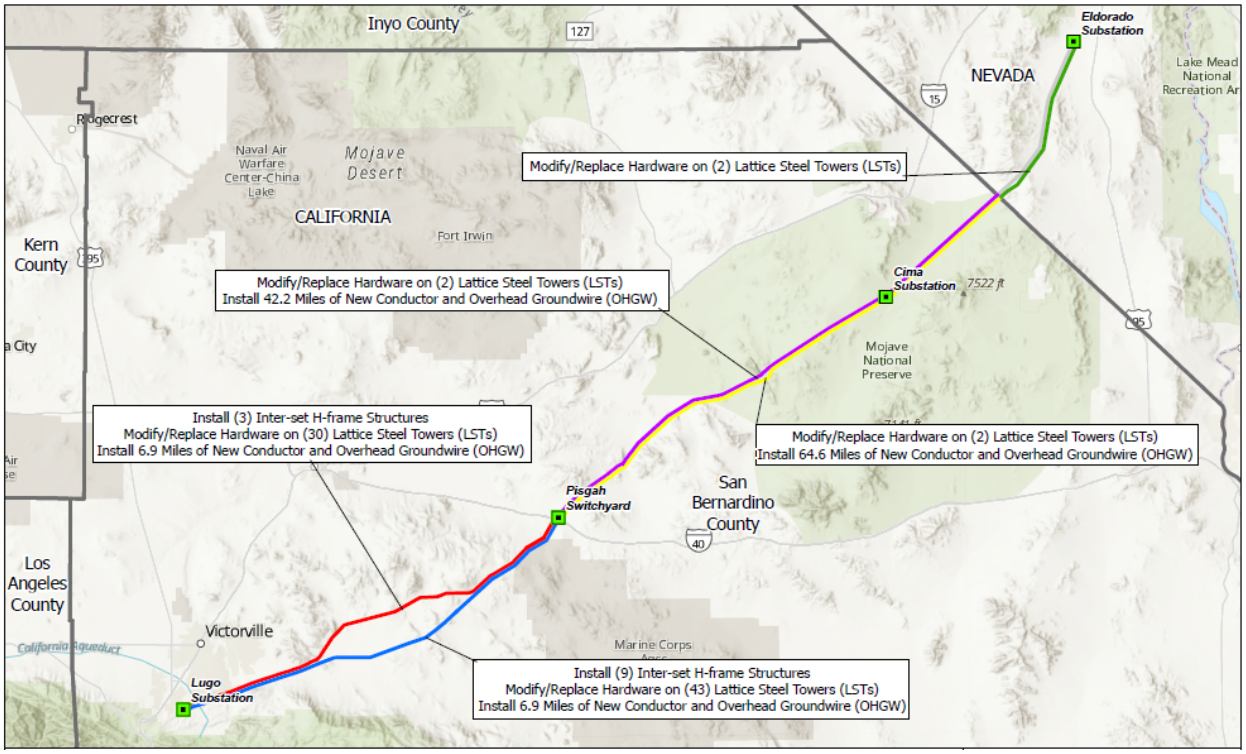

Proponent's Environmental Assessment for Southern California Edison Company's Eldorado-Pisgah-Lugo 220 kV Project

April 2023

The Eldorado-Pisgah-Lugo 220 kV Project located in San Bernardino County, California and Clark County, Nevada, involves the installation of new inter-set structures, modification of hardware on existing structures, installation of new conductor and overhead groundwire, and modification of equipment at an existing substation and a switchyard.

Application A.23-XX-XX to the California Public Utilities Commission

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TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

Required PEA Appendices and Supporting Materials*

Appendix A	Detailed Maps and Design Drawings
Appendix B	Emissions Calculations
Appendix C	Biological Resources Technical Reports
Appendix D	Cultural Resources Studies
Appendix E	Detailed Tribal Consultation Report
Appendix F	Agency Consultation and Public Outreach Report and Records of Correspondence
Appendix G	Fire Prevention and Emergency Response Plan
Appendix H	Ambient Noise Survey
Appendix I	Visual Resources Technical Report
Appendix J	Paleontological Resources Technical Report
Appendix K	Vehicle Miles Traveled Calculations
Appendix L	Weather Data
Appendix M	Hazardous Materials and Waste Management Plan
Appendix N	Soil Management Plan
Appendix O	Helicopter Use and Safety Plan
Appendix P	Fugitive Dust Plan
Appendix Q	Wildfire Mitigation Plan
Appendix R	Burrowing Owl Management and Passive Relocation Plan
Appendix S	Nesting Bird Management Plan
Appendix T	Habitat Restoration Plan
Appendix U	Invasive Plant Management Plan
Appendix V	FAA Notice and Criteria Tool Results
Appendix W	300' List

* Note: SCE has provided those appendices and supporting materials identified as 'Required' in the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*; these appendices are presented in this PEA in the same order as presented in the *Guidelines*. Appendices H through V to this PEA contain supporting materials as referenced in this PEA document.

1 Executive Summary

This Chapter provides an Executive Summary for Southern California Edison Company's (SCE) proposed Eldorado-Pisgah-Lugo 220 kV Project (EPL Project).

1.1 EPL Project Summary

The EPL Project proposes to perform work along the existing Lugo-Pisgah No. 1 220 kV circuit, the existing Lugo-Pisgah No. 2 220 kV circuit, the existing Cima-Eldorado-Pisgah No. 1 220 kV circuit, the existing Cima-Eldorado-Pisgah No. 2 220 kV circuit, and at the Pisgah Switchyard and Cima Substation.[1] The sections below provide a summary of the purpose, objective, and proposed activities.

1.1.1 Purpose and Objective

The design of electric power lines in California is governed by the California Public Utility Commission's (CPUC's) General Order (GO) 95, Rules For Overhead Electric Line Construction. The purpose of the Rules contained within GO 95 is to formulate, for the State of California, requirements for overhead line design, construction, and maintenance, the application of which would ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead lines and to the public in general. In Nevada, the design of electric lines is governed by the National Electrical Safety Code (NESC).

The EPL Project's primary purpose is to comply with GO 95 and NESC standards; a secondary purpose is to maintain reliable service to customers served by the subject lines, substations, and a switchyard.

As described in Section 2.1.2 of this document, compliance would be attained through the remediation of discrepancies along the existing 220 kV transmission lines.[2] The remediation of the discrepancies is designed to comply with standards contained in the CPUC's GO 95—specifically the standards contained in Rule 37, Minimum Clearances of Wires above Railroads, Thoroughfares, Buildings, Etc., Table 1; Rule 38, Minimum Clearances of Wires from Other Wires, Table 2; and Rule 39, Minimum Clearance of Wires from Signs, Table 2-A—and with NESC Section 23 standards. Remediation of the discrepancies will also bring the lines into operational compliance with SCE's published facility rating methodology, which requires a review of actual field conditions as recommended by the North American Electric Reliability Corporation (NERC).[3] Remediating the identified discrepancies will also comply with applicable NERC reliability standards: the work will be completed as detailed in the mitigation plan filed in 2007 and as amended by SCE and accepted by the Western Electricity Coordinating Council (WECC).

1.1.2 Summary of Activities

To remediate the identified clearance discrepancies, SCE proposes to (1) reconductor portions of the transmission lines, (2) install inter-set structures and replace the hardware on adjacent structures, and (3) replace the existing insulator assemblies with shorter assemblies on some other structures.[4]

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1 The term 'circuit' and 'transmission line' are used interchangeably in this document.

2 An individual instance of non-compliance with CPUC GO 95 or NESC Section 23 standards is referred to as a discrepancy. Discrepancies are defined as potential clearance problems between an energized conductor and its surroundings, such as the structure, another energized conductor on the same structure, a different line, or the ground, among others.

3 The year 2008 line ratings for the transmission circuits included under the EPL Project are 289 mega volt ampere (MVA) (725 A).

4 Ancillary activities that are not directly-related to the remediation of discrepancies, but that are necessary to facilitate the remediation of discrepancies, including access road rehabilitation and minor work at substations, will also be performed.

Where SCE proposes to reconductor portions of the existing transmission lines, existing conductor and hardware would be removed and new conductor and hardware would be installed. The portions of the existing transmission lines where SCE proposes reconductoring are generally characterized by a large number of discrepancies.

Where SCE proposes to install an inter-set structure, a new steel pole H-frame will be installed in the span between two existing structures, and the insulators and hardware on the adjacent structures may be replaced or modified to accommodate the new inter-set structure. The portions of the existing transmission lines where SCE proposes to install inter-set structures are characterized by having a few discrepancies.

Where SCE proposes to install shorter insulator assemblies on existing structures, SCE would remove existing insulator assemblies and associated hardware, and install shorter insulator assemblies and associated hardware. The portion of the existing transmission lines where SCE proposes to install shorter insulator assemblies are characterized by having small discrepancies that can be remediated through this approach.

This work will be performed in discrete locations along the existing 220 kV transmission lines included in the EPL Project. The locations where specific work would occur are detailed in the sections below and shown in Figure 3.1-1.

1.1.2.1 Segment 1

Segment 1 is located between the existing Lugo Substation (adjacent to the City of Hesperia) and the existing Pisgah Switchyard. In this Segment portions of the Lugo-Pisgah No. 1 220 kV circuit will be reconductored, inter-set structures will be installed, and shorter insulator assemblies will be installed. This work is detailed in Section 3.3.4 of this document.

1.1.2.2 Segment 2

Segment 2 is located between the existing Lugo Substation (adjacent to the City of Hesperia) and the existing Pisgah Switchyard. In this Segment portions of the Lugo-Pisgah No. 2 220 kV circuit will be reconductored, inter-set structures will be installed, and shorter insulator assemblies will be installed. This work is detailed in Section 3.3.4 of this document.

1.1.2.3 Segment 3

Segment 3 is located between the existing Pisgah Switchyard and the California/Nevada stateline. In this Segment portions of the Cima-Eldorado-Pisgah No. 1 220 kV circuit will be reconductored and shorter insulator assemblies will be installed. This work is detailed in Section 3.3.4 of this document.

1.1.2.4 Segment 4

Segment 4 is located between the existing Pisgah Switchyard and the California/Nevada stateline. In this Segment portions of the Cima-Eldorado-Pisgah No. 2 220 kV circuit will be reconductored and shorter insulator assemblies will be installed. This work is detailed in Section 3.3.4 of this document.

1.1.2.5 Segment 5

Segment 5 is located between the California/Nevada state line and the existing Eldorado Substation. This Segment contains portions of the Cima-Eldorado-Pisgah No. 1 220 kV circuit. No work will occur in this Segment.

1.1.2.6 Segment 6

Segment 6 is located between the California/Nevada state line and the existing Eldorado Substation. In this Segment portions of the Cima-Eldorado-Pisgah No. 2 220 kV circuit will be reconductored and shorter insulator assemblies will be installed. This work is detailed in Section 3.3.4 of this document.

1.1.2.7 Existing Substations

Under the EPL Project, work at the Cima Substation will consist of replacing the tap attachments within the substation. Work at the Pisgah Switchyard will consist of replacing dead-end hardware on rack attachments. This work is described in Section 3.3.8 of this document.

1.2 Land Ownership and Right-of-Way Requirements

Existing and proposed land ownership and rights-of-way (ROWs) are addressed in detail in Section 3.4. The EPL Project would be constructed and operated on federal lands administered by the United States Bureau of Land Management (BLM); lands within the National Park Service's Mojave National Preserve (NPS MNP); California state lands; lands managed by the California Department of Transportation (Caltrans; along state highways) and county and cities (franchise); city-owned lands; and private lands. SCE possesses rights over portions of these lands but will need to acquire additional land rights prior to constructing the EPL Project.

1.3 Areas of Controversy

No areas of controversy or major issues related to the EPL Project have been communicated to SCE by representatives from San Bernardino County, the City of Hesperia, or others contacted by SCE as described in Section 2.2 of this document. SCE anticipates possible areas of controversy may include: the closure of lanes on some public roads; the potential to affect biological resources; the potential to affect cultural resources; and disruptions to the public from construction.

1.4 Summary of Impacts

The analysis of environmental impacts is based upon the environmental setting applicable to each resource/issue and the manner in which the construction, operation, and maintenance of the EPL Project or alternatives would affect the environmental setting and related resource conditions. In accordance with California Environmental Quality Act (CEQA) requirements and guidelines, the impact assessment methodology also considers the following three topics: (1) the regulatory setting and evaluation of whether the proposed project or alternatives would be consistent with adopted federal, state, and local regulations and guidelines; (2) growth-inducing impacts; and (3) cumulative impacts. Regulatory compliance issues are discussed in each resource/issue area section.

This Proponent's Environmental Assessment (PEA) document is organized according to the following major issue area categories:

- Aesthetics
- Agriculture and forestry resources
- Air quality
- Biological resources
- Cultural resources
- Energy
- Geology and soils
- Greenhouse gas (GHG) emissions
- Hazards and hazardous materials
- Hydrology and water quality
- Land use and planning
- Mineral resources
- Noise
- Population and housing
- Public services
- Recreation
- Transportation
- Tribal cultural resources
- Utilities and service systems
- Wildfire

To provide for a comprehensive and systematic evaluation of potential environmental consequences to the resource/issue areas, the environmental impact assessments for the EPL Project and alternatives are based upon a classification system with the following associated definitions:

- Class I: Significant impact; cannot be mitigated to a level that is not significant
- Class II: Significant impact; can be mitigated to a level that is less than significant
- Class III: Less than significant; no mitigation required
- Class IV: Beneficial impact
- No Impact (NI): No impact identified
- No Determination (ND): No determination made in PEA document

The EPL Project's Project Description contains a number of standard measures employed by SCE projects that are implemented to ensure compliance with applicable federal, state, and local laws and regulations. Further, SCE will implement CPUC-identified Draft Environmental Measures as necessary and as applicable. These measures are all considered in the impact assessment as components of the EPL Project.

1.4.1 Impact Summary Table for the EPL Project

Table ES-1 provides a summary of impacts and classification of impacts. As shown in Table ES-1, for those criterion for which an impact analysis has been performed to date, the EPL Project would not result in any Class I impact. The impact analysis presented in Chapter 5 of this document indicates that, with implementation of the standard measures included in the Project Description, the remainder of the potential environmental impacts associated with the EPL Project would be Class III. No potentially significant and unavoidable impacts have been identified for the EPL Project.

Table ES-1. Summary of Impacts for the EPL Project

Impact	Impact Class
Impact AES-1: Have a substantial adverse effect on a scenic vista	III
Impact AES-2: Substantially damage scenic resources within a State Scenic Highway, including, but not limited to: trees, rock outcroppings, and historic buildings	III
Impact AES-3: In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (Public views are those that are experienced from publicly accessible vantage point)	III
Impact AES-4: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area	III
Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, to nonagricultural use	NI
Impact AG-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract	NI
Impact AG-3: Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))	NI
Impact AG-4: Result in the loss of forest land or conversion of forest land to non-forest use	NI
Impact AG-5: Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use	NI
Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan	NI
Impact AIR-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard	III
Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations	III
Impact AIR-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people	III

Table ES-1. Summary of Impacts for the EPL Project

Impact	Impact Class
Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the CDFW or USFWS	III
Impact BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS	III
Impact BIO-3: Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means	III
Impact BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites	III
Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	NI
Impact BIO-6: Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan.	NI
Impact BIO-7: Would the project create a substantial collision or electrocution risk for birds or bats?	III
Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15065.5	NI
Impact CUL-2: Cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15065.5	III
Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries	III
Impact EN-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation	III
Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	NI
Impact EN-3: Add capacity for the purpose of serving a nonrenewable energy resource	NI
Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, or injury, or death involving: rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (Refer to Division of Mines and Geology Special Publication 42.); strong seismic ground shaking; seismic-related ground failure, including liquefaction; and landslides	III
Impact GEO-2: Result in substantial soil erosion or the loss of topsoil	III
Impact GEO-3: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse	III
Impact GEO-4: Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property	NI
Impact GEO-5: Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water	NI
Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	III
Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment	III
Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions	NI
Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	III
Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment	III
Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school	NI

Table ES-1. Summary of Impacts for the EPL Project

Impact	Impact Class
Impact HAZ-4: Be located on a site that is included on a list of hazardous material sites, compiled pursuant to Government Code Section 65962.5, and as a result would create a significant hazard to the public or the environment	NI
Impact HAZ-5: For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the project would result in a safety hazard or excessive noise for people residing or working in the project area	NI
Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	III
Impact HAZ-7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires	III
Impact HAZ-8: Create a significant hazard to air traffic from the installation of new power lines and structure	NI
Impact HAZ-9: Create a significant hazard to the public or environment through the transport of heavy materials using helicopters	NI
Impact HAZ-10: Expose people to a significant risk of injury or death involving unexploded ordnance	NI
Impact HAZ-11: Expose workers or the public to excessive shock hazards	NI
Impact HYDR-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality	III
Impact HYDR-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin	III
Impact HYDR-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: Result in substantial erosion or siltation on site or off site; Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; Impede or redirect flood flows	III
Impact HYDR-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation	III
Impact HYDR-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan	NI
Impact LU-1: Physically divide an established community	NI
Impact LU-2: Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect	NI
Impact MIN-1: Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state	NI
Impact MIN-2: Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan	NI
Impact NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies	III
Impact NOI-2: Generation of excessive groundborne vibration or groundborne noise levels	NI
Impact NOI-3: Exposure of people residing or working in the Project area to excessive noise levels for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport	NI
Impact POP-1: Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	NI
Impact POP-2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	NI
Impact PUB-1: Result in substantial adverse physical impacts associated with the provision of new or	NI

Table ES-1. Summary of Impacts for the EPL Project

Impact	Impact Class
physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection; Police protection; Schools; Parks; Other public facilities?	
Impact REC-1: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated	NI
Impact REC-2: Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment	NI
Impact REC-3: Reduce or prevent access to a designated recreation facility or area	III
Impact REC-4: Substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas	NI
Impact REC-5: Damage recreational trails or facilities	NI
Impact TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities	III
Impact TRA-2: Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b) (vehicle miles traveled)	NI
Impact TRA-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	NI
Impact TRA-4: Result in inadequate emergency access.	III
Impact TRA-5: Create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations	III
Impact TRA-6: Interfere with walking or bicycling accessibility	III
Impact TRA-7: Substantially delay public transit	NI
Impact TCR-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	ND
Impact UTIL-1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects	NI
Impact UTIL-2: Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years	NI
Impact UTIL-3: Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments	NI
Impact UTIL-4: Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals	NI
Impact UTIL-5: Comply with federal, state, and local management and reduction statutes and regulations related to solid waste	NI
Impact UTIL-6: Increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts	NI
Impact WF-1: Substantially impair an adopted emergency response/evacuation plan.	III
Impact WF-2: Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire	NI

Table ES-1. Summary of Impacts for the EPL Project

Impact	Impact Class
Impact WF-3: Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment	NI
Impact WF-4: Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes	III

1.5 Summary of Alternatives

The EPL Project has been subjected to a multi-year engineering design process, during which engineering solutions were identified that would meet the EPL Project objective. These engineering solutions were subjected to an environmental screening process that allowed a comparative analysis of potential impacts under the discrete suite of CEQA impact criteria that are or may be typically impacted by a transmission line construction project.

The multi-year engineering design process has culminated in the proposed EPL Project. The location of the inter-set structures, and in some instances the orientation and configuration of construction work areas, have been selected to avoid sensitive resources and to avoid potential land use conflicts. Therefore, the EPL Project, as described in Chapter 3, represents the optimized design—it meets the identified objective, is feasible to construct, and presents the least-intensive scope of work and the smallest physical footprint of the solutions.

The vast majority of the work under the EPL Project will be performed within an existing transmission line corridor and will utilize existing disturbed areas and access roads, thereby minimizing impacts to undisturbed sensitive environmental resources. In addition, the off-alignment staging yards have been preferentially sited on previously- or currently-disturbed areas, or in areas with degraded habitat if previously- or currently-disturbed areas are not available in the vicinity.

The proposed EPL Project avoids and/or minimizes potential environmental impacts: as presented in Chapter 5, the EPL Project would not result in a potentially significant impact for any CEQA criterion. Because there are no significant impacts associated with the proposed EPL Project, none of the previously evaluated solutions that met project objectives would avoid or substantially lessen a significant impact of the project; regardless, a single alternative was identified and carried through for analysis in Chapter 6.

1.6 Pre-filing Consultation and Public Outreach Summary

SCE has periodically engaged in pre-filing consultation and public outreach activities related to the EPL Project since early 2018. To date, SCE has briefed public land managers (BLM and NPS), local jurisdictions crossed by or near the EPL Project alignment (San Bernardino County and the City of Hesperia) and the CPUC. Further, a mailer was sent to local residents and local government officials in 2022.

Details regarding this pre-filing consultation with agencies and other public outreach efforts are presented in Section 2.2.1. Pre-filing consultation and public outreach did not result in the generation of any significant outcomes, and thus none were incorporated into the EPL Project.

1.7 Conclusions

The primary conclusions resulting from the environmental impact analyses presented in Chapter 5 and Chapter 6 of this document are as follows:

- The EPL Project, as described in Chapter 3, meets the objective identified for the EPL Project.
- The EPL Project, as described in Chapter 3, presents no potentially significant environmental impacts.
- The EPL Project, as described in Chapter 3, presents fewer impacts and impacts of a lower magnitude than presented by any of the other potential engineering solutions.

1.8 Remaining Issues

Except as described above, no major environmental, engineering, or real properties-related issues are expected.

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2 Introduction

This Chapter introduces the EPL Project and identifies its purpose and need and its objectives. This information is required by the CPUC's PEA Guidelines (*Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*, dated November 2019) and the CEQA (Pub. Resources Code § 21000 *et seq.*) and its implementing Guidelines (14 Cal. Code Regs. § 15000 *et seq*). Additional information regarding the EPL Project's purpose and need is provided in SCE's application to the CPUC in accordance with GO 131-D.

This section also provides a roadmap to the organization of this PEA document.

2.1 Project Background

SCE is a public utility that provides electric service to a population of approximately 15 million people within a 50,000-square-mile service area that encompasses 180 cities throughout Southern California. SCE owns and operates approximately 5,000 miles of bulk power facilities (500 kV and 220 kV transmission lines) and 1,500 miles of subtransmission (55 kV to 115 kV) lines. SCE also owns and operates 1,200 miles of radial 115 kV subtransmission lines.

The design of electric lines in California is governed by GO 95, Rules For Overhead Electric Line Construction. The purpose of the Rules contained within GO 95 is to formulate, for the State of California, requirements for overhead line design, construction, and maintenance, the application of which would ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead lines and to the public in general.

GO 95 Rules 37 through 39 specify minimum vertical and horizontal clearances that must be maintained between an electric power line (referred to as a conductor) and other conductors, or between a conductor and the ground, buildings, and a variety of other objects. Conductor clearance in the field (e.g., between a conductor and the ground) is not a static value—it changes depending upon the operational characteristics of the line. As greater amounts of electricity are transmitted by a conductor, the conductor material heats up and expands, resulting in greater sag (and a lesser clearance) in a given span. The design of electric lines in Nevada is governed by the standards contained in Section 23 of the NESC.

In 2006, SCE identified that the clearances along some of its circuits were not compliant with the clearances required by GO 95 or by Section 23 of the NESC due to the installation of additional infrastructure under SCE lines over time; survey, engineering, and construction inaccuracies; the growth of vegetation; and changes in topography. This information was communicated to both the CPUC and the California Independent System Operator (CAISO). SCE then initiated a Light Detection and Ranging (LiDAR) study and engineering modeling work to confirm these discrepancies.[6,7] The discrepancies were reported to the NERC by SCE as the GO 95 discrepancies result in reduction to line ratings, and a mitigation plan to address these discrepancies was filed with and accepted by the WECC.

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6 An individual instance of non-compliance with a GO 95 or NESC Section 23 standard is referred to as a discrepancy. Discrepancies are defined as potential clearance problems between an energized conductor and its surroundings, such as the structure, another energized conductor on the same structure, a different line, or the ground, among others.

7 Light Detection and Ranging (LiDAR) technology uses ultraviolet or near infrared light to image objects and map physical features. SCE uses aircraft equipped with LiDAR equipment to identify locations throughout SCE's service territory that do not meet the minimum required clearances for overhead lines established in GO 95 or in the NESC.

The collective effort to identify and remediate these discrepancies across SCE's system is referred to as the Transmission Line Rating Remediation (TLRR) effort. Based on the LiDAR and engineering modeling work, SCE's TLRR effort is developing a remediation plan for each discrepancy to ensure compliance with GO 95 and NESC Section 23 standards.

The EPL Project is one of several projects within SCE's larger TLRR effort. The discrepancies identified on the transmission lines included under the EPL Project were identified through LiDAR and engineering modeling work performed under the TLRR effort.

2.1.1 Purpose and Need

2.1.1.1 Project Need

The EPL Project is needed to comply with GO 95 and NESC Section 23 standards; compliance will be obtained through the remediation of discrepancies identified on the existing transmission lines.

2.1.1.2 Localities Served

The transmission lines included in the EPL Project would continue to serve the localities that they currently serve; there would be no change to either the local or regional utility system as a result of the EPL Project.

2.1.1.3 California Independent System Operator Consideration

The EPL Project was not identified by the CAISO because the remediation of discrepancies does not fall under its purview. The need for the EPL Project was identified by SCE.

2.1.2 Project Objectives

2.1.2.1 Basic Project Objective

The EPL Project is being proposed to comply with GO 95 and NESC Section 23 standards while maintaining the existing CAISO rating for the affected circuits.

The purpose of the Rules contained within GO 95 is to formulate, for the State of California, requirements for overhead line design, construction, and maintenance, the application of which will ensure adequate service and secure safety to persons engaged in the construction, maintenance, operation or use of overhead lines and to the public in general.

The basic objective of the EPL Project is to remediate identified discrepancies in order to ensure compliance with the standards contained in: GO 95 Rule 37, Minimum Clearances of Wires above Railroads, Thoroughfares, Buildings, Etc., Table 1; GO 95 Rule 38, Minimum Clearances of Wires from Other Wires, Table 2; GO 95 Rule 39, Minimum Clearance of Wires from Signs, Table 2-A; and NESC Section 23 standards. Remediation of the discrepancies will also bring the lines into operational compliance with SCE's published facility rating methodology, which requires a review of actual field conditions as recommended by NERC. Remediating the identified discrepancies will also comply with applicable NERC reliability standards: the work will be completed as detailed in the mitigation plan filed in 2007 and as amended by SCE and accepted by the WECC.

2.1.2.1.1 Secondary Project Objective

Realization of the basic objective will also meet the secondary objective of the EPL Project, which is to continue to provide safe and reliable electrical service.

2.1.2.2 How Project Implementation Will Achieve the Basic Project Objectives

Implementation of the EPL Project will achieve the basic project objective by remediating existing discrepancies through the installation of new inter-set structures, the replacement and/or modification of insulators and other hardware on existing transmission structures, and the replacement of existing conductor with new conductor. These will be engineered and constructed to meet GO 95 and NESC Section 23 standards. Remediation of the discrepancies will also achieve the secondary objective by replacing existing conductor and overhead groundwire with new conductor and overhead groundwire.[8]

2.1.2.3 Why Attainment of the Basic Project Objectives is Necessary

Attainment of the basic project objective is necessary because SCE is required to comply with GO 95 and NESC Section 23 standards. The basic objective of the EPL Project is to remediate identified discrepancies in order to ensure compliance with the standards contained in: GO 95 Rule 37, Minimum Clearances of Wires above Railroads, Thoroughfares, Buildings, Etc., Table 1; GO 95 Rule 38, Minimum Clearances of Wires from Other Wires, Table 2; GO 95 Rule 39, Minimum Clearance of Wires from Signs, Table 2-A; and NESC Section 23 standards. Remediation of the discrepancies will also bring the lines into operational compliance with SCE's published facility rating methodology, which requires a review of actual field conditions as recommended by NERC. Remediating the identified discrepancies will also comply with applicable NERC reliability standards: the work will be completed as detailed in the mitigation plan filed in 2007 and as amended by SCE and accepted by the WECC.

2.1.3 Project Applicant

SCE is the project Applicant. SCE owns each component of the EPL Project. SCE is a public utility that provides electric service to a population of approximately 15 million people within a 50,000-square-mile service area that encompasses 180 cities throughout Southern California.

2.2 Pre-filing Consultation and Public Outreach

2.2.1 Pre-filing Consultation and Public Outreach

2.2.1.1 Description of Pre-filing Consultation and Public Outreach

The sections below describe all pre-filing consultation and public outreach that has occurred to date.

2.2.1.1.1 California Independent System Operator

SCE has not discussed the purpose or need for the EPL Project with CAISO.

2.2.1.1.2 Public Agencies with Jurisdiction over Project Areas or Resources that May Occur in the EPL Project Area

SCE plans to provide periodic updates to local jurisdictions at key milestones throughout the life of the EPL Project, such as prior to filing an application for a Certificate of Public Convenience and Necessity (CPCN), immediately after a final decision, and prior to the start of construction (assuming the EPL Project is approved).

8 Remediating the identified discrepancies would also bring the lines into compliance with the NERC Facility Rating for the lines, including NERC Standard FAC-009-1, which requires that SCE ensure that Facility Ratings used in the reliable planning and operation of the Bulk Electric System (BES) are determined based on an established methodology or methodologies. Remediating the identified discrepancies would also ensure compliance with applicable WECC reliability planning criteria; the work would be completed as detailed in the mitigation plan filed in 2007 by SCE and accepted by WECC.

2.2.1.1.3 Bureau of Land Management

SCE has met with representatives of the BLM regarding the EPL Project on a regular basis since 2017.

2.2.1.1.4 National Park Service

SCE has met with representatives of the NPS regarding the EPL Project on a regular basis since 2017.

2.2.1.1.5 California Public Utilities Commission

SCE has met with representatives of the CPUC regarding the EPL Project on a regular basis since 2016.

2.2.1.1.6 Public Utilities Commission of Nevada

The scope of work within the State of Nevada does not require the issuance of a Utility Environmental Protection Act permit under Nevada Revised Statutes 704.865(1).

2.2.1.1.7 San Bernardino County

SCE has met with representatives of San Bernardino County regarding the EPL Project on a regular basis since 2019. The county has not communicated any issues or concerns with the project as proposed.

2.2.1.1.8 City of Hesperia

SCE Local Public Affairs staff communicated with the City of Hesperia regarding the EPL Project in 2022. The city has not communicated any issues or concerns with the project as proposed.

2.2.1.1.9 Clark County

SCE Local Public Affairs staff communicated with Clark County regarding the EPL Project in 2021. The county has not communicated any issues or concerns with the project as proposed.

2.2.1.1.10 City of Boulder City

SCE Local Public Affairs staff communicated with the City of Boulder City regarding the EPL Project in 2021. The city has not communicated any issues or concerns with the project as proposed.

2.2.1.1.11 Native American Tribes Affiliated with the EPL Project Area

SCE has informed the Native American Heritage Commission regarding the EPL Project per GO 131-D.

2.2.1.1.12 Private Landowners and Homeowner Associations

SCE sent a mailer to local landowners in 2022. This mailer included a summary of the EPL Project, a figure illustrating the EPL Project alignment, and a summary of potential project activities. A copy of this mailer is provided in Appendix F to this PEA and is available at https://www.sce.com/about-us/reliability/upgrading-transmission.

2.2.1.1.13 Developers for Large Housing or Commercial Projects Near the EPL Project Area

SCE is not aware of any commercial project within two miles of the EPL Project alignment. SCE is aware of a large housing project within two miles of the EPL Project alignment; however, while entitled nearly a decade ago, this project does not appear to be moving forward.

2.2.1.1.14 Other Utility Owners and Operators

SCE has not communicated with other utility owners or operators.

2.2.1.1.15 Federal, State, and Local Fire Management Agencies

SCE has not communicated with federal, state, or local fire management agencies regarding the EPL Project.

2.2.1.2 Significant Outcomes

No significant outcomes of consultation were incorporated into the EPL Project. No areas of controversy or major issues related to the EPL Project have been communicated to SCE.

2.2.1.3 Development that Could Coincide or Conflict With Project Activities

SCE is not aware of any developments that could conflict with EPL Project activities (i.e., developments within or immediately adjacent to the existing transmission line alignments). SCE is aware of developments that could coincide, either spatially or temporally, with the EPL Project; these are addressed in Chapter 7.

2.2.2 Records of Consultation and Public Outreach

A summary of consultation is provided in Appendix F.

2.3 Environmental Review Process

2.3.1 Environmental Review Process

The EPL Project will be subject to environmental review under CEQA.

2.3.2 California Environmental Quality Act Review

2.3.2.1 CPUC as CEQA Lead Agency

Pursuant to GO 131-D and pending any revisions thereto in light of Senate Bill 529 as enacted in 2022, SCE is applying to the CPUC for a CPCN authorizing SCE to construct the EPL Project.[9] Further pursuant to GO 131-D, in order to issue a CPCN, the CPUC must take certain actions pursuant to CEQA. The CPUC will be the Lead agency under CEQA for the EPL Project.

2.3.2.2 Other State and Federal Agencies that May Have Discretionary Permitting Authority

The BLM; the NPS; the United States (U.S.) Army Corps of Engineers (USACE); the U.S. Fish and Wildlife Service (USFWS); Caltrans; the California Department of Fish and Wildlife (CDFW); the Lahontan Regional Water Quality Control Boards (RWQCB) and Colorado River RWQCB may have discretionary permitting authority over aspects of the EPL Project.

2.3.2.3 Federal, State, and Local Agencies that May Have Ministerial Permitting Authority

Caltrans, San Bernardino County, and the City of Hesperia may have ministerial permitting authority over aspects of the EPL Project in California. The City of Boulder City may have ministerial permitting authority over aspects of the EPL Project in Nevada.

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9 Senate Bill 529 would require the commission, by January 1, 2024, to update that general order to authorize each electrical corporation to use the permit-to-construct process or claim an exemption to seek approval to construct an extension, expansion, upgrade, or other modification to its existing electrical transmission facilities, as specified. See also https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220SB529

2.3.2.4 Results of Preliminary Outreach with Agencies

SCE has not been made aware of any unexpected issues that would affect the CEQA process as a result of the outreach described above in Section 2.2.1.

2.3.3 National Environmental Policy Act Review

Those portions of the EPL Project located on federal lands, those elements of the EPL Project that may result in impacts to federal-jurisdictional waters or wetlands, and those elements that may result in impacts to federally listed threatened or endangered species will be subject to review under the National Environmental Policy Act (NEPA).

2.3.4 Pre-filing California Environmental Quality Act and National Environmental Policy Act Coordination

Pre-filing coordination with CEQA and NEPA review agencies has been limited. The coordination to-date has identified that separate CEQA and NEPA processes will be engaged for the EPL Project.

2.4 Document Organization

2.4.1 PEA Organization

The EPL Project PEA document contains the following Sections, as set forth in the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*, dated November 2019, Revision 1.0.

2.4.1.1 Section 1, Executive Summary

This section includes a summary of the EPL Project, a discussion of the land ownership and ROW requirements, a presentation of the areas of controversy identified to date, a summary of potential impacts, a summary of alternatives to the EPL Project, a summary of the pre-filing consultation and public outreach performed to date, a summary of the major PEA conclusions, and a listing of remaining major issues that remain to be resolved.

2.4.1.2 Section 2, Introduction

This section includes a presentation of the purpose and need for, and objectives of, the EPL Project; identifies the Applicant; details the pre-filing consultation and public outreach activities conducted to date; outlines the environmental review process; and describes the organization of the PEA document.

2.4.1.3 Section 3, EPL Project Description

This section includes an overview of the EPL Project; a description of the existing and proposed system; a presentation of the components of the EPL Project; information related to land ownership, ROWs, and easements; a description of the construction methodologies to be employed; data regarding the construction workforce, equipment, traffic, and schedule; information on post-construction activities; a discussion of operation and maintenance-related work; decommissioning-related information; and a listing of anticipated permits and approvals.

2.4.1.4 Section 4, Description of Alternatives

This section addresses Alternatives to the EPL Project.

2.4.1.5 Section 5, Environmental Analysis

This section includes a description of the environmental setting, regulatory setting, and impact analysis for each resource area. The resource areas addressed include each environmental factor (resource area) identified in the most recent adopted version of the CEQA Guidelines Appendix G checklist and any additional relevant resource areas and impact questions that are defined in the CPUC's PEA checklist.

2.4.1.6 Section 6, Comparison of Alternatives

This addresses a comparison of Alternatives.

2.4.1.7 Section 7, Cumulative Impacts and Other CEQA Considerations

This section provides a detailed table listing of past, present, and reasonably foreseeable future projects within and surrounding the EPL Project (within a 2-mile buffer); presents a cumulative impact analysis; and provides an evaluation of potential growth-inducing impacts.

2.4.1.8 Section 8, List of Preparers

This section lists the major authors and preparers of the PEA document.

2.4.1.9 Section 9, References

This section includes a list of references cited in this PEA.

2.4.1.10 Required PEA Appendices and Supporting Materials

SCE has provided those appendices and supporting materials identified as 'Required' in the CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments*; these appendices are presented in this PEA in the same order as presented in the Guidelines. Appendices A through H to this PEA contain supporting materials as referenced in this PEA document; these Appendices are listed as 'Potentially Required Appendices and Supporting Materials' or are not identified in the *Guidelines*.

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3 Project Description

This Chapter provides a detailed description of SCE's EPL Project.

3.1 Project Overview

3.1.1 Summary of the EPL Project

The purpose of the EPL Project is to remediate discrepancies associated with existing transmission lines.[10] To remediate these discrepancies, SCE proposes to (1) reconductor portions of the transmission lines, (2) install inter-set structures and replace the hardware on adjacent structures, and (3) replace the existing hardware on some other structures. The locations where these differing discrepancy remediation approaches would be applied are presented in Figure 3.1-1 and are described in further detail in Section 3.3.

No new substations are proposed to be constructed under the EPL Project, and no existing substations would be expanded or upgraded. Work at an existing substation and at an existing switchyard under the EPL Project would be limited in scope and performed within the existing facilities.

3.1.2 Geographical Location of the EPL Project

The EPL Project would be located in unincorporated San Bernardino County and the City of Hesperia within the State of California, and in unincorporated Clark County and the City of Boulder City within the State of Nevada.

3.1.3 Overview Map

An overview map of the EPL Project location is presented in Figure 3.1-1.

3.2 Existing and Proposed System

3.2.1 Existing System

3.2.1.1 Existing Utility System

The EPL Project utility system is defined as four existing transmission lines where discrepancies have been identified, and the connected substations. The EPL Project's existing utility system comprises the following:

- Transmission Lines
  - Lugo-Pisgah No.1 220 kV Transmission Line
  - Lugo-Pisgah No.2 220 kV Transmission Line
  - Cima-Eldorado-Pisgah No.1 220 kV Transmission Line
  - Cima-Eldorado-Pisgah No.2 220 kV Transmission Line

[10] Discrepancies are defined as potential clearance problems between an energized conductor and its surroundings, such as the structure, another energized conductor on the same structure, a different line, or the ground, among others.

- Substations/Switchyard
  - Cima 220/16 kV Substation
  - Eldorado 500/220 kV Substation
  - Lugo 500/220 kV Substation
  - Pisgah 220 kV Switchyard

3.2.1.2 Users and Area Served by the Existing Utility System

The existing infrastructure provides power to communities and users served from the existing Cima and Lugo substations, and Pisgah Switchyard.

3.2.1.3 EPL Project and the Existing Local and Regional Systems

The EPL Project represents only the remediation of discrepancies along existing transmission lines; the new conductor and structures to be installed will continue to be part of the existing system but do not represent an addition to the existing system.

3.2.1.4 Schematic Diagram of the Existing System Features

Figure 3.2-1 provides a schematic diagram of the existing EPL Project-related system.

3.2.1.5 Maps and Associated Geographic Information System (GIS) Data

Maps for existing facilities that would be modified by the EPL Project are presented in Appendix A. GIS data are provided under separate electronic cover.

3.2.2 EPL Project System

3.2.2.1 EPL Project by Component

A description of the whole of the EPL Project by component is provided below in Section 3.3. The EPL Project would install new transmission inter-set structures, and would install new conductor and overhead groundwire (OHGW) to replace existing conductor and OHGW. The hardware on certain existing structures would be replaced. Except as discussed in this Chapter 3, no other upgrades or expansions to existing structures or facilities are included under the EPL Project, and there are no other interrelated activities that are part of the whole of the action.

3.2.2.2 System Features

System features that would be added, modified, or disconnected as part of the EPL Project are described in detail in Section 3.3.

3.2.2.3 Expected Capacities of the Proposed Facilities

The EPL Project is designed to remediate discrepancies and maintain the existing ratings of the transmission lines, not to increase or change the capacity of SCE's electrical system.

Compared to the capacity offered by the existing conductor, the replacement conductor that would be installed would have a higher capacity. However, the practical use of that higher capacity will be limited because (1) only a portion of the conductor is being replaced and (2) existing substation equipment will not be changed under the EPL Project. Because only a portion of the conductor is being replaced and substation equipment would not be replaced or upgraded under the EPL Project, the system-level capacity would not be changed.

3.2.2.4 Initial and Full Buildout of the Proposed Facilities

The EPL Project, as proposed, represents the full buildout of the EPL Project facilities; the project build out would not occur in separate stages.

3.2.2.5 System Tie or Loop for Reliability

The EPL Project will not create a second system tie or loop for sustainable reliability.

3.2.2.6 Users and Area Served by the Proposed Utility System

The EPL Project would not provide service to any new users or areas; the existing users and areas served by the existing system (see Section 3.2.1.2 above) would continue to be served.

3.2.2.7 Schematic Diagram of the Proposed System Features

Figure 3.2-1 provides a schematic diagram of the existing EPL Project-related system; the existing EPL Project-related system, including the naming convention of the transmission lines, would be unchanged as a result of the EPL Project.

3.2.2.8 Detailed Maps and Associated GIS Data

Maps for existing facilities that would be installed and modified by the EPL Project are presented in Appendix A. GIS data are provided under separate electronic cover.

3.2.3 System Reliability

The EPL Project will not create a second system tie or loop for reliability. The existing transmission lines and substations included under the EPL Project currently are part of the existing utility system. Because the EPL Project will only replace portions of the existing utility system, the infrastructure included under the EPL Project will continue to relate to and support the existing utility system.

3.2.4 Planning Area

No system planning area (e.g., Electrical Needs Area or Distribution Planning Area) has been defined for the EPL Project. SCE defines a system planning area when considering projects intended to address load growth in the SCE system. As the EPL Project is proposed to remediate clearance discrepancies, and is not proposed to address load growth, no system planning area has been defined or is relevant.

3.3 Project Components

The discussions below address the components of the EPL Project.

3.3.1 Preliminary Design and Engineering

3.3.1.1 Preliminary Design and Engineering

Preliminary design and engineering information for facilities proposed under the EPL Project are presented in subsequent sections: the approximate locations of new structures to be installed, existing structures on which hardware would be replaced, and conductor and OHGW to be replaced are presented in Appendix A; the dimensions of these structures are presented in Table 3.3.2; and the limits of areas that would be needed to construct the facilities included under the EPL Project are presented graphically in Appendix A and described in Section 3.5.

3.3.1.2 Preliminary Design Drawings

Appendix A provides preliminary design drawings for the new structures included as part of the EPL Project; these drawings approximate a 30 percent-complete design. The project description is based on planning level assumptions. Actual work scope would be determined following completion of final engineering, further identification of field conditions, and compliance with applicable environmental and permitting requirements.

3.3.1.3 Project Maps

Appendix A contains detailed project maps that display all facility locations and boundaries with attributes and spatial geometry that corresponds to information in the Project Description.

3.3.2 Segments, Components, and Phases

3.3.2.1 Project Segments, Components, and Phases

3.3.2.1.1 Project Segments

The EPL Project is divided into the following six segments:

- Segment 1 spans approximately 67 miles from the existing Lugo Substation to the existing Pisgah Switchyard. The existing structures in Segment 1 support the Lugo-Pisgah No.1 220 kV transmission line.
- Segment 2 spans approximately 66 miles from the existing Lugo Substation to the existing Pisgah Switchyard. The existing structures in Segment 2 support the Lugo-Pisgah No.2 220 kV transmission line.
- Segment 3 spans approximately 82 miles from the existing Pisgah Switchyard to the California-Nevada stateline. The existing structures in Segment 3 support the Cima-Eldorado-Pisgah No.1 220 kV transmission line.
- Segment 4 spans approximately 83 miles from the existing Pisgah Switchyard to the California-Nevada stateline. The existing structures in Segment 4 support the Cima-Eldorado-Pisgah No.2 220 kV transmission line.[11]
- Segment 5 spans approximately 27 miles from the California-Nevada stateline to the existing Eldorado Substation. The existing structures in Segment 5 support the Cima-Eldorado-Pisgah No.1 220 kV transmission line.
- Segment 6 spans approximately 27 miles from the California-Nevada stateline to the existing Eldorado Substation. The existing structures in Segment 6 support the Cima-Eldorado-Pisgah No.2 220 kV transmission line.

3.3.2.1.2 Project Components

The EPL Project includes the components described in greater detail in subsequent sections.

3.3.2.1.2.1 Transmission

The EPL Project would install new, and replace existing infrastructure along portions of existing 220 kV transmission lines by:

[11] Note that work proposed under the EPL Project would not occur geographically-contiguously along the entire length of these Segments.

- Installing new inter-set transmission structures and replacing or modifying the existing hardware on adjacent structures.
- Replacing the insulator assemblies on some existing structures that are not adjacent to new inter-set transmission structures.
- Removing existing conductor and installing new 609.5 Irving Aluminum Conductor Composite Core Ultra-Low Sag transmission conductor (hereafter referred to as ACCC conductor) on existing structures.
- Removing existing OHGW and installing 7#7 Alumoweld OHGW on existing structures for system protection.

3.3.2.1.2.2 Distribution

No distribution-related work is included under the EPL Project.

3.3.2.1.2.3 Substations and Switchyard

The EPL Project would include the following substation- and switchyard-related work:

- Disconnect existing conductor from existing positions at the existing Pisgah Switchyard and Cima Substation and connect newly installed conductors to existing substation positions.
- Remove existing OHGW and install new OHGW at the existing Pisgah Switchyard and Cima Substation. Make minor modifications to the existing terminal racks to accommodate the new OHGW.
- Update, as necessary, relay settings at the existing Lugo, Cima, and Eldorado substations and at the existing Pisgah Switchyard.

3.3.2.1.3 Project Phases

There are two phases associated with the EPL Project: the construction phase and the operations and maintenance (O&M) phase. This PEA addresses the construction phase and its potential impacts. Construction of any one component or all components could be performed at any one time.

SCE is currently performing O&M activities along the existing transmission lines included in the EPL Project, and any past and potential future impacts associated with these O&M activities are considered part of the existing environment. Therefore, the potential impacts that may result during the O&M phase are not addressed unless such potential future impacts differ from the potential future impacts that may result from performing O&M activities along the existing transmission lines included in the EPL Project.

3.3.2.2 Length/Area of Each Segment or Component

The length of each segment is provided in Section 3.3.2.1.

3.3.2.3 Overview Map

An overview map showing each segment is provided in Figure 3.1-1.

3.3.3 Existing Facilities

3.3.3.1 Types of Existing Facilities to be Removed or Modified

The line hardware on some existing structures (lattice steel towers [LSTs]) will be removed or modified under the EPL Project. Existing conductor and OHGW (where installed) would be removed under the EPL Project. No other facilities would be removed or modified under the EPL Project (Table 3.3-1).

3.3.3.2 Structures to be Removed

No structures will be removed under the EPL Project.

3.3.3.2.1 Structures to be Modified

In Segment 1, shorter insulator assemblies would be installed on approximately 26 existing LSTs (existing insulators and associated hardware would be removed, and new insulators and associated hardware would be installed), and the hardware would be modified on 4 LSTs located adjacent to new inter-set structures.

In Segment 2, shorter insulator assemblies would be installed on approximately 32 existing LSTs (existing insulators and associated hardware would be removed, and new insulators and associated hardware would be installed), and the hardware would be modified on 11 LSTs located adjacent to new inter-set structures.

In Segment 3, shorter insulator assemblies would be installed on approximately 2 existing LSTs (existing insulators and associated hardware would be removed, and new insulators and associated hardware would be installed).

In Segment 4, shorter insulator assemblies would be installed on approximately 2 existing LSTs (existing insulators and associated hardware would be removed, and new insulators and associated hardware would be installed).

In Segment 5, no work would be performed.

In Segment 6, shorter insulator assemblies would be installed on approximately 2 existing LSTs (existing insulators and associated hardware would be removed, and new insulators and associated hardware would be installed).

Table 3.3-1. Approximate Number of Existing Structures to be Removed or Modified

Pole Type	Number of Structures Removed	Number of Structures Modified	Approximate Height Above Ground, Existing and Modified Structures (Feet)
Segment 1			
LST	0	30	58-181
Segment 2			
LST/TSP	0	43	64-181
Segment 3			
LST	0	2	64-106
Segment 4			
LST	0	2	64-130
Segment 5			
LST	0	0	68-189
Segment 6			
LST	0	2	68-188

Notes:
The height of structures adjacent to new inter-set structures, and the height of structures on which hardware would be replaced, would not be altered under the EPL Project.

3.3.3.2.2 Conductor to be Removed

At present, the existing conductor installed along the EPL Project transmission lines is 605 Teal Aluminum Conductor Steel Reinforced (ACSR) conductor with a diameter of approximately 0.99 inches. Existing conductor along approximately 121 linear miles of the EPL Project alignment would be removed. The hardware associated with the existing conductor, including insulators, clamps, fittings, etc., would also be removed as part of the EPL Project. In those portions of the EPL Project alignment where conductor is to be replaced, the existing bare steel OHGW, where present, would be removed.

3.3.3.3 Description of Existing Facilities by Segment

The quantities and types of existing facilities to be removed are described by Segment in the following sections.

3.3.3.3.1 Segment 1

Existing conductor, and associated hardware, would be removed along approximately 7 miles of Segment 1. Some existing porcelain insulators and associated hardware found on 26 structures would be removed. On 5 structures adjacent to new inter-set structures, the existing hardware would be removed.

3.3.3.3.2 Segment 2

Existing conductor, and associated hardware, would be removed along approximately 7 miles of Segment 2. Some existing porcelain insulators and associated hardware found on 32 structures would be removed. On 14 structures adjacent to new inter-set structures, the existing hardware would be removed.

3.3.3.3.3 Segment 3

Existing conductor, and associated hardware, would be removed along approximately 42 miles of Segment 3. Some existing porcelain insulators and associated hardware found on 2 structures would be removed.

3.3.3.3.4 Segments 4 and 6

Existing conductor, and associated hardware, would be removed along approximately 65 miles of Segments 4 and 6. Some existing porcelain insulators and associated hardware found on 4 structures (2 each in segments 4 and 6) would be removed.

3.3.3.4 Above-Ground and Below-Ground Facilities

No facilities, in their entirety, would be removed under the EPL Project. The conductor, OHGW, insulators, and associated hardware, are all located above-ground; no below-ground facilities (underground conduit, cable, etc.) would be removed under the EPL Project.

3.3.3.5 Disposition of Existing Facilities

The existing facilities to be removed—conductor, OHGW, insulators, and associated hardware—would be removed completely and recycled or disposed. These would be removed because they would be replaced by new conductor, OHGW, insulators, and associated hardware.

3.3.3.6 Names, Types, and Materials of Existing Facilities

Hardware would be replaced or modified on the following structures as part of the EPL Project:

- LST: Self-supporting tower structure constructed from galvanized steel that has foundations.

There are no capacities or volumes associated with the structures on which hardware would be replaced under the EPL Project.

3.3.3.7 Existing Facility Diagram

Images of the existing structure types along the EPL Project alignment are found in the figures accompanying Section 5.1.

3.3.3.8 Surface Colors, Textures, Light Reflectivity, and Lighting

The LSTs along the EPL Project alignment are grey in color; the surface texture is weathered; the galvanized steel is moderately light reflective; and there is no aviation safety lighting of, or other lighting on, the existing LSTs. No structures on which hardware would be modified have lighting installed on them.

3.3.4 Proposed Facilities

3.3.4.1 Facilities to be Installed or Modified

No substations, switching stations, gas storage facilities, gas pipelines, or service buildings would be installed under the EPL Project.

Under the EPL Project, new transmission structures, new transmission conductor, new OHGW, and new insulators and associated hardware would be installed. An existing substation and a switchyard would be modified as addressed below in Section 3.3.8. The locations of these facilities are illustrated in Appendix A.

3.3.4.1.1 Transmission Structures Description

New transmission inter-set structures (i.e., steel pole H-frames) would be installed under the EPL Project. No other wholly new facilities would be installed under the EPL Project.

The new transmission inter-set structures may be constructed from either tubular steel poles (TSPs) or lightweight steel (LWS) poles. TSPs are engineered structures constructed from galvanized steel; the design of a given TSP is specific to the location and engineering considerations of that given TSP. TSPs would be either installed on a drilled, poured-in-place, concrete foundation, or would be installed on drilled micro-piles. LWS poles are structures constructed from galvanized steel; LWS poles are non-engineered wood pole-equivalents. LWS poles would be direct-buried; in some locations, steel, cardboard, or plastic forms may be placed to stabilize the excavation walls prior to installation of the pole. H-frames are constructed from two TSPs or two LWS poles supporting a horizontal member between them.

Transmission facilities would be designed consistent with the Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 (Avian Power Line Interaction Committee 2006) where feasible. Transmission facilities would also be evaluated for potential collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of Art in 2012 (Avian Power Line Interaction Committee 2012).

3.3.4.1.2 Conductor/Cable

Under the EPL Project, ACCC conductor would be installed in portions of Segments 1, 2, 3, 4, and 6. The conductor would be non-specular and would have a diameter of approximately 0.88 inches. Replacement conductor would be installed along approximately 121 linear miles of the EPL Project alignment.

Replacement OHGW would be installed in those portions of Segments 1, 2, 3, 4, and 6 where new conductor is installed. Two OHGWs are presently installed on existing structures, and two OHGWs would be installed on each structure on which new conductor is installed. Replacement OHGW would be

installed along approximately 121 linear miles of the EPL Project alignment. The OHGW, and associated hardware, would be installed at the top of existing structures. The OHGW would be non-specular bare steel with a diameter of approximately 0.5 inches.

3.3.4.2 Description of Facilities by Segment

An accounting of the numbers and types of structures proposed to be installed, by Segment, are presented in Table 3.3-2; this table also presents the range of above-ground and below-ground dimensions of proposed structures.

3.3.4.2.1 Segment 1

The following components will be installed in Segment 1:

- Install approximately 3 single-circuit inter-set steel pole H-frames.
- Replace conductor on existing structures along approximately 7 miles of the EPL Project alignment.
- Replace OHGW on existing structures along approximately 7 miles of the EPL Project alignment.[12]

3.3.4.2.2 Segment 2

The following components will be installed in Segment 2:

- Install approximately 9 single-circuit inter-set steel pole H-frames.
- Replace conductor on existing structures along approximately 7 miles of the EPL Project alignment.
- Replace OHGW on existing structures approximately along approximately 7 miles of the EPL Project alignment.

3.3.4.2.3 Segment 3

The following components will be installed in Segment 3:

- Replace conductor on existing structures along approximately 42 miles of the EPL Project alignment.
- Replace OHGW on existing structures approximately along approximately 42 miles of the EPL Project alignment.

3.3.4.2.4 Segment 4 and 6

The following components will be installed in Segment 4 and Segment 6:

- Replace conductor on existing structures along approximately 65 miles of the EPL Project alignment.
- Replace OHGW on existing structures approximately along approximately 65 miles of the EPL Project alignment.

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[12] Two OHGWs will be replaced on the existing structures.

3.3.4.3 Above-ground and Below-ground Facilities

All facilities to be installed under the EPL Project are considered above-ground facilities. The steel pole H-frame inter-set structures to be installed have both above-ground and below-ground portions; TSPs would be installed on concrete foundations or on micro-piles, and LWS poles would be direct-buried. The range of potential burial depth or size of foundations associated with the TSPs and LWS poles is presented in Table 3.3-2.

Table 3.3-2. Structures to be Installed

Pole Type	Proposed Approximate Number of Structures	Approximate Height Above Ground (Feet)	Approximate Pole Diameter (Feet)	Approximate Foundation Depth (TSPs) or Burial Depth (LWS poles) (Feet)	Approximate Foundation Diameter (TSPs) or Auger Width (LWS pole) (Feet)	Approximate Concrete Volume (Cubic Yards)
Segment 1						
Steel pole H-frame	3	60-85	2-2.5	TSP: 10-20 LWS: 8-11	TSP: 4-5 LWS: 2.5-3	TSP: 5-15 LWS: 0
Segment 2						
Steel pole H-frame	9	60-115	2-4	TSP: 10-40 LWS: 8-11	TSP: 4-6 LWS: 2.5-3	TSP: 5-42 LWS: 0

3.3.4.4 Different Facilities

No unique structures such as riser poles (overhead-to-underground configuration poles) would be installed under the EPL Project. No dead-end structures would be installed, and no structures would be installed at high-angle inflection points. All new inter-set structures would be suspension (i.e., tangent) structures.

Guys may be used on tangent/suspension inter-set H-frames as field conditions dictate. Guying consists of a guy wire (down guy) that is fastened to a pole and attached to a buried anchor, or when there is not adequate space for the required down guy, a shorter guy pole (stub pole) is typically placed with a down guy and buried anchor in a location that has sufficient room for these facilities. The need for and location of guy wires and anchors for LWS pole H-frames would be determined during final engineering and construction on a case-by-case basis. Guying across a roadway would be avoided where feasible.

3.3.4.5 Civil Engineering Requirements

3.3.4.5.1 Permanent Roads

No new permanent access roads are included as part of the EPL Project. Twelve new permanent spur roads, with a total length of approximately 1,000 feet, would be constructed under the EPL Project; these spur roads would ensure permanent overland access to the new inter-set structures. New permanent spur roads would be 18 feet wide. All new permanent spur roads would be installed in California.

3.3.4.5.2 Foundations

If the need to install a TSP H-frame is identified under the EPL Project, each of the two TSPs used to construct the H-frame would be attached to a concrete foundation or installed on an engineered micro-pile foundation. TSP concrete pile foundations would be approximately 4 to 6 feet in diameter and would extend underground approximately 10 to 40 feet with approximately 1 to 3 feet of concrete visible above ground. Each TSP would use approximately 5 to 42 cubic yards of concrete.

Where necessary, foundations may also be installed utilizing micro-piles. Installation of micro-piles would require the drilling of several smaller diameter holes (approximately 7-10, 8-inch holes) for each foundation. Rebar is placed within each hole and the holes are filled with cement grout. The micro-piles would then be tied together, to act as a single unit foundation, in a reinforced concrete cap upon which the TSP would be installed.

No other foundations are included under the EPL Project.

3.3.4.5.3 Temporary Work Pads

No civil engineering is anticipated to be necessary for development of temporary work pads.

3.3.4.5.4 Spill Containment

No engineered spill containment structures are included under the EPL Project.

3.3.4.6 Permanent and Temporary Facilities

SCE does not, at this time, anticipate the need for temporary facilities (i.e., poles, shoo-fly lines, mobile substations, transformers, capacitors, switch racks, or driveways) beyond those addressed elsewhere in this document (such as the guard structures discussed in Section 3.5.5.4).

3.3.4.7 Names, Types, and Materials of Proposed Facilities

The following structures would be installed or modified under the EPL Project:

- TSP H-frame: Self-supporting H-frame structure constructed from two TSPs and a horizontal member attached to two galvanized steel TSPs.
- LWS Pole H-frame: Self-supporting or guyed H-frame structure constructed from two LWS poles and a horizontal member attached to two galvanized steel LWS poles.

There are no capacities or volumes associated with any of the facilities to be installed or modified under the EPL Project.

3.3.4.8 Diagrams of the Proposed Structures

A diagram of the typical proposed steel pole H-frame structure is presented in Appendix A. The typical dimensions of such structures are presented in Table 3.3-2.

3.3.4.9 Surface colors, Textures, Light Reflectivity, and Lighting

The TSPs and LWS poles installed under the EPL Project would be grey in color, with a dull non-specular finish. Since the galvanized steel would be dull, the light reflectivity of the TSPs and LWS poles would be moderate and would lessen over time as the poles weather. SCE does not anticipate any new structure lighting being installed under the EPL Project, except as described in Section 3.3.5.1 below. The overhead conductor and OHGW to be installed would be dulled and non-specular.

3.3.5 Other Potentially Required Facilities

3.3.5.1 Other Actions or Facilities that may be Required

3.3.5.1.1 Unconnected Utilities or Other Types of Infrastructure

The EPL Project would not require the modification or replacement of unconnected utilities or other types of infrastructure. Unconnected, third-party infrastructure located on existing structures would be left in-place.

3.3.5.1.2 Aviation Lighting and/or Marking

The FAA has not made a determination regarding the lighting or marking of any component of the EPL Project. A draft FAA Notice and Criteria Tool Results are provided in Appendix V.

3.3.5.1.3 Additional Civil Engineering Requirements to Address Site Conditions or Slope Stabilization Issues

The need for slope stabilization, including retaining walls, is addressed in Sections 3.5.1.1, 3.5.2.2, 3.5.3.1, and 3.5.4.5.

The EPL Project is not anticipated to include additional civil engineering requirements to address site conditions or slope stabilization issues. The establishment and use of construction work areas would generally not require slope stabilization; in areas where structures are located in areas with steep slopes, structures could be accessed either by foot or by helicopter, thus negating the need to prepare a construction work area for a vehicle at that structure. Where the siting of construction work areas is fully or partially discretionary (e.g., the siting of conductor stringing sites), such work areas have been preferentially sited in areas that will not require slope stabilization.

3.3.5.2 Location of Each Facility

The locations of unconnected utilities and other types of infrastructure are displayed on Figure 5.19-1.

3.3.6 Future Expansions and Equipment Lifespans

3.3.6.1 Current and Reasonably Foreseeable Plans for Expansion

There are no current and reasonably foreseeable plans for expansion or future phases of development associated with the EPL Project.

3.3.6.2 Expected Usable Life

The structures, conductor, and OHGW to be installed under the EPL Project could have a usable life of greater than 40 years.

3.3.6.3 Reasonably Foreseeable Consequences

There are no reasonably foreseeable consequences of the EPL Project; the project is designed to remediate identified clearance discrepancies, not to provide new or additional electrical service that could facilitate or trigger the expansion or upgrading of the infrastructure associated with the EPL Project.

3.3.7 Below-Ground Conductor/Cable Installations

3.3.7.1 Type of Line to be Installed

No electrical conductor or cable of any type would be installed below-ground under the EPL Project.

3.3.7.2 Type of Casing

No electrical conductor or cable of any type would be installed below-ground under the EPL Project.

3.3.7.3 Type of Infrastructure Installed within the Duct Bank

No electrical conductor or cable of any type would be installed below-ground under the EPL Project.

3.3.8 Electric Substations and Switching Stations

No new electric substations or switching stations would be constructed under the EPL Project.

3.3.8.1 Transformer Banks

No transformer banks would be added under the EPL Project.

3.3.8.2 Gas Insulated Switchgear

No gas insulated switchgear would be installed under the EPL Project.

3.3.8.3 Operation and Maintenance Facilities, Telecommunications Equipment, or SCADA Equipment

No O&M facilities would be installed under the EPL Project. No telecommunications equipment or SCADA equipment would be installed under the EPL Project. System protection-related modifications at the Lugo, Cima, and Eldorado substations and Pisgah Switchyard would include reprogramming relays.

3.3.9 Gas Pipelines

No gas pipelines are included in the EPL Project.

3.3.10 Gas Storage Facilities – Background and Resource Information

No gas storage facilities are included in the EPL Project.

3.3.11 Gas Storage Facilities – Well-Head Sites

No gas storage facilities are included in the EPL Project.

3.3.12 Gas Storage Facilities – Production and Injection

No gas storage facilities are included in the EPL Project.

3.3.13 Gas Storage Facilities – Electrical Energy

No gas storage facilities are included in the EPL Project.

3.3.14 Telecommunication Lines

No telecommunication lines or cable would be installed under the EPL Project.

3.4 Land Ownership, Rights-of-Way, and Easements

3.4.1 Land Ownership

The EPL Project is located on federal, state, and other lands as follows:

- Federal Land
  - Approximately 34 miles of Segment 1, 31 miles of Segment 2, 25 miles of Segment 3, 25 miles of Segment 4, 21 miles of Segment 5, and 21 miles of Segment 6 are located on and over federal lands managed by the BLM.
  - Approximately 53.4 miles of Segment 3, and 53.6 miles of Segment 4 are located on and over federal lands managed by the NPS.
  - The Pisgah Switchyard and Eldorado Substation are located on lands managed by the BLM.
- State Land

- Approximately 1 mile of Segment 1, 0.2 miles of Segment 2, 4 miles of Segment 3, and 4 miles of Segment 4 are located on and over state-owned parcels.

- County/City Lands
  - Approximately 6.2 miles of Segment 5 and 6.2 miles of Segment 6 are located on lands owned by the City of Boulder City (NV) in Segment 6.
  - A portion of the Eldorado Substation is located on land owned by the City of Boulder City (NV).
- Private Lands
  - Approximately 32 miles of Segment 1 and 35 miles of Segment 2 are located on and over private lands.
  - Lugo Substation and Cima Substation are located on SCE-owned parcels.

3.4.2 Existing Rights-of-Way or Easements

3.4.2.1 Existing Rights-of-Way or Easements: Identification and Description

SCE has rights over a majority of the length of the EPL Project alignment. The ROW on lands managed by the BLM and by the NPS varies in width generally from 200 feet to 725 feet. The existing easements on state lands, where present, are 700 feet wide. Easements over private lands vary in width generally from 200 feet to 730 feet. Portions of the EPL Project alignment also cross county and city roadways in franchise.

3.4.2.2 Existing Rights-of-Way or Easements: Replacement, Modification, or Relocation of Project Facilities

The EPL Project proposes to install and modify facilities within the existing ROW or easement; no facilities will be installed outside the existing ROW or easement.

3.4.3 New or Modified Rights-of-Way or Easements

3.4.3.1 New Permanent or Modified ROWs or Easements

SCE would secure the necessary ROW grant(s) from the appropriate federal agency . Further, SCE does not possess sufficient ROW or easement rights for approximately 1 mile of the EPL Project alignment on private lands; SCE would acquire permanent easements across these parcels. The specific width of the easements to be acquired would vary and would be defined upon final engineering.

3.4.3.2 Acquisition of New Permanent or Modified Rights-of Way or Easements

New permanent or modified ROWs may be obtained from the relevant public agency through that agency's designated process. New permanent easements over private lands would be obtained by SCE through negotiations with landowners. Pursuant to Cal. Pub. Util. Code Section 612, SCE also has the power of eminent domain to acquire any necessary rights for construction. The total number of acquisitions would be determined upon the completion of final engineering.

3.4.3.3 Properties/Parcels That May Require Acquisition

No properties or parcels, or partial properties or parcels, would be acquired in fee.

3.4.3.4 New Rights-of-Way or Easements: Development Restrictions

The terms of any new ROWs or easements are not known at this time. However, SCE would not negotiate or obtain ROWs or easements with terms that would be restrictive to the construction, operation, or maintenance of its infrastructure.

3.4.3.5 Relocation or Demolition of Commercial or Residential Property or Structures

No commercial or residential properties or structures would be relocated or demolished as part of the EPL Project.

3.4.4 Temporary Rights-of-Way or Easements

3.4.4.1 Temporary Rights-of-Way or Easements: Required for Access

Construction work areas would be accessed via existing access roads, which are either covered under existing easements, new permanent easements, or new temporary rights. Temporary Construction Easements or Temporary Entry Permits may be obtained by SCE to utilize some existing access roads.

3.4.4.2 Temporary Rights-of-Way or Easements: Construction Area Locations

Generally, construction work areas located along the EPL Project alignment that may require temporary rights are conductor stringing sites and structure work areas located at points of inflection (angles) in the EPL Project alignment; off-alignment construction work areas that may require a temporary easement include staging areas and helicopter landing zones. SCE anticipates obtaining temporary rights for all staging areas listed in Section 3.5.2 below and all landing zones that are not located on SCE fee-owned property.

Most temporary construction areas would be located within the existing ROWs or easements; use of these areas are available to SCE without a temporary right except for landing zones. The large majority of these temporary construction areas would be located at and adjacent to existing structures. Other temporary construction areas that would be located wholly or partially within the existing ROWs or easements include staging areas, conductor stringing sites, and guard structures. 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.

3.4.4.3 Temporary Rights-of-Way or Easements: Acquisition

Temporary ROWs or easements on federal lands (if identified as necessary during the final engineering process) would be acquired from the BLM and/or NPS. On non-federal and state lands, SCE will work with appropriate landowners to acquire any necessary temporary entry permits. Pursuant to Cal. Pub. Util. Code Section 612, SCE also has the power of eminent domain to acquire any necessary rights for construction.

3.5 Construction

The following subsections describe the construction activities associated with the EPL Project. Prior to the start of any activity described in the following sections, pre-construction clearance surveys will be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources) to avoid or minimize impacts on special status plants and wildlife species, habitat, nesting birds, and other sensitive biological resources in areas with the potential for resources to be present. Sensitive resources identified during the clearance survey will either be:

- Flagged for avoidance,
- Moved to outside impact areas,
- Avoided by implementing procedures to avoid impacts to individuals while impacting habitat (e.g., burrows, dens, etc.), or
- Documented based on permit authorizations.

Where special-status species (e.g., reptiles, birds, mammals, and bat roosts) or unique resources (defined by regulations and local conservation plans) are known to occur and there is a potential for direct impacts, qualified biologists will monitor construction activities to ensure that impacts to special-status species, sensitive vegetation types, wildlife habitat, and unique resources are avoided or minimized in accordance with the approved monitoring plan of the respective lead CEQA and NEPA agency.

3.5.1 Construction Access (All Projects)

3.5.1.1 Existing Access Roads

3.5.1.1.1 Existing Access Roads: Lengths, Widths, and Ownership

Transmission line roads are classified into two groups: access roads and spur roads. Access roads are through roads that run between structure sites and serve as the main transportation route along transmission line alignments. Spur roads are roads that lead from access roads and terminate at one or more structure sites.

Construction crews would employ a network of existing dirt access and spur roads along the EPL Project alignment; this network would be accessed from paved and unpaved public roads.

Approximately 200 miles of existing SCE-maintained dirt access and spur roads would be used during the construction of the EPL Project. The widths of these roads vary across the EPL Project alignment but are generally 15 to 20 feet wide; these roads account for approximately 480 acres of existing permanent disturbance (Table 3.5-1).

Table 3.5-1. Access and Spur Road Land Disturbance

Project Feature	Description	Acres, Presently Disturbed	Acres to be Restored	Acres, Newly Disturbed
Existing Dirt Access and Spur Roads	Previously-graded.	480	0	0.22
New Spur Roads	Would be 18 feet wide, bladed and potentially compacted depending on local conditions. Crushed rock may be applied.	0	0	0.41
Overland Access	No preparation required. Typically areas that are relatively flat.	0	6.5	0

Note: All acreages are approximate.

3.5.1.1.2 Existing Access Roads: Modifications

Approximately 200 miles of existing access and spur roads would be employed for construction of the EPL Project. During construction, some of the existing access and spur roads may require maintenance to transport heavy equipment and material along the EPL Project alignment. The full extent and scope of road maintenance is unknown at this time; the EPL Project is located in a dynamic desert environment that is subject to, among other phenomena, monsoonal rains, flash floods, and debris flows. These phenomena have and can radically alter field conditions along the EPL Project alignment in short order, and thus road maintenance requirements are subject to change. If necessary, road maintenance under the EPL Project would be equivalent to the typical maintenance work that is performed routinely along the access road network. These 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 this 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, or temporary plating or matting may be placed within the existing road prism. This road base, crushed rock, or temporary plating or matting, may be laid to compensate for soft soils. Temporary plating or matting would be removed at the end of construction. This activity may be repeated as required during the course of the project.[13]

Depending on the condition of the existing access and spur road network at the time of construction, more-extensive rehabilitation may be necessary; this could include:

- The repair and stabilization of washouts
- Widening of the existing roadbed at curves and other locations; and
- Installation of new, or repair of existing, drainage structures such as wet crossings, water bars, over side drains and pipe culverts to allow for construction traffic usage, as well as to prevent road damage due to uncontrolled water flow.

These activities, and the repair and stabilization of slides and other slope failures by installing retaining walls or other means necessary to prevent future failures, may be needed along other portions of the access road network immediately prior to or during construction depending on field conditions at that time.

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

3.5.1.1.3 Existing Access Roads: Incidental Damage

No incidental road damage is anticipated to be caused by EPL Project activities. SCE and construction contractor crews would utilize paved and unpaved public roads to access SCE's network of unpaved access roads; work may also be performed from these paved and unpaved public roads. If ministerial permits are necessary for the movement of oversize or overweight vehicles along public roadways, or to perform work from public roadways, SCE would comply with the conditions of the permit(s), including conditions related to the repair of incidental road damage.

3.5.1.1.4 Detailed Maps and Associated GIS Data

Existing access roads are shown in Appendix A; GIS data are provided under separate electronic cover.

3.5.1.2 New Access Roads

3.5.1.2.1 New Access Roads

No new permanent or temporary access roads would be constructed under the EPL Project. New permanent spur roads will be constructed for permanent access to new inter-set structures.

[13] At this time, only approximately 1,200 linear feet of existing access road has been identified for more extensive rehabilitation; this section of existing access road will be widened from the current width of approximately 10 feet to meet the SCE standard 18 foot-wide access road.

3.5.1.2.2 Lengths, Widths, and Development Methods for New Access Roads

No new permanent or temporary access roads would be constructed as part of the EPL Project. New permanent spur roads will be constructed for permanent access to the new inter-set structures as shown in Table 3.5-2.

Table 3.5-2. New Permanent Spur Roads

Project Feature	Approximate Length (feet)	Approximate Width (feet)
Inter-set M193 H1A	75	18
Inter-set M177 H2A	100	18
Inter-set M160 H1A	75	18
Inter-set M159 H4A	75	18
Inter-set M157 H4A	75	18
Inter-set M157 H3A	75	18
Inter-set M155 H3A	75	18
Inter-set M153 H3A	75	18
Inter-set M153 H2A	75	18
Inter-set M137 H4A	50	18
Inter-set M137 H3A	50	18
Inter-set M134 H3A	200	18

The new permanent spur roads will be developed using typical construction methods: the route from the existing access road to the new inter-set structure that presents the fewest potential impacts will be selected and flagged, vegetation within the spur road flagging (where present) will be removed, the spur road route will be graded if necessary to smooth the surface, and the route will be compacted to provide a smooth and dense riding surface capable of supporting heavy construction equipment. If surface conditions warrant, rock may be laid along the spur road. Vehicle turnaround areas may be established at the end of the new permanent spur roads.

3.5.1.2.3 New Access Roads: Gates

No new temporary or permanent gates would be installed under the EPL Project.

3.5.1.2.4 New Access Roads: Restoration

No new permanent or temporary access roads would be constructed as part of the EPL Project. The new permanent spur roads would be permanent and thus not restored.

3.5.1.2.5 Detailed Maps and Associated GIS Data

Because no new permanent or temporary access roads are included under the EPL Project, none are shown in Appendix A and none are indicated in the GIS data. New permanent spur roads are shown in Appendix A and are indicated in the GIS data.

3.5.1.3 Overland Access Routes

3.5.1.3.1 Overland Access Routes

Where existing spur or access roads to a construction work area are not present, and where surface conditions are amenable, that location may be accessed overland. Where overland travel is feasible, vegetation would be trimmed 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 surface to facilitate access to a work location. No blading, grading, or gravel placement would occur on overland access routes.

3.5.1.3.2 Overland Access Routes: Lengths and Widths

Approximately 3.3 miles of new overland access routes would be used during construction of the EPL Project. No grading or gravel placement would occur in these areas. The overland access routes would be approximately 14 feet wide.

3.5.1.3.3 Detailed Maps and Associated GIS Data

Overland access routes are shown in Appendix A; GIS data are provided under separate electronic cover.

3.5.1.4 Watercourse Crossings

3.5.1.4.1 Temporary Watercourse Crossings

No temporary watercourse crossings would be required during construction.

3.5.1.4.2 Bridge or Culvert Replacement or Installation

No bridges would be replaced or installed under the EPL Project.

Ephemeral drainages are currently crossed at-grade or are culverted. These crossings, like the remainder of the access road network, are regularly maintained, including re-establishing the at-grade crossings as needed and repairing or replacing culverts as necessary. During construction of the EPL Project, these at-grade and culverted crossings would be driven over by construction equipment. Existing culverts may be repaired or replaced as part of the EPL Project.

Where existing access or spur roads cross a culverted watercourse, temporary steel plating or matting may be laid over the roadway to protect the culverts and to support the movement of heavy construction equipment. Steel plating or matting may also be placed where access roads cross watercourses at-grade, depending on surface conditions at the time of construction. The need to place temporary steel plating or matting would be determined immediately prior to construction, as the locations, morphologies, and physical conditions of the ephemeral drainages crossed by the access road network are subject to change over time.

3.5.1.4.3 Location, Design, and Construction Methods

The locations of temporary steel plating or matting would be determined prior to construction, as the morphologies and physical conditions of the ephemeral drainages crossed by the access road network are subject to change over time.

3.5.1.5 Helicopter Access

3.5.1.5.1 Helicopter Access: Types and Quantities

Helicopters would be used to support construction activities along portions of Segments 1, 2, 3, 4, and 6 of the EPL Project alignment. Light and medium helicopters may be used during construction of the EPL Project. At this time, the exact total number of helicopters that may be used, and the exact number of helicopters that may be used simultaneously is unknown. SCE would consider Institute of Electrical and Electronics Engineers Standards 951-1966, Guide to the Assembly and Erection of Metal Transmission Structures, and 524-2003, Guide to the Installation of Overhead Transmission Line Conductors in the construction of the EPL Project.

Helicopters may 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 there are environmental constraints to accessing the 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.

Light helicopter (Hughes 500 or similar) activities may include transportation of construction workers, delivery of equipment and materials to construction work area, hardware installation, and conductor and OHGW stringing operations.

Medium helicopter (Kaman K-Max or similar) activities may include delivery of equipment and materials to structure sites and installation of inter-set structures.

3.5.1.5.2 Helicopter Access: Takeoff and Landing Areas

Helicopter takeoff and landing areas typically include helicopter landing zones and staging areas, and public and private airports or airstrips. SCE anticipates using the staging areas listed in Table 3.5-3 as helicopter staging areas for the EPL Project; helicopter operation crews, as well as fueling and maintenance trucks, may be based in the staging areas.

If the construction contractor determines that helicopter-assisted construction is required at a given construction work area, and the given construction work area is not located proximate to an identified staging area, then a helicopter landing zone will be designated either along the alignment or off-alignment. In addition, the access and spur roads that would be utilized during the construction of the EPL Project are identified, in their entirety, as a helicopter landing zone; this is necessary given the long linear length of the EPL Project over which helicopter-assisted construction may be necessary. Helicopters would land on access or spur roads to pick-up or drop poles, cargo, or workers. At night or during off days, for safety and security concerns, helicopters may be based at a local airport(s) or airstrips.

3.5.1.5.3 Helicopter Access: Refueling Procedures and Locations

Helicopter refueling would generally occur off-site at local airports and at the staging areas listed in Table 3.5-3; in some instances, refueling could occur at designated helicopter landing zones along the EPL Project alignment that are not identified as staging areas. Best management practices (BMPs) WM-4, Spill Prevention and Control, and NS-9, Vehicle and Equipment Fueling, would be implemented during refueling at all locations where commercial refueling services are not available.

3.5.1.5.4 Helicopter Access: Flight Paths, Payloads, and Hours and Durations of Operation

In the absence of biological resource impact avoidance constraints, flight paths would be determined immediately prior to construction by the helicopter contractor. Flight paths would be filed with the appropriate authorities as appropriate. Helicopter payloads would vary according to the construction activity: during conductor and OHGW installation, the payload would consist of a lightweight sock line; during structure installation, the payload would comprise sections of sections of TSPs or LWS poles being installed, and human external cargo (i.e., construction workers).[14]

[14] Note that the EPL Project Description, as presented in part in Section 3.13.2, includes information regarding times and locations where helicopter flight activities may be limited to avoid impacts to biological resources.

The total duration of helicopter operation over the construction period is not exactly known at this time; estimates of helicopter operation durations are presented in Table 3.6-1. When operated, helicopters would generally be flown only during daytime hours (the period from 30 minutes before sunrise to 30 minutes after sunset).

3.5.1.5.5 Helicopter Access: Safety Procedures or Requirements

As necessary, SCE will obtain a Congested Area Plan from the Federal Aviation Administration (FAA). SCE has developed and will implement during construction a preliminary Helicopter Use and Safety Plan for the EPL Project (Appendix O).

3.5.2 Staging Areas

3.5.2.1 Staging Area Locations

3.5.2.1.1 Staging Area Locations

SCE anticipates using one or more of the possible locations listed in Table 3.5-3 and shown in Figure 3.5-1 as the staging areas for the EPL Project.

3.5.2.1.2 Staging Area Size

The size of each of the identified staging areas, and the total acreage associated with staging areas, is presented in Table 3.5-3.

Table 3.5-3. Potential Staging Area Locations

Staging Area Name	Location	Condition	Approx. Area (Acres)	Project Component(s)
Lugo 1	Lugo Substation	Disturbed/undisturbed	12.6	Segments 1 and 2
Lugo 2	Lugo Substation	Disturbed/graveled	4.4	Segments 1 and 2
Baker	Baker Airport	Disturbed	4.1	Segments 3 and 4
Bear Valley	SR-18 and Joshua Road	Graveled	4.2	Segments 1 and 2
Pisgah Switchyard	Pisgah Switchyard	Graveled	6.2	Segments 1-4
Crucero Road	Crucero Road	Undisturbed	6.8	Segments 3 and 4
Cima Yard 1	Cima Substation	Undisturbed	6.8 (average)	Segments 3 and 4
Cima Yard 2	Cima Substation	Undisturbed		Segments 3 and 4
Cima Yard 3	Cima Substation	Undisturbed		Segments 3 and 4
Cima Yard 4	Cima Substation	Undisturbed		Segments 3 and 4
Cima Yard 5	Cima Substation	Undisturbed		Segments 3 and 4
Kelbaker Road	Kelbaker Road	Disturbed/Undisturbed	5.2	Segments 3 and 4
Ludlow Yard	Ludlow	Disturbed	4.2	Segments 3 and 4
Nipton Yard	Nipton	Graveled	3.6	Segments 3, 4, and 6
Nipton Backup Yard	Nipton	Disturbed/asphalted	1.3	Segments 3, 4, and 6
Total Area			**59.4**	

3.5.2.2 Staging Area Preparation

3.5.2.2.1 Site Preparation

With the exception of staging areas that are asphalted or already have a rock base, grubbing (i.e., vegetation removal) and/or minor grading will be required to provide a flat and compacted surface for the application of gravel or crushed rock. No new access roads would be constructed to access any of the staging areas; short overland travel routes may be identified and used in some cases. Any land that may

be disturbed at a staging area would be returned to as close to preconstruction conditions as feasible following the completion of construction for the EPL Project, unless otherwise agreed to with the landowner.

3.5.2.2.2 Staging Areas: Uses

Staging areas would be used as a 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, but not be limited to, construction trailers, construction equipment, portable worker sanitation facilities, steel bundles, steel/wood poles, conductor/OHGW reels, hardware, insulators, cross arms, signage, consumables (such as fuel and filler compound), waste materials for salvaging, recycling, or disposal, and Storm Water Pollution Prevention Plan (SWPPP) BMP materials such as, but not limited to, straw wattles, gravel bags, and silt fences.

A majority of materials associated with the construction efforts would be delivered by truck to designated staging areas, while some materials may be delivered directly to the temporary construction areas described in Section 3.5.3.1.

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

3.5.2.2.3 Staging Areas: Security

The staging areas would be secured through installation of temporary perimeter fencing and one or more gates; typically, chain-link fencing is 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.

3.5.2.2.4 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 it is determined that temporary power is not needed or available at the staging areas full-time, a portable generator may be used intermittently for electrical power at one or more of the yards.

3.5.2.2.5 Staging Areas: Temporary 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 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 is directed away from the nearest residence(s). Night lighting for staging areas shall be the minimum necessary to ensure safety and security for nighttime activities and operations.

3.5.2.2.6 Staging Areas: Grading Activities and/or Slope Stabilization

No slope stabilization or extensive grading activities would be performed at any staging area as the staging areas are relatively level. Grading activities that may occur would be focused on leveling out any uneven surfaces.

3.5.3 Construction Work Areas

3.5.3.1 Construction Work Areas

3.5.3.1.1 Known Work Areas

Construction of the EPL Project would be performed in the construction work areas described in the sections below.

3.5.3.1.2 Construction Work Area Activities

3.5.3.1.2.1 Helicopter Landing Zones and Touchdown Areas

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

- Dropping-off or picking-up construction crew members
- Dropping-off or picking-up air-portable construction equipment
- Assembly of pole sections (installation of cross-arms, hardware, etc. on a section of pole)
- Lifting of pole sections by helicopter
- Dropping-off or picking-up conductor sock line
- Dropping-off or picking-up conductor pull rope
- Dropping-off or picking up conductor
- Loading and unloading poles and other material to and from trucks

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

3.5.3.1.2.2 Vehicle and Equipment Parking, Passing, or Turnaround Areas

Vehicles and construction equipment would be parked during the day and overnight at staging areas and would be parked during the day (and potentially overnight) at pull-and-tension/stringing sites and other construction work areas along the EPL Project alignment. During work on a structure, vehicles and construction equipment would be parked during construction hours at structure work areas and guard structures, and on adjacent access or spur roads. Vehicles and construction equipment would be parked at helicopter landing zones and on adjacent access or spur roads during helicopter operations from a particular helicopter landing zone. No new passing or turnaround areas along the access and spur road network are included in the EPL Project.

3.5.3.1.2.3 Railroad, Bridge, or Watercourse Crossings

There are no new railroad crossings included in the EPL Project. Existing at-grade or elevated railroad crossings would be utilized during construction; at each of these crossings, temporary guard structures would be installed; these are addressed in Section 3.5.3.1.2.6 below.

No new bridges are included in the EPL Project. Watercourse crossings are addressed above in Section 3.5.1.4.

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

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

- Install inter-set structure
- Replace hardware on existing LST
- Remove conductor from existing structure
- Install conductor and OHGW on existing structure
- Splice conductor
- Vegetation removal or trimming
- Surface grading, leveling, and/or compaction

Additional activities could be performed at temporary work pads.

3.5.3.1.2.5 Excavations and Associated Equipment Work Areas

No excavations except those associated with the installation of LWS poles, installation of TSP foundations, installation of snub poles at pull-and-tension/stringing sites (if necessary), and guard structures are included under the EPL Project.

3.5.3.1.2.6 Temporary Guard Structures

Guard structures are temporary facilities that would typically be installed at transportation (roadways, railroads, etc.), flood control, and utility crossings prior to conductor and OHGW removal or installation activities. These structures are designed to stop the movement of a conductor or OHGW should it momentarily drop below a conventional stringing height. Temporary guard structures may be installed at temporary guard structure locations. Depending on the overall spacing of the conductors being installed, approximately three to five guard poles would be required on either side of a crossing. In some cases, the temporary guard structures could be substituted with the use of specifically equipped boom trucks or, at highway crossings, temporary netting could be installed if required. Guard structures would be installed at all electrical structures and roads where required. The guard structures would be removed after the conductor is secured into place.

3.5.3.1.2.7 Pull-and-Tension/Stringing Sites

Pull-and-tension/stringing sites are those locations where the equipment necessary for removal of existing conductor and OHGW, and equipment necessary for installation of new conductor and OHGW, would be set-up and operated. The pull-and-tension/stringing sites associated with the EPL Project would be temporary.

"Wire pull" is the term used to describe the length of any given continuous wire installation process between two selected points along a line. Wire pulls are selected based on a variety of factors, including availability of dead-end structures, conductor size, geometry of the line as affected by points of inflection, terrain, and suitability of stringing and splicing equipment set-up locations. On relatively straight alignments, typical wire pulls occur approximately every 13,000 feet on flat terrain. When the line route alignment contains multiple deflections or is situated in rugged terrain, the length of the wire pull is

typically diminished. Generally, pull-and-tension/stringing sites would be in direct line with the direction of the overhead conductors and established at a distance equal to approximately three times the height of the adjacent structure.

Each conductor or OHGW removal or installation operation consists of a puller set-up positioned in a pull-and-tension/stringing site located at one end of a wire pull, and a tensioner set-up with wire reel stand truck positioned in a pull-and-tension/stringing site at the other end of a wire pull. Pull-and-tension/stringing sites may also be utilized for splicing and field snubbing of the conductors. Field snubs (i.e., anchoring and dead-end hardware) would be temporarily installed to sag conductor wire to the correct tension at locations where stringing equipment cannot be positioned in back of a dead-end structure.

3.5.3.1.2.8 Splice Sites, Conductor and Overhead Groundwire Removal

Prior to the removal of existing conductor, the existing line splices found on the existing conductor identified for removal may need to be replaced with temporary pulling socks, as line splices that join the conductor together cannot travel through the rollers used during conductor removal activities. At each permanent splice removal site, construction crews in one or two bucket trucks would remove the permanent splice and install a temporary pulling sock.

3.5.3.1.2.9 Jack and Bore Pits, Drilling Areas and Pull-back Areas for Horizontal Directional Drills

The EPL Project does not include the installation of any infrastructure underground, and therefore the use of jack and bore drilling or horizontal directional drilling is not included under the EPL Project.

3.5.3.1.2.10 Retaining Walls

The EPL Project does not include the installation of retaining walls. If, during the final engineering process, the need for retaining walls or other means to prevent future failures is identified, the location, length, height, and type of such walls or other measures would be communicated to the CPUC.

3.5.3.1.2.11 Construction Work Areas: Temporary Lighting

Night lighting of construction work areas shall be the minimum necessary to ensure safety and security for nighttime activities. If temporary lighting is needed at construction work areas, portable light standards would be placed at point(s) along the outside of the staging area as necessary. All night lighting used for construction shall orient lights downward and be shielded to eliminate off-site light spill at times when the lighting is in use. To the extent feasible, light standards would be positioned so that illumination is directed away from the nearest residence(s).

3.5.3.2 Work Area Disturbance

3.5.3.2.1 Dimensions of Each Work Area

The dimensions of each work area described above, including the maximum area that would be disturbed during construction, is shown in Table 3.5-4.

3.5.3.2.2 Temporary and Permanent Disturbance at each Work Area

Table 3.5-4 provides the temporary and permanent disturbance at each work area (in acres), and the total area of temporary and permanent disturbance for the entire project (in acres).

Table 3.5-4. Work Area Disturbance Areas

	Number	Preferred Size (feet)	Disturbance, Temporary, Acres	Disturbance, Permanent, Acres
Staging Areas	15	Varies	59.4	0
Helicopter Landing Zones and Touchdown Areas	6	75 x 75	0.8	0
Vehicle and Equipment Parking, Passing, or Turnaround Areas	0	Varies	0	0
Railroad, Bridge, or Watercourse Crossings	0	Varies	0	0
Temporary Work Pads for Facility Installation, Modification, or Removal				
Install Inter-set Structure	12	200 x 150	8.3	0.9
Replace Hardware on Existing LST	83	75 x 75	10.7	0
Conductor Removal/Installation	550	75 x 75	71.0	0
Temporary Guard Structures	6	75 x 75	0.8	0
Pull-and-Tension/Stringing Sites	49	400 x 150	67.5	0
Jack and Bore Pits, Drilling Areas and Pull-Back Areas for Horizontal Directional Drills	0	Varies	0	0
Retaining walls	0	Varies	0	0
Splice Sites, Conductor and Overhead Groundwire Removal	152	100 x 100	34.9	0
Splice Sites, Conductor and Overhead Groundwire Installation	31	100 x 100	7.1	0
Existing Dirt Access and Spur Roads	N/A	~1,056,000 x 18	0	0.22
New Spur Roads	12	1,000 x 18	0	0.41
Overland Access	278	~17,424 x 18	6.5	0
Total Temporary/Permanent Disturbance Area, Including Access and Spur Roads			Approximately 268 acres	Approximately 1.53 acres

Table 3.5-5 presents the approximate permanent disturbance associated with each structure type, and approximate maximum permanent disturbance area (in acres).

Table 3.5-5. Permanent Disturbance Associated with Structures

	EPL Project (approximate metrics)
Pole Diameter: • LWS H-frame • TSP H-frame	 24-30 inches 48 inches
Auger Hole Depth: • LWS H-frame • TSP H-frame	 8 to 11 feet 10 to 40 feet
Permanent Footprint per Pole/Tower: • LWS H-frame • TSP H-frame	 0.07 acres 0.07 acres
Number of Poles/Towers: • LWS H-frame/TSP H-frame	 12
Total Permanent Footprint for Poles/Towers	Approximately 0.9 acres
Permanent footprint assumes 20’ radius cleared area around base of each leg of H-frame.	

3.5.3.3 Temporary Power

Temporary power or other utility lines may be installed at one or more staging area(s) as part of the EPL Project, or existing temporary power or other utility lines may be utilized. If it is determined that temporary power is not needed "or available" at a given staging area full-time, a portable generator may be used intermittently for electrical power at one or more of the staging areas.

3.5.4 Site Preparation

3.5.4.1 Surveying and Staking

Prior to the start of structure installation activities, the location of each inter-set structure to be installed would be surveyed and staked. Conventional surveying techniques and equipment would be utilized.

3.5.4.2 Utilities

3.5.4.2.1 Underground Utility Identification Process

Under the EPL Project, prior to the start of activities that require excavation, SCE or its construction contractor would identify underground utilities by contacting DigAlert, conducting visual observations, conducting exploratory excavations (potholing), and/or using buried line locating equipment.

3.5.4.2.2 Relocating Existing Utilities

No existing utilities would be relocated as part of the EPL Project.

3.5.4.2.3 Installing Temporary Power

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

3.5.4.3 Vegetation Clearing

3.5.4.3.1 Vegetation Clearing: Types Required

Vegetation and trees would be trimmed or removed as needed at or adjacent to construction work areas to facilitate the safe construction of the EPL Project, and to reduce fire hazards associated with construction activities. Only the minimum amount of vegetation necessary for the safe construction and operation of structures and facilities would be removed. Where feasible, construction work areas have been preferentially selected to minimize the trimming or removal of vegetation and/or trees. Where overland travel is feasible, vegetation would be trimmed while leaving the root structure intact, or vehicles would drive over the extant vegetation.

3.5.4.3.2 Vegetation Clearing: Temporary and Permanent Disturbance

The area of temporary and permanent disturbance of each vegetation community found along the EPL Project alignment is presented in Table 5.4-2. The data in this table distinguish between disturbance that would occur in previously developed areas (i.e., paved, graveled, or otherwise urbanized), and in naturally vegetated areas.

3.5.4.3.3 Vegetation Clearing: Description and Types of Equipment

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 would generally 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. Where overland travel is feasible, vegetation would be trimmed while leaving the root structure intact, or vehicles would drive overland over the extant vegetation.

3.5.4.4 Tree Trimming Removal

3.5.4.4.1 Tree Removal and Trimming: General Order 95-D

No tree trimming pursuant to GO 95-D would be performed as part of the construction of the EPL Project; such tree trimming (as necessary) is currently performed along the EPL Project alignment as part of the O&M activities associated with the transmission lines. Any tree removal performed under the EPL Project would be conducted solely to facilitate the safe construction of the project or to reduce the fire hazards associated with construction activities.

3.5.4.4.2 Tree Removal and Trimming: Types, Locations, Numbers, and Sizes

Trees or portions of trees within or adjacent to staging areas and temporary work pads may be trimmed and/or removed; staging areas have been preferentially selected to minimize the trimming or removal of trees.

SCE has recently performed tree and vegetation trimming and removal activities along portions of the EPL Project alignment as part of the implementation of its Wildfire Mitigation Plan (Appendix Q). Because of this, tree trimming or removal activities are anticipated to be limited in scope.

3.5.4.4.3 Tree Removal and Trimming: Potentially Protected Trees

The potentially protected trees to be removed or substantially trimmed will be inventoried prior to construction.

3.5.4.4.4 Tree Removal and Trimming: Types of Equipment

Tree removal or trimming, if necessary, would be accomplished utilizing such equipment as a dump truck, pick-up truck, chipper, stump grinder, and a bucket truck, among others. Hand tools used during tree removal would include chain saws and/or hand saws.

3.5.4.5 Work Area Stabilization

Work areas would be stabilized utilizing BMPs described in the SWPPPs developed and implemented for the EPL Project; typical BMPs that may be used for work area stabilization are presented in Section 3.5.11.

Generally level areas are selected for staging areas; therefore, no slope stabilization issues are anticipated. Rock could be placed on the surface of staging areas, where appropriate, to stabilize the soils.

If, during the final engineering process, the need for retaining walls or other means to prevent future failures is identified, the location, length, height, and type of such walls or other measures would be communicated to the CPUC. If the need for extensive rehabilitation is identified, a Minor Project Refinement and associated environmental effects analysis would be developed and submitted to the CPUC.

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 may also be used on an as-needed basis in areas to help ensure the safety of personnel during construction activities.

3.5.4.6 Grading

Staging areas and construction work areas could have minor grading and/or grubbing (vegetation removal) as required to provide a reasonably level and vegetation-free surface. Sites would be graded such 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.

Because the transmission lines included under the EPL Project are extant, cleared or graded work pads are located adjacent to many structures along the lines. Where present, SCE will use these existing work pads during construction of the EPL Project.

Where existing work pads are not extant, SCE will delineate temporary work pads adjacent to each structure at which work would occur under the EPL Project. Where the surface and vegetation conditions permit, construction crews would utilize overland travel approaches within these temporary work pads. Where overland travel is not feasible, the temporary work pads would be graded and/or cleared of vegetation as required to provide a reasonably level and vegetation-free surface. Sites would be graded such 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 that could cause damage to new structure foundations or poles.

3.5.4.6.1 Earth Moving or Substantial Grading Activities Description

No earth moving or substantial grading activities (i.e., grading below a 6-inch depth) would be required under the EPL Project.

3.5.4.6.2 Estimated Volumes of Grading

No earth moving or substantial grading activities (i.e., grading below a 6-inch depth) would be required under the EPL Project; therefore, no cut or fill volumes would be reused or hauled away, and no clean fill would be hauled to the site.

3.5.5 Transmission Line Construction (Above Ground)

3.5.5.1 Poles/Towers

3.5.5.1.1 Process and Equipment for Removing Poles, Towers, and Associated Foundations

No poles or towers would be removed under the EPL Project.

3.5.5.1.2 Process and Equipment for Installing or Otherwise Modifying Poles and Towers

3.5.5.1.2.1 TSP H-Frame Installation

TSP structures typically consist of multiple sections. The TSP sections would be placed at temporary work pads at each H-frame inter-set location. A crane would be used to set each TSP base section on top of the previously prepared concrete pier or micro-pile foundation. If existing terrain around the TSP location is not suitable to safely support crane activities, a temporary crane pad would be established within the temporary work pad. Alternately, TSPs 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 temporarily mounted between pole sections in order to jack the pole sections together. The TSP sections may then be spot welded together for additional

stability. Depending on the terrain and available equipment, the pole sections could also be pre-assembled into a complete structure prior to setting the pole. Each TSP in a TSP H-frame structure would be installed as described above. Following installation of the vertical components, the horizontal member of the TSP H-frame would be installed on the vertical poles using the same types of equipment utilized for installation of the vertical components.

3.5.5.1.2.2 LWS H-Frame Installation

LWS poles would be installed using a direct-buried approach. Direct-buried LWS poles would require a hole to be excavated using either an auger, backhoe, or by hand. In some locations, corrugated steel, cardboard, or plastic forms may be placed to stabilize the excavation walls prior to installation of the pole. Excavated material would be used as described in Section 3.5.14. LWS poles consist of separate base and top sections and may be placed on the temporary work pad at each pole location. The LWS poles would be installed in the holes, typically by a line truck or crane. When the base section is secured, the top section(s) would be installed on top of it. Depending on the terrain and available equipment, the pole sections could also be assembled into a complete structure on the ground prior to setting the poles in place within the holes. LWS poles may also be installed by helicopter depending upon existing field conditions at the time of construction. The vertical components of LWS H-frames would be installed as described above. Following installation of the vertical components, the horizontal member of the LWS H-frame would be installed on the vertical poles using the same types of equipment utilized for installation of the vertical components.

3.5.5.1.2.3 Existing Lattice Steel Tower Hardware Modification

On approximately 64 existing LSTs, the existing hardware would be replaced: the existing porcelain insulator assemblies would be replaced with shorter assemblies constructed from glass or polymer insulators. In addition, insulator assembly-related hardware would be replaced. This work would be performed by crews on the towers and in bucket trucks; crews would gain access to the LSTs by foot, overland vehicle, or helicopter.

On approximately 15 existing LSTs located adjacent to new inter-set structures, the existing hardware would be replaced following installation of the inter-set structure. This work would be performed by crews on the towers and in bucket trucks; crews would gain access to the LSTs by foot, overland vehicle, or helicopter.

3.5.5.1.3 Foundation Installation

TSPs would be either installed on a drilled, poured-in-place, concrete foundation, or installed on drilled micro-piles. 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 3.5.14, Waste Generation and Management.

Following excavation of the foundations, steel-reinforced cages would be set, positioning would be survey verified, and concrete would then be poured. Foundations in soft or loose soil or those that extend below the groundwater level may be stabilized with drilling mud slurry. In this instance, mud slurry would be placed in the hole during the drilling process to prevent the sidewalls from sloughing. Concrete would then be pumped to the bottom of the hole, displacing the mud slurry. Depending on site conditions, the mud slurry brought to the surface would typically be collected in a pit adjacent to the foundation or vacuumed directly into a truck to be reused or discarded at an appropriate off-site disposal facility. TSP foundations typically require an excavated hole approximately 4 feet to 6 feet in diameter and

approximately 10 feet to 40 feet deep. TSPs would require approximately 5 to 42 cubic yards of concrete delivered to each structure location.

Where necessary, foundations may also be installed utilizing micropiles. Installation of micropiles would require the drilling of several smaller diameter holes (approximately 7 to 10, 8-inch diameter holes) for each foundation. The holes would be drilled by a drilling rig or drilling attachment on an excavator or similar equipment. After drilling all the holes, each hole would be flushed with water or air to remove drill cuttings and loose material. Micropiles would then be installed by placing rebar in each hole with cement grout 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 would then be tied together, to act as a single unit foundation, in a reinforced concrete cap. Grout could be brought to each tower site dry and mixed at the site.

Conventional construction techniques would generally be used as described above for new foundation installation; no alternative foundation installation methods are anticipated to be used. In certain cases, equipment and material may be deposited at structure sites using helicopters or by workers on foot, and crews may prepare the foundations using hand labor assisted by hydraulic or pneumatic equipment, or other methods.

During construction, existing concrete supply facilities would be used where feasible. However, due to the remote location of some inter-set structure locations, a temporary concrete batch plant could be set up in one or more established staging areas. Equipment could include a central mixer unit (drum type); three silos for injecting concrete additives, fly ash, and cement; a water tank; portable pumps; a pneumatic injector; and a loader for handling concrete additives not in the silos. Dust emissions would be controlled by, among other measures, watering the area and by sealing the silos and transferring the fine particulates pneumatically between the silos and the mixers.

Should groundwater be encountered during excavation or drilling for foundations, it would be discharged to the surface or pumped into a tank and disposed of at an off-site disposal facility in accordance with applicable laws.

3.5.5.1.4 Delivery and Assembly

TSP and LWS H-frame poles and associated hardware would generally be delivered to each temporary work pad overland by truck. In some locations where existing access or spur roads are not amenable to overland delivery, TSP or LWS pole sections and associated hardware may be delivered to a temporary work pad by helicopter. Depending on conditions at the time of construction, the top sections may come pre-configured (i.e., assembled at a staging area), may be configured on the ground, or configured after pole installation with the necessary cross arms, insulators, and wire stringing hardware.

3.5.5.1.5 Pole Topping

No poles will be topped as part of the EPL Project.

3.5.5.2 Above-ground and Underground Conductor/Cable

3.5.5.2.1 Process-Based Description

The process that may be employed for the removal and installation of above-ground conductor and OHGW would be the same in all segments. Wire stringing activities would be performed in accordance with SCE common practices and similar to process methods detailed in the Institute of Electrical and Electronics Engineers Standard 524-2003, Guide to the Installation of Overhead Transmission Line

Conductors. The activities listed below may be performed in an order different than presented, and may be performed more than once along a given Segment depending upon the construction sequencing chosen.

Above-ground conductor and OHGW would be removed and conductor and OHGW is planned to be installed in the following steps:

1. Planning – Develop a wire stringing plan to determine the sequence of wire pulls and the locations of pull-and-tension/stringing sites.
2. Establish pull-and-tension/stringing sites – Pull-and-tension/stringing sites would be established and wire pulling equipment would be set-up within the sites. At one end of a wire pull, a puller would be set-up; at the other end of a wire pull, a tensioner with wire reel stand truck would be set-up.
3. Guard structures would be installed at all electrical structures and roads where required.
4. De-energize circuit – The transmission circuit would be de-energized.
5. Stringing sheaves (rollers or travelers) would be installed on the existing structures where the de-energized circuit is located.
6. The existing conductor and OHGW would be transferred to the stringing sheaves.
7. Roads would be closed, and traffic would be stopped where necessary.
8. Safety devices such as traveling grounds and radio-equipped public safety roving vehicles and linemen would be placed along the wire pull. Guard structures would be installed at all electrical structures and roads where required.
9. The existing conductor and OHGW would be pulled through the stringing sheaves and spooled on wire reels sited in a pull-and-tension/stringing site. A conductor pulling rope/cable attached to the end of the conductor would allow tension on the conductor or OHGW being removed to be maintained. Following the removal of the conductor or OHGW, the rope/cable would be removed from the old conductor or OHGW and would be used to pull in the new conductor or OHGW.
10. The new conductor would be energized.
11. Roads would be opened, and traffic flow allowed to resume.
12. Restoration – Areas would be restored/revegetated as appropriate.

3.5.5.2.2 Conductor and Overhead Groundwire Installation: Activity Locations

Conductor and OHGW installation activities would occur in those portions of the EPL Project alignment so-identified in Appendix A. Conductor and OHGW stringing and installation activities would occur at every pull-and-tension/stringing site and at every existing structure located in those areas identified for conductor replacement that would be removed. Figure 3.5-2 provides a diagram of a typical pull-and-tension/stringing site.

3.5.5.2.3 Conductor and Overhead Groundwire Installation: Diagram of the General Sequencing and Equipment Used

A diagram of the general equipment that would be used during the conductor and OHGW installation process is presented in Figure 3.5-2.

3.5.5.2.4 Conductor/Cable Splicing Process

3.5.5.2.4.1 Conductor

Conductor will be spliced using compression splices applied per manufacturer's instructions and specifications.

3.5.5.2.4.2 OHGW Installation

OHGW will be spliced using compression splices applied per manufacturer's instructions and specifications.

3.5.5.2.5 Conductor and Overhead Groundwire Installation: Pull-and-Tension/Stringing Site Locations

The average distance between pull-and-tension/stringing sites along the EPL Project alignment is 3.2 miles, with distances between any two pull-and-tension/stringing sites ranging from approximately 1.3 miles to approximately 5 miles. The dimensions of each pull-and-tension site/stringing site would be approximately 150 feet by 400 feet. Pull-and-tension/stringing sites may be located at existing dead-end structures, at points of inflection in the transmission line alignment, and according to the capacity of conductor reels. Generally, pull-and-tension/stringing sites would be in direct line with the direction of the overhead conductors being installed and established at a distance equal to approximately three times the height of the adjacent structure. The equipment that would be required at pull-and-tension/stringing sites includes a puller set-up positioned in a pull-and-tension/stringing site located at one end of a wire pull, and a tensioner set-up with wire reel stand truck positioned in a pull-and-tension/stringing site at the other end of a wire pull. The pull-and-tension/stringing sites used for conductor installation would also be used for OHGW installation.

3.5.5.2.6 Conductor and Overhead Groundwire Installation: Underground Installation

No conductor or OHGW would be installed underground under the EPL Project.

3.5.5.2.7 Conductor and Overhead Groundwire Installation: Safety Precautions

Where conductor and OHGW are to be removed or installed across a public roadway or a railroad, SCE would install guard structures on either side of the roadway or railroad, or would make alternate arrangements as described in Section 3.5.5.4 below. Guard structures would be installed at all electrical structures and roads where required.

3.5.5.3 Telecommunications

No telecommunications equipment would be installed under the EPL Project.

3.5.5.4 Guard Structures

Guard structures are temporary facilities that would typically be installed at transportation (roadways, railroads, etc.), flood control, and utility crossings prior to conductor or OHGW removal or installation activities. Guard structures would be installed at all electrical structures and roads where required. These structures are designed to stop the movement of a conductor or OHGW should it momentarily drop below a conventional stringing height. SCE estimates that guard structures may need to be installed at six locations along the EPL Project alignment.

Typical guard structures are standard wood poles 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 poles would be required on either side of a crossing. Guard structure wood poles would be installed using a direct-buried approach. Direct-buried wood poles would require a hole to be excavated using either an auger or a backhoe, or with the use of hydraulic or pneumatic equipment (such as jackhammers, drills, etc.). In some locations, corrugated steel or plastic forms may be placed to stabilize the excavation walls prior to installation of the pole.

Following excavation of the pole hole, the wood pole would then 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 the interstitial space between the wall of the excavated or augured hole and the pole.

In some cases, the wood poles could be substituted with the use of specifically equipped boom trucks or, at highway crossings, temporary netting could be installed if required. The guard structures would be removed after the conductor is secured into place.

For crossings of highways, SCE would work closely with the applicable agency to secure the necessary permits to string conductor over the applicable infrastructure.

3.5.5.5 Blasting

Blasting is not anticipated to be required to construct the EPL Project.

3.5.6 Transmission Line Construction (Below Ground)

No transmission infrastructure would be installed below ground as part of the EPL Project.

3.5.6.1 Trenching

No below ground transmission line construction is included under the EPL Project.

3.5.6.2 Trenchless Techniques (Microtunnel, Jack and Bore, Horizontal Directional Drilling)

No below ground transmission line construction is included under the EPL Project.

3.5.7 Substation, Switching Stations, Gas Compressor Stations

No gas compressor stations are included as part of the EPL Project.

3.5.7.1 Installation or Facility Modification

3.5.7.1.1 Transformers/Electric Components

At the existing Pisgah Switchyard and Cima Substation, existing conductor would be removed from the existing transmission racks, and new conductor would be connected to the existing racks. At Cima Substation, the tap attachments will be replaced to accommodate the new ACCC conductor. At Pisgah Switchyard, the dead-end hardware on the existing rack will be replaced to accommodate the new ACCC conductor.

3.5.7.1.2 Gas Components

No gas components would be installed or modified under the EPL Project.

3.5.7.1.3 Control and Operation Buildings

No control and operation buildings would be constructed or modified under the EPL Project.

3.5.7.1.4 Driveways

No driveways would be constructed or modified under the EPL Project.

3.5.7.1.5 Fences

No fences would be constructed or modified under the EPL Project.

3.5.7.1.6 Gates

No gates would be installed or modified under the EPL Project.

3.5.7.1.7 Communication Systems (SCADA)

No communication systems are included under the EPL Project.

3.5.7.1.8 Grounding Systems

No grounding systems would be installed or modified under the EPL Project; the OHGW would be connected to the existing ground grids at Pisgah Switchyard and Cima Substation.

3.5.7.2 Civil Works

No slope stabilization, drainage, retention basins, or spill containment facilities would be constructed at any substation under the EPL Project.

3.5.8 Gas Pipelines

No gas pipelines are included as part of the EPL Project.

3.5.9 Gas Storage Facilities

No gas storage facilities are included as part of the EPL Project.

3.5.10 Public Safety and Traffic Control

3.5.10.1 Public Safety

3.5.10.1.1 Public Safety Considerations

The EPL Project will pose few public safety considerations. This is a function of the routine construction activities proposed under the EPL Project; that much of the EPL Project alignment traverses lands that are open space; and that the population density along the EPL Project is low and generally non-urbanized.

Public safety considerations during construction could include: ramifications from spills of fuels or hazardous materials; work being performed along public roadways; movement of additional construction equipment along public roadways; use of helicopters; ramifications from construction-sourced wildfire; and direct effects from deenergized conductor being dropped on personal property during wire stringing activities.

A number of measures will be implemented during the EPL Project to address these public safety considerations; these are described throughout Chapter 5, and they include, for example:

- Development and implementation of one or more SWPPPs to ensure, in part, 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 Hazardous Materials and Waste Management Plan (HMWMP) to ensure that materials are managed according to applicable regulations (see Appendix M)
- Implementation of 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
- Provision of alternate pedestrian routing during construction activities 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
- Development and implementation of a Helicopter Use and Safety Plan to address use of helicopters in areas where the public are present (Appendix O)
- Consultation with the FAA regarding helicopter flight plans that will take place during construction. This consultation will include, but not be limited to:
  - Providing locations of helicopter construction staging and work areas.
  - Establishing designated flight corridors between staging and work areas.
  - Means to ensure external load operations avoid occupied structures and roadways.
  - Locations of traffic control where external load operations will cross public roadways.
  - Locations where Congested Area Plans may be required for filing with the FAA.
  - Identifying any flight restrictions recommended/required by the FAA.
- Development and implementation of a Fire Prevention and Emergency Response Plan to mitigate the risk of construction activities triggering a wildfire (Appendix G)
- Installation of guard structures or use of specially equipped trucks during wire stringing activities where public roadways are crossed by the project alignment. Guard structures would be installed at all electrical structures and roads where required

3.5.10.1.2 Procedures for Managing Work Sites in Urban Areas

Approximately 9 miles of Segments 1 and 2 is located within the Victorville-Hesperia, CA Urbanized Area; the public safety practices and measures employed across the EPL Project alignment will be employed in this urban area.

3.5.10.1.3 Public Access Restrictions

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

3.5.10.2 Traffic Control

3.5.10.2.1 Traffic Control Procedures

During construction, SCE would follow its standard safety practices, including installing appropriate traffic control devices between work zones and transportation facilities, posting adequate signs, and using proper construction techniques. SCE will 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.

3.5.10.2.2 Location, Process, and Timing for Closing Sidewalks, Lanes, Roads, Trails, Paths, or Driveways

The locations, process, and timing for the closing of sidewalks, lanes, roads, trails, paths, or driveways to manage public access is presented in Section 5.17, Transportation. Overhead cable removal and installation activities would require the temporary closures or 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 the individual landowners.

The EPL Project alignment crosses recreational paths and trails; the locations of these paths and trails are presented in Section 5.16. SCE would coordinate with the relevant jurisdiction to coordinate the temporary closure of paths and trails if necessary.

3.5.10.2.3 Temporary Detour Routes

No temporary detour routes or locations would be necessary to facilitate construction of the EPL Project.

3.5.10.2.4 Traffic Control Plan

If, during construction of the EPL Project, SCE or its construction contractor must obtain a ministerial encroachment permit, and if the application for such a permit requires a traffic control plan or similar such document, a traffic control plan or such document will be developed at that time.

3.5.10.3 Security

Staging areas, as described above, would be fenced and may be illuminated for security purposes. Security personnel may either patrol the staging areas periodically or may be stationed at staging areas. Security at staging areas would be emplaced for the duration that a given staging area is in-use. Security measures will not be employed at construction work areas.

3.5.10.4 Livestock

No livestock fencing or guards will be installed as part of the EPL Project to prevent livestock from entering project areas.

3.5.11 Dust, Erosion, and Runoff Controls

3.5.11.1 Dust

During construction, migration of fugitive dust from the construction sites would be limited by control measures set forth by the Mojave Desert Air Quality Management District in California and by the Clark County (NV) Department of Environment and Sustainability. As applicable, SCE would, at the direction of the CPUC, implement the following dust control measures as contained in the Air Quality-related CPUC Draft Environmental Measure:

- All exposed surfaces with the potential of dust-generating shall 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 shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- Cover all haul trucks entering/leaving the site and trim their loads as necessary.
- Use wet power vacuum street sweepers 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. The use of dry power sweeping is prohibited.
- Apply gravel or non-toxic soil stabilizers on all unpaved parking areas and staging areas.
- Water and/or cover soil stockpiles daily.
- All vehicle speeds shall be limited to 15 miles per hour (mph) or less on unpaved areas.
- Implement dust monitoring in compliance with the standards of the local air district.
- Halt construction during any periods when wind speeds are in excess of 50 mph.

3.5.11.2 Erosion

The following BMPs may be implemented to manage erosion:

- EC-1, Scheduling. The construction contractor shall reduce the discharge of pollutants to storm drain facilities caused by construction activities by scheduling activities in a manner that will limit exposure of disturbed soils to wind, rain, non-storm water run-off and storm water run-on and run-off.
- EC-2, Preservation of Existing Vegetation. The construction contractor will protect and preserve existing vegetation in work areas as long as practicable before disturbing them. The construction contractor shall also preserve and protect existing vegetation adjacent to work areas. This protection and preservation of such vegetation will serve to control erosion and filter out sediment.
- EC-3, Hydraulic Mulch. The construction contractor will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity.
- EC-4, Hydroseeding. The construction contractor will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity.
- EC-5, Soil Binders. The construction contractor will implement this BMP, if necessary, to disturbed soil areas requiring short term temporary protection. Because soil binders can often be incorporated into the work, they are a good alternative to mulches in areas where grading activities will soon resume. Soil binders are also suitable for use on stockpiles. Non-toxic soil binders, equivalent or better in efficiencies than the CARB-approved soil binders, shall be applied per the manufacturer recommendations to active unpaved roadways, unpaved staging areas, and unpaved parking area(s) throughout construction to reduce fugitive dust emissions. Soil binders will be non-toxic and MSDS will be present at site.
- EC-6, Straw Mulch. The construction contractor will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity. Straw mulch will be certified weed free.

- EC-7, Geotextiles and Mats. The construction contractor will implement one or more of these measures to stabilize disturbed soil areas (stockpiles, slopes, embankments, conveyances, etc.) and protect these soils from erosion by rain, wind or storm water run-on and run-off where applicable to reduce soil erosion from wind and rain. Plastic micro-filament matting will not be used, only natural fiber mats to prevent trapping of birds and reptiles.
- EC-8, Wood Mulch. The construction contractor will implement this BMP, if necessary, to disturbed soil areas requiring temporary protection until permanent stabilization is established, and disturbed areas that will be re-disturbed following an extended period of inactivity. Wood mulch shall be untreated.
- EC-15, Soil Preparation and Roughening. The construction contractor will implement this BMP to assess and prepare surface soils for other BMP installation. This can include soil testing (for seed base, soil characteristics, or nutrients), as well as roughening surface soils by mechanical methods (including sheepsfoot rolling, track walking, scarifying, stair stepping, and imprinting) to prepare soil for additional BMPs, or to break up sheet flow. Soil preparation can also involve tilling topsoil to prepare a seed bed and/or incorporation of soil amendments, to enhance vegetative establishment.
- EC-16, Non-Vegetative Stabilization. The construction contractor will utilize non-vegetative stabilization methods for temporary or permanent stabilization of areas prone to erosion; this would be used only where vegetative options are not feasible.
- WE-1, Wind Erosion Control. The construction contractor will apply water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

3.5.11.3 Runoff

The following BMPs may be implemented to manage storm water runoff and sediment:

- SE-4, Check Dam. The construction contractor will implement this BMP to reduce scour and channel erosion by reducing flow velocity and increasing residence time within the channel, allowing sediment to settle.
- SE-5, Fiber Rolls. The construction contractor will implement this BMP to eliminate the erosion of slopes. The rolls are widely used to prevent sediment from running off site.
- SE-6, Gravel Bag Berm. The construction contractor will implement this BMP to eliminate erosion of slopes. This BMP is particularly useful with steep slopes and a high potential for runoff.
- SE-7, Street Sweeping and Vacuuming. The construction contractor will implement this BMP when soils and miscellaneous debris are tracked from the construction site to areas outside the site. This measure prevents sediments from reaching the drop inlets and stormwater system, and prevents unsafe driving conditions.
- SE-10, Storm Drain Inlet Protection. The construction contractor will implement this BMP if any runoff from the construction site drains directly into a drop inlet. The protection will prevent debris and soils from clogging drop inlets and storm drain systems.
- TC-1, Stabilized Construction. The construction contractor will implement this BMP to remove all construction site soil and miscellaneous debris prior to leaving the site. The BMP will depend on the soil, site, and type of surface outside the yard.

- TC-2, Stabilized Construction Roadway. A stabilized construction roadway is a temporary access road. It is designed for the control of dust and erosion created by vehicular tracking.
- WM-3, Stockpile Management. The construction contractor will implement this BMP whenever there are stockpiles of asphalt, concrete, wood, or soil. This includes temporary stockpiles and stockpiles existing for periods longer than one working day.

3.5.12 Water Use and Dewatering

3.5.12.1 Water Use

Construction of the EPL Project is estimated to require approximately 450 acre-feet of water; this water would be consumed over the 23-month construction duration. Water would be used for dust control, for restoration activities, and in the construction of TSP foundations.

SCE would preferentially utilize recycled or reclaimed water if and when such water is available; at this time, the volume of recycled or reclaimed water available that would be available for purchase is unknown. However, if the full volume of water needed for the EPL Project is available for purchase at competitive rates, SCE would solely utilize recycled or reclaimed water for the EPL Project.

If recycled or reclaimed water is not available in sufficient quantities to supply the entirety of the EPL Project's water demand, SCE would purchase water from commercial purveyors to supplement the volumes of recycled or reclaimed water available. Given the nature of water resources in the EPL Project area, water purchased from commercial purveyors would be sourced from natural or stored groundwater resources.

3.5.12.2 Dewatering

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

3.5.13 Hazardous Materials and Management

3.5.13.1 Hazardous Materials

3.5.13.1.1 Types, Uses, and Volumes

Construction of the EPL Project 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 presented in Table 3.5-6.

Table 3.5-6. Types, Uses and Volumes of Hazardous Materials

Hazardous Material Type	Use	Approximate Volume (gallons)
Diesel	Engine fuel	See Table 5.6-1
Gasoline	Engine fuel	See Table 5.6-1
Lubricants/Hydraulic Fluids	Engine and equipment lubrication/ Powering hydraulic equipment	8,503
Miscellaneous Construction Fluids (solvents, etc.)	Cleaning/lubricating hardware, etc.	425

Notes:
Diesel and gasoline volumes developed through California Emissions Estimator Model® (CalEEMod)
Lubricants/hydraulic fluids consumption assumed at approximately 5 percent of non-aviation fuel consumption.
Miscellaneous construction fluid volumes assumed at approximately 5 percent of Lubricants/Hydraulic Fluids volume.

3.5.13.1.2 Herbicides or Pesticides

Herbicides or pesticides may be used during construction as presented in the Habitat Restoration Plan (Appendix T).

3.5.13.1.3 Pre-Existing Hazardous Waste

If pre-existing hazardous waste is encountered during construction, it would be removed, managed, and disposed as described in the HMWMP or as described in the Soil Management Plan (Appendix N).

3.5.13.2 Hazardous Materials Management

3.5.13.2.1 BMPs: Transporting, Storing, and Handling

The following BMPs would be followed for transporting, storing, and handling hazardous materials:

- NS-9, Vehicle and Equipment Fueling. The construction contractor will implement this BMP when fueling of equipment occurs on site. The equipment should be monitored before and after fueling. This will prevent any fuel from reaching the construction site soils and possible groundwater. Diapers, pans or tarps will be used under fueling areas. Spill kits will be onsite at fueling locations. Fueling areas will be located at least 100 feet from drainages.
- WM-1, Material Delivery and Storage. The construction contractor will implement this BMP to prevent, reduce, or eliminate the discharge of pollutants from material delivery and storage to the stormwater system or watercourses by minimizing the storage of hazardous materials onsite, storing materials in watertight containers and/or a completely enclosed designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.
- WM-2, Material Use. The construction contractor will implement this BMP to prevent or reduce the discharge of pollutants to the storm drain system or watercourses from material use by using alternative products, minimizing hazardous material use onsite, and training employees and subcontractors.
- WM-4, Spill Prevention and Control. The construction contractor will implement this BMP to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

3.5.13.2.2 BMPs: Incidental Leak or Spill

The following BMPs would be followed in the event of an incidental leak or spill of hazardous materials:

- WM-4, Spill Prevention and Control. The construction contractor will implement this BMP to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.
- WM-6, Hazardous Waste Management. The construction contractor will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.
- WM-7, Contaminated Soil Management. The construction contractor will implement this BMP to prevent or reduce the discharge of pollutants to stormwater from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

3.5.13.2.3 Hazardous Substance Control and Emergency Response Plan / Hazardous Waste and Spill Prevention Plan

Hazardous materials management during construction of the EPL Project would be guided by the HMWMP as well as measures identified in the Soil Management Plan (Appendix N).

3.5.14 Waste Generation and Management

3.5.14.1 Solid Waste

3.5.14.1.1 Solid Waste Streams

Construction of the EPL Project would result in generation of various solid wastes including metals (from the removed conductor, OHGW, and associated hardware), 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).

3.5.14.1.2 Solid Waste Management

Solid waste generated during construction of the EPL Project 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. No treatment of solid wastes would occur at any EPL Project construction work area or staging area. Solid wastes would be transported off-site using SCE-approved transporters and disposed of at one or more SCE-approved disposal facilities or at an industrial-scale recycling facility. Organic waste would be removed from the EPL Project alignment and disposed off-site.

3.5.14.1.3 Estimated Total Volumes

SCE takes the construction of the EPL Project to be a single construction activity. Given the physical characteristics of the solid waste to be generated by the EPL Project, estimates of mass and not volume are presented throughout this PEA document. SCE estimates that the entire mass of the removed conductor and OHGW would be recycled. SCE further estimates that, at a minimum, three-quarters of the mass of hardware and fittings and miscellaneous solid waste would be recycled.

Approximately 1,236 tons of metal, consisting of 937 tons of metals from transmission conductor and 299 tons of OHGW, would be removed as part of the EPL Project. The mass of miscellaneous solid waste (such as pallets, packaging, etc.) would be approximately 47 tons.[15]

3.5.14.1.4 Recycling Potential

Given the very large mass and recyclable content of the waste streams that would be generated during construction of the EPL Project, it is anticipated that the removed conductor, OHGW, and steel hardware and fittings would be transported to industrial-scale recycling facilities.

3.5.14.1.5 Locations of Appropriate Disposal and Recycling Facilities

The final disposition site of recyclable materials is not known at this time as the selection of such site may depend upon market conditions at the time of construction. Appropriate disposal facilities for non-metallic recyclable materials and non-recyclable materials are discussed in Section 5.19.1.5.

3.5.14.2 Liquid Waste

3.5.14.2.1 Liquid Waste Streams

Sanitary waste is the only liquid waste planned to be generated during construction of the EPL Project. No other liquid wastes (e.g., drilling muds, contaminated waters) are expected to be generated by the EPL Project.

3.5.14.2.2 Liquid Waste Management

Portable toilets would be provided for on-site use by construction workers; sanitary waste would be collected, contained, and stored in these portable toilets prior to disposal by a licensed sanitation contractor. Sanitary waste would be treated at a wastewater treatment plant.

3.5.14.2.3 Estimated Volumes

The volumes of liquid waste generated across the EPL Project alignment would be commensurate with the number of workers on site during construction (i.e., a maximum of approximately 72 workers). It is estimated that approximately 21,000 gallons of liquid waste would be generated during construction of the EPL Project.[16]

3.5.14.2.4 Locations of Appropriate Disposal Facilities

It is anticipated that sanitary waste would be transported to, and treated at, one of the wastewater treatment facilities located in and near Victorville and Barstow.

3.5.14.3 Hazardous Waste

3.5.14.3.1 Potentially Hazardous Waste Streams and Management

Only small volumes of hazardous waste are anticipated to be generated during construction of the EPL Project. These hazardous wastes would generally include empty fuel, lubricant, or cleaning solvent

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15 This assumes a mass of 939 pounds/1,000 feet for conductor; 450 pounds/1,000 feet for OHGW; and 100 pounds of hardware and fittings and 50 pounds of miscellaneous solid waste per existing structure on which new conductor would be installed or where insulator assemblies will be modified.

16 Assume 2 liters (0.52 gallons) per construction worker per day; 72 workers; 6-day workweek; 23 month construction schedule.

containers and materials contaminated with fuels, lubricants, or cleaning solvents (rags, drip pans, etc.). A low potential exists for contaminated soil or groundwater to be encountered during excavation or other ground-disturbing activities.

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 the EPL Project-specific HMWMP (see Section 3.13). The plan includes safety information regarding the transport, use, and disposal of hazardous waste. In addition, all transport, use, and disposal of hazardous waste would be in compliance with applicable laws, rules, and regulations.

To address contaminated soil or groundwater, SCE would implement a Soil Management Plan (see Section 3.13). The Plan directs that, if encountered, contaminated soil would be segregated, sampled, and tested to determine appropriate disposal options. 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 (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 of in accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public.

3.5.14.3.2 Volumes of Hazardous Waste

Only small volumes of hazardous waste are anticipated to be generated during construction of the EPL Project.

3.5.14.3.3 Locations of Appropriate Disposal Facilities

The final disposition location of hazardous wastes would be determined by the construction contractor immediately prior to or during construction to SCE-approved facility. SCE-approved facilities are listed in the EPL Project-specific HMWMP (Appendix M).

3.5.14.3.4 Excavated Material

Materials excavated during installation of new transmission inter-set structures would primarily be placed adjacent to the new inter-set structures within the permanent disturbance area associated with each new inter-set structure or placed on other areas that are currently- and permanently-disturbed (e.g., access or spur roads). In rare instances, excavated materials may be disposed off-site at an appropriate facility.

3.5.15 Fire Prevention and Response

3.5.15.1 Fire Prevention and Response Procedures

During construction, SCE would implement standard fire prevention protocols during construction activities and comply with applicable laws and regulations, will implement the CPUC Draft Environment Measure: Construction Fire Prevention Plan, and will implement the EPL Project Fire Prevention and Emergency Response Plan (see Section 3.13 and Appendix G).

Construction areas would be grubbed/trimmed of vegetation before the staging of equipment, and in such areas where overland travel may occur, dry vegetation would also be trimmed; such activities 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 construction of the EPL Project, additional measures as described in the EPL Project Fire Prevention and Emergency Response

Plan 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.

3.5.15.2 Fire Breaks

No new permanent fire breaks (i.e., areas cleared of vegetation) would be developed under the EPL Project. Areas around new structures would be maintained per the applicable standards in CPUC GO 128.

No areas would be cleared of vegetation solely for the purposes of creating a temporary fire break. In areas where hot work (e.g., welding) would be performed, or where equipment would be staged and operated where hot surfaces (e.g., exhaust systems) could come in contact with extant vegetation, such vegetation would be cleared or trimmed. This vegetation clearing or trimming would be contained within the construction work area identified for that given location.

3.6 Construction Workforce, Equipment, Traffic, and Schedule

3.6.1 Construction Workforce

3.6.1.1 Number of Construction Crew Members

SCE anticipates a total of approximately 72 construction personnel working on any given day. This is based on the crew deployment detailed in Section 3.6.1.2 below and on an assumption that three staging yards would be operational at any given time.

3.6.1.2 Crew Deployment

SCE anticipates that two reconductoring crews and a single inter-set installation/insulator modification crew would work concurrently. The estimated deployment and number of crew members would vary depending on factors such as material availability, resource availability, and construction scheduling. In general, construction efforts would occur in accordance with accepted construction industry standards. Construction would be performed by SCE construction crews and/or contractors. If SCE construction crews are used, they typically would be based at SCE's local facilities, (e.g., service centers, substations, etc.) or temporary staging areas set up for the EPL Project. Contractor construction personnel would be managed by SCE construction management personnel and based out of the contractor's existing yard or temporary staging areas set up for the EPL Project.

3.6.1.3 Activities to be Undertaken

The different types of activities to be undertaken during construction, the number of crew members for each activity, and number and types of equipment expected to be used for each activity are presented in Table 3.6-1.

3.6.2 Construction Equipment

A tabular list of the types of equipment expected to be used during construction of the EPL Project, including the horsepower of each type of equipment, is presented in Table 3.6-1. 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.

3.6.3 Construction Traffic

3.6.3.1 Transportation of Crews and Equipment

Construction equipment would be transported to and from construction work areas along the EPL 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 EPL Project alignment in construction vehicles (pick-up trucks or other self-propelled vehicles) or by helicopter.

Along the EPL Project alignment, it is likely that many pieces of construction equipment would be left at work areas overnight and on off-days (holidays, etc.) rather than being driven to and from construction work areas each day.

3.6.3.2 Vehicle Types, Numbers, and Hours of Operation

Information on the vehicle type, number of vehicles, and estimated hours of operation per day, week, and month for each construction activity are presented in Table 3.6-1.

3.6.3.3 Vehicle Miles Traveled (VMT)

The estimated number of vehicle trips and VMT for each construction activity is presented in Section 5.17.

Table 3.6-1. Construction Equipment and Workforce

Work Activity				Activity Production			
Primary Equipment Description	**Estimated Equipment Horse-Power**	**Probable Fuel Type**	**Primary Equipment Quantity**	**Estimated Workforce**	**Estimated Schedule (Days)**	**Duration of Use (Hrs/Day)**	**Estimated Production Per Day**
Survey				**4**	**Duration Of Project**		
1-Ton Truck, 4x4	300	Diesel	2	—	Duration of Project	10	N/A
Staging Areas				**5**	**Duration Of Project**		
1-Ton Truck, 4x4	300	Diesel	1	—	Duration of Project	4	N/A
R/T Forklift	350	Diesel	1			5	
Boom/Crane Truck	350	Diesel	1			5	
Generator	45	Diesel	1			10	
Water Truck	300	Diesel	2			10	
Truck, Semi-Tractor	500	Diesel	1			6	
Road Work				**6**	**6**		**12 Spur Roads**
1-Ton Truck, 4x4	300	Diesel	2	—	6	10	2 Spur Roads per Day
Backhoe/Front Loader	350	Diesel	1		6	10	
Track Type Dozer	350	Diesel	1		6	10	
Motor Grader	350	Diesel	1		6	10	
Water Truck	300	Diesel	2		6	10	
Drum Type Compactor	250	Diesel	1		6	10	
Excavator	300	Diesel	1		6	10	
Lowboy Truck/Trailer	500	Diesel	1		6	10	
Install TSP H-frame Foundations				**5**	**24**		**12 TSP H-frames**
3/4-Ton Truck, 4x4	275	Gas	2	—	24	5	0.5 TSP
Boom/Crane Truck	350	Diesel	1		24	7	
Backhoe/Front Loader	200	Diesel	1		24	10	
Auger Truck	500	Diesel	1		12	10	
Water Truck	350	Diesel	1		24	10	
Dump Truck	350	Diesel	1		24	10	
Concrete Mixer Truck	425	Diesel	2		12	6	
TSP H-frame Haul				**5**	**12**		**12 TSP H-frames**
3/4-Ton Truck, 4x4	275	Gas	2	—	12	8	1 TSP H-frame
Boom/Crane Truck	350	Diesel	1		12	8	
Flat Bed Pole Truck	400	Diesel	2		12	10	
Water Truck	350	Diesel	1		12	10	
TSP H-frame Assembly				**5**	**24**		**12 TSP H-frames**
3/4-Ton Truck, 4x4	275	Gas	2	—	24	6	0.5 TSP H-frame

Table 3.6-1. Construction Equipment and Workforce

Work Activity				Activity Production			
Primary Equipment Description	**Estimated Equipment Horse-Power**	**Probable Fuel Type**	**Primary Equipment Quantity**	**Estimated Workforce**	**Estimated Schedule (Days)**	**Duration of Use (Hrs/Day)**	**Estimated Production Per Day**
1-Ton Truck, 4x4	300	Diesel	2		24	6	
Water Truck	350	Diesel	1		24	10	
Compressor Trailer	60	Diesel	1		24	6	
Boom/Crane Truck	350	Diesel	1		24	7	
TSP H-frame Erection				**5**	**24**		**12 TSP H-frames**
3/4-Ton Truck, 4x4	275	Gas	1		24	6	
1-Ton Truck, 4x4	300	Diesel	1		24	6	
Water Truck	350	Diesel	1		24	10	
Compressor Trailer	60	Diesel	1		24	6	0.5 TSP H-frame
R/T Crane	350	Diesel	1	—	24	7	
Jet A Fuel Truck	300	Diesel	1		8	6	
Helicopter Support Truck	300	Diesel	1		8	6	
Medium-duty Helicopter		Jet A	1		8	4	
Install/Remove Conductor/OHGW				**20**	**403**		**121 Miles**
3/4-Ton Truck, 4x4	275	Gas	1		403	10	
1-Ton Truck, 4x4	300	Diesel	2		403	10	
Manlift/Bucket Truck	250	Diesel	1		403	10	
Boom/Crane Truck	350	Diesel	1		403	10	
Dump Truck	350	Diesel	1		267	10	
Wire Truck/Trailer	350	Diesel	2		203	10	
Sock Line Puller	300	Diesel	1		103	10	
Bull Wheel Puller	350	Diesel	1		203	10	
Hydraulic Rