventory area shall also include vehicle and equipment access routes within the ROW and all project staging and storage yards. Invasive plants of concern shall be mapped by area of occurrence and percent cover. The map will be updated with new occurrences at least once a year.<br>**Pre-construction invasive plants treatment.** Invasive plant infestations identified in the pre-construction invasive plants inventory shall be evaluated to identify potential for project-related spread and potential benefits (if any) of pre-construction treatment. Pre-construction treatment will consider the specific invasive plants, potential seed banks, or other issues. The IPMP will identify any |

infestations to be controlled or eradicated prior to project construction. Control and follow-up monitoring of pre-construction invasive plants treatment sites will follow methods identified in appropriate sections of the IPMP.

**Prevention.** The IPMP will specify methods to minimize potential transport of new invasive plant seeds onto the ROW, or from one section of the ROW to another. The ROW may be divided into "weed zones," based on invasive plants of concern in the ROW. The IPMP will specify inspection procedures for construction equipment entering the GKR Project area. Vehicles and equipment may be inspected and cleaned at entry points to specified sections of the ROW, and before leaving work sites where invasive plants of concern must be contained locally. Construction equipment shall be inspected to ensure it is free of any dirt or mud that could contain invasive plant seeds, roots, or rhizomes, and the tracks, outriggers, tires, and undercarriage will be carefully washed, with special attention being paid to axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Other construction vehicles (e.g., pick-up trucks) that will be frequently entering and exiting the site will be inspected and washed on an as-needed basis. Tools such as chainsaws, hand clippers, pruners, etc., shall be cleaned of dirt and mud before entering project work areas.

All vehicles will be washed off-site when possible. If off-site washing is infeasible, on-site cleaning stations (including air washing) will be set up at specified locations to clean equipment before it enters the work area. Wash stations will be located away from native habitat or special-status species occurrences. Wastewater from cleaning stations will not be allowed to run off the cleaning station site. When vehicles and equipment are washed, a daily log must be kept stating the location, date and time, types of equipment, methods used, and personnel present. The log shall contain the signature of the responsible crewmember. Written or electronic logs shall be available to CPUC monitors on request.

Erosion control materials (e.g., straw bales) must be certified free of invasive plant seed ("weed-free") before they are brought onto the site. The IPMP must prohibit on-site storage or disposal of mulch or green waste that may contain invasive plant material. Mulch or green waste will be removed from the site in a covered vehicle to prevent seed dispersal and transported to a licensed landfill or composting facility.

The IPMP will specify guidelines for any soil, gravel, mulch, or fill material to be imported into the GKR Project area, transported from site to site within the GKR Project area, or transported from the GKR Project area to an off-site location, to prevent the introduction or spread of invasive plants to or from the GKR Project area.

**Monitoring.** The IPMP shall specify methods to survey for invasive plants of concern during pre-construction, construction, and restoration phases; and shall specify qualifications of specialists responsible for invasive plant monitoring and identification. It must include a monitoring schedule to ensure timely detection and immediate control of new invasive plant infestations to prevent further spread. Surveying and monitoring for invasive plant infestations shall occur at least two times per year, to coincide with the early detection period for early season and late season invasive plants. The monitoring section shall also describe methods for post-eradication monitoring to evaluate success of control efforts and any need for follow-up control.

**Control.** The IPMP must specify manual and chemical invasive plant control methods to be employed. The IPMP shall include only invasive plant control measures with a demonstrated record of success for target invasive plants, based on the best available information. The plan shall describe proposed methods for promptly scheduling and implementing control activity when any project-related invasive plant infestation is located (e.g., located on a project disturbance site), to ensure effective and timely invasive plant

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| | control. Invasive plant infestations must be controlled or eradicated as soon as possible upon discovery, and before they go to seed, or when appropriate with the goal to prevent further spread. All proposed invasive plant control methods must minimize disturbance to native vegetation, limit ingress and egress to defined routes, and avoid damage to any environmentally sensitive areas (ESAs) identified within or adjacent to the ROW. New infestations by invasive plants of concern will be treated at a minimum of once annually until eradication, suppression, or containment goals are met. Invasive plant occurrences can be considered eradicated when no new seedlings or resprouts are observed for three consecutive years, or a single season where new seedlings or resprouts are observed in reference populations but not at the control site. Invasive plant control efforts may cease when eradication is complete.<br>Manual control shall specify well-timed removal of invasive plants or their seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the relevant County Agricultural Commissioners, if such guidelines are available.<br>The focus of weed abatement will be manual control. Chemical controls will be avoided. If chemical controls are indicated for specific invasive species, the following guidelines shall be followed.<br>The chemical control section must include specific and detailed plans for any herbicide use. It must indicate where herbicides will be used, which herbicides will be used, and specify techniques to be used to avoid drift or residual toxicity to native vegetation or special-status plants, consistent with the National Invasive Species Management Plan (NISC, 2008). All herbicide applications will follow U.S. Environmental Protection Agency label instructions and will be in accordance with federal, state, and local laws and regulations. Only state-approved herbicides may be used. Herbicide treatment will be implemented by a Licensed Qualified Applicator. Herbicides shall be applied in accordance with product labels and applicator licenses. Herbicides shall not be applied during or within 24 hours of high confidence predicted rain. Only water-safe herbicides shall be used in riparian areas or within channels (engineered or not) where they could run off into downstream areas. Herbicides shall not be applied in high wind conditions.<br>**Reporting schedule and contents.** The IPMP shall specify reporting schedule and contents of each report. |
| CUL-2 | **Avoid Environmentally Sensitive Areas (ESA).** SCE will perform cultural resource surveys for any portion of the proposed project APE/API not yet surveyed (e.g., new or modified staging areas, pull sites, or other work areas). Cultural resources discovered during surveys will be subject to APM CUL-1 (Develop CRMP). Where operationally feasible, all NRHP- and CRHR-eligible resources will be protected from direct project impacts by project redesign (i.e., relocation of the line, ancillary facilities, or temporary facilities or work areas). In addition, all historic properties/historical resources will be avoided by all project construction, operation and maintenance, and restoration activities, where feasible. Avoidance measures will include, but not be limited to, fencing off ESAs for the duration of the proposed project or as outlined in the CRMP. |
| CUL-3 | **Conduct Construction Monitoring.** Archaeological monitoring will occur as outlined in the CRMP. Archaeological monitoring will be conducted by a qualified archaeologist familiar with the types of historic and prehistoric resources that could occur within the project areas. The qualifications of the principal archaeologist and monitors will be approved by the CPUC. Monitoring reports will be submitted to the CPUC on a monthly basis. A Tribal Participant may be required at culturally sensitive locations in consultation with the CPUC and/or as outlined in the CRMP. |

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| CUL-4 | **Properly Treat Human Remains.** SCE will follow all federal and state laws, statutes, and regulations that govern the treatment of human remains. All work in the vicinity of a find will cease within a 200-foot radius of the remains, the area will be protected to ensure that no additional disturbance occurs. Should inadvertent discovery of human remains be made on federal lands, the federal agency and county coroner (California Health and Safety Code 7050.5(b)) will be notified immediately. If the remains are determined to be Native American or if Native American cultural items pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA) are uncovered, the remains will be treated in accordance with the provisions of NAGPRA (43 CFR 10) and the Archaeological Resources Protection Act (43 CFR 7). SCE will assist and support the federal agency, as appropriate, in all required NAGPRA and Section 106 actions, government to-government and consultations with Native Americans, agencies, and consulting parties as requested by the federal agency.<br><br>If the remains are not on federal land, the county coroner and CPUC will be notified immediately and the remains will be treated in accordance with Health and Safety Code Section 7050.5, CEQA Section 15064.5(e), and Public Resources Code Section 5097.98. If the county coroner identifies the remains are Native American, they will notify the California Native American Heritage Commission (NAHC) within 24 hours. If the remains are not believed to be Native American, the appropriate local law enforcement agency will be notified. The NAHC will immediately notify the person or tribe it believes to be the most likely descendant (MLD) of the remains, and the MLD has 48 hours to make recommendations to the landowner or representative for the respectful treatment or disposition of the human remains and any associated grave goods. If the MLD does not make recommendations within 48 hours, the remains will be reinterred in the location they were discovered, and the area of the property will be secured from further disturbance. If there are disputes between the landowner and the MLD, the NAHC will mediate the dispute and attempt to find a solution. If the mediation fails to provide measures acceptable to the landowner, the landowner or their representative will reinter the remains and associated grave goods and funerary objects in an area of the property secure from further disturbance. The location of any reburial of Native American human remains will not be disclosed to the public and will not be governed by public disclosure requirements of the California Public Records Act, Cal. Govt. Code § 6250 et seq., unless otherwise required by law.<br><br>SCE will assist and support the CPUC and NAHC, as appropriate. |
| CUL-5 | **Cultural Resources Awareness Worker Training.** Prior to initiating construction, all construction personnel will be trained by a qualified archaeologist regarding the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features) and paleontological resources (i.e., fossils), and protection of these resources during construction. Training will also inform all construction personnel of the procedures to be followed upon the discovery of cultural materials. All personnel will be instructed that unauthorized removal or collection of artifacts is a violation of federal and state laws. Any excavation contract (or contracts for other activities that may have subsurface soil impacts) will include clauses that require construction personnel to attend a Worker's Environmental Awareness Training Program (WEAP). The WEAP will include the project's potential for the post-discovery review of archaeological deposits, how to operate adjacent to and avoid all ESAs, and procedures to treat post-discovery reviews. |
| HAZ-1 | **Prepare a Hazardous Materials Management Plan.** SCE will prepare and implement a Hazardous Materials Management Plan (HMMP)/Hazardous Materials Business Plan (HMBP) during project construction. The plan will outline proper hazardous materials |

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| | handling, use, storage and disposal requirements, as well as hazardous waste management procedures. This plan will be developed to ensure that all hazardous materials and wastes will be handled and disposed of according to applicable rules and regulations.<br>The HMMP will address the types of hazardous materials to be used during the project, hazardous materials storage, employee training requirements, hazard recognition, fire safety, first aid/emergency medical procedures, hazardous materials release containment/control procedures, hazard communication training, PPE training, and release reporting requirements. It will also include fueling and maintenance procedures for helicopters and construction equipment.<br>If on site refueling is necessary, BMPs shall be implemented in accordance with the project SWPPP. Refueling stations and fuel tanks will be located, maintained, and operated during construction in accordance with applicable laws and regulations pertaining to hazardous materials. If more than 1,320 gallons of petroleum products in containers greater than 55-gallons, a SPCC plan must be created prior to products being brought on-site.<br>All construction personnel, including environmental monitors, will be made aware of local, state and federal emergency response reporting guidelines for accidental spills. |
| HAZ-2 | **Prepare a Soil Management Plan**. A Soil Management Plan will be developed and implemented for the proposed project. The Soil Management Plan will provide guidance for the proper handling, on-site management, and disposal of impacted soil that may be encountered during construction activities. The Soil Management Plan will direct that during grading or excavation work, the construction contractor shall observe the exposed soil for visual evidence of contamination. If visual contamination indicators are observed during construction, potentially contaminated soil will be segregated, sampled, and tested to determine appropriate treatment and disposal options. Work in the area of the potentially contaminated soil will be stopped until appropriate measures are determined based on the testing results and are taken to protect human health and the environment. If the soil is classified as hazardous, it will be properly managed on location and transported in accordance with the U.S. Department of Transportation regulations using a Uniform Hazardous Waste Manifest to a Class I Landfill or other appropriate soil treatment or recycling facility. If potentially-contaminated groundwater is encountered, then groundwater samples will be collected and tested to determine appropriate treatment and disposal. Hazardous materials will be transported and disposed of in accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public. |
| HAZ-3 | **Prepare and Implement a Project-Specific Fire Management Plan.** A Fire Prevention and Emergency Response Plan will be developed to ensure the health and safety of construction workers, SCE personnel, and the public during Project construction. The Plan shall cover:<br>• The purpose and applicability of the plan<br>• Responsibilities and duties<br>• Project areas where the plan applies<br>• Procedures for incorporating Red Flag Warnings, Fire Potential Index (FPI), Project Activity Level (PAL), and equivalent indicators in determining fire weather related work restrictions<br>• Procedures for fire reporting, response, prevention, and evacuation routes |

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| | • Coordination procedures with federal and local fire officials<br>• Crew training, including fire safety practices and restrictions<br>• Fire suppression and communication equipment required to be on hand during construction<br>• Method for verification that Plan protocols and requirements are being followed<br>• Post-construction fire prevention and response measures<br>The Project-specific Fire Prevention and Emergency Response Plan for construction of the project will be prepared by SCE and submitted to CPUC, CALFIRE, Inyo, Kern and San Bernardino counties, and local municipal fire agencies for review at least 30 days prior to initiation of construction. SCE will address all comments received from reviewing agencies and provide the final Fire Prevention and Emergency Response Plan to reviewing agencies for approval prior to initiating construction activities. |
| NOI-1 | **Noise Disturbance Minimization Procedures.** SCE will employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise-sensitive receptors during construction:<br>• Construction activities will be confined to daytime, weekday and weekend hours established by the applicable local jurisdiction. In the event construction is required beyond those hours, SCE will notify the appropriate local agency or agencies regarding the description of the work, location, and anticipated construction hours.<br>• Construction equipment will use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.<br>• Construction traffic and helicopter flight will be routed away from residences and schools, where feasible.<br>• Unnecessary construction vehicle use, and idling time will be minimized. If a vehicle is not required for use immediately or continuously for construction activities, its engine will be shut off. |
| PAL-1 | **Develop Paleontological Resource Mitigation and Monitoring Plan.** SCE will prepare a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) to guide all paleontological management activities during project construction. The PRMMP will be submitted to the CPUC for review and approval prior to the start of construction. The PRMMP will be prepared by a qualified paleontologist, based on Society of Vertebrate Paleontology (SVP) 2010 guidelines, and meet all regulatory requirements. The qualified paleontologist will have a Master's degree or Ph.D. in paleontology, have local paleontology knowledge, and will be familiar with paleontological procedures and techniques. The PRMMP will include, but not be limited to, the following sections:<br>1. **Paleontological Resource Monitoring and Reporting**: Detail monitoring procedures and methodologies, which will require a qualified paleontological monitor for all construction-related ground disturbance that reach approximate depths for significant paleontological resources in sediments with moderate (PFYC 3a) to very high (PFYC 5) and Unknown sensitivity. Sediments of undetermined sensitivity will be monitored on a part-time basis as outlined in the PRMMP. Sediments with very low or low sensitivity will not require monitoring. Paleontological monitors will meet standard qualifications per the SVP (2010).<br>2. **Unanticipated Discovery Protocol:** Detail procedures for halting construction, defining work stoppage zones, notifying stakeholders, and assessing the paleontological find for scientific significance. If indicators of potential microvertebrate fossils are found, screening of a test sample will be carried out as outlined in SVP 2010. |

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| | 3. **Data Analysis and Reporting**: Detail methods for data recovery, analysis in a regional context, reporting of results within one year of completion of field studies, curation of all fossil specimens in an accredited museum repository approved by the CPUC, and dissemination of reports to appropriate repositories. |
| PAL-2 | **Paleontology Resources Awareness Training.** Prior to the initiation of construction, all construction personnel will be trained regarding the recognition of possible buried paleontological resources (i.e., fossils) and protection of all paleontological resources during construction. Training will inform all construction personnel of the procedures to be followed upon the discovery of paleontological materials. All personnel will be instructed that unauthorized removal or collection of fossils is a violation of Federal and State laws. Any excavation contract (or contracts for other activities that may have subsurface soil impacts) will include clauses that require construction personnel to attend a Worker's Environmental Awareness Training Program (WEAP). The WEAP will include the project's potential for inadvertently exposing buried paleontological resources, how to operate adjacent to and avoid any potential Environmentally Sensitive Area, and procedures to treat unanticipated discoveries. |
| PAL-3 | **Conduct Paleontology Resources Construction Monitoring.** Paleontological monitoring will be conducted by a qualified paleontologist familiar with the types of resources that could occur within the project area. The qualifications of the principal paleontologist and monitors will be approved by the CPUC. Monitoring reports will be submitted to the CPUC on a monthly basis. |
| TCR-2 | **Tribal Engagement Plan.** A tribal engagement plan shall be prepared, which will detail how Native American tribes will be engaged and informed throughout the proposed project. The tribal engagement plan will be included in the CRMP (APM CUL-1). |
| TRA-1 | SCE will implement traffic control measures consistent with those published in the Manual on Uniform Traffic Control Devices, as written and amended by Caltrans for the state of California (CA MUTCD) and using standard templates from the California Temporary Traffic Control Handbook (CATTCH) (California Inter-Utility Coordinating Committee 2018). These measures will be implemented as and where necessary as described in the CA MUTCD and/or CATTCH, or in ministerial permits. |
| TRA-2 | Prior to construction, SCE will consult with the FAA regarding helicopter flight plans that will take place during construction. This consultation will include, but not be limited to:<br>• Providing locations of helicopter construction staging and work areas.<br>• Establishing designated flight corridors between staging and work areas.<br>• Means to ensure external load operations avoid occupied structures and roadways.<br>• Locations of traffic control where external load operations will cross public roadways.<br>• Locations where Congested Area Plans may be required for filing with the FAA.<br>• Identifying any flight restrictions recommended/required by the FAA.<br>• The results of this coordination will be provided to the CPUC. |
| TRA-3 | Where the proposed project work area encroaches upon a public right-of-way and reduces the existing pedestrian path of travel to less than 48 inches wide, alternate pedestrian routing will be provided during construction activities. |

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## 2.6 Electromagnetic Fields and California Public Utilities Commission EMF Analysis/Mitigation Requirements

The CPUC does not consider electromagnetic fields (EMFs) to be an environmental issue in the context of the California Environmental Quality Act (CEQA) because (1) no agreement exists among scientists that EMF creates a potential health risk, and (2) CEQA does not define or adopt standards for defining any potential risk from EMF.

### 2.6.1 California Public Utilities Commission Electromagnetic Fields Guidelines

In 1991, the CPUC initiated an investigation into electric and magnetic fields associated with electric power facilities. This investigation explored the approach to potential mitigation measures for reducing public health impacts and possible development of policies, procedures, or regulations.

The CPUC has implemented a decision (D.93-11-013) that requires for utilities to use "low-cost or no-cost" mitigation measures for facilities requiring certification under GO 131-D.4. This decision directs utilities to use a 4 percent benchmark on the low-cost mitigation. This decision also implemented a number of EMF measurement, research, and education programs. The CPUC did not adopt any specific numerical limits or regulation on EMF levels related to electric power facilities.

In D.93-11-013, the CPUC addressed mitigation of EMF of utility facilities and implemented the following recommendations:

- No-cost and low-cost steps to reduce EMF levels
- Workshops to develop EMF design guidelines
- Uniform residential and workplace programs
- Stakeholder and public involvement
- A 4-year education program
- A 4-year non-experimental and administrative research program
- An authorization of federal experimental research, conducted under the National Energy Policy Act of 1992

The CPUC issued D.06-01-042 on January 26, 2006, affirming the low cost/no-cost policy to mitigate EMF exposure from new and upgraded utility power line, transmission line, and substation projects. This decision also adopted rules and policies to improve utility design guidelines for reducing EMF. The CPUC stated, "at this time we are unable to determine whether there is a significant scientifically verifiable relationship between EMF exposure and negative health consequences." At this time, the CPUC has not implemented a general requirement that utilities include non-routine mitigation measures or other mitigation measures that are based on numeric values of EMF exposure, and it has not adopted any specific limits or regulation on EMF levels related to electric power facilities. Measures to mitigate EMF may be determined on a project-by-project basis by the CPUC.

Recognizing that a great deal of public interest and concern exist regarding potential health effects from exposure to EMFs from power lines, additional information regarding EMF associated with the electric utility facilities and potential EMF resulting from the Proposed Project is provided in Appendix C. EMF information is presented for the benefit of the public and decision-makers but is not considered within the context of CEQA.

Other concerns related to power line[3] fields include nuisance (corona and audible noise; radio, television, and electronic equipment interference) and potential health risk impacts (induced currents and shock hazards, and effects on cardiac pacemakers). Not all of these concerns are CEQA considerations.

[3] The term "power line" in this section refers generally to electric lines of all voltage classes operating in SCE's electric system. However, CPUC GO 131-D distinguishes between transmission lines ("designed to operate at or above 200 kilovolts [kV]"), power lines ("designed to operate between 50 and 200 kV"), and distribution lines ("designed to operate under 50 kV").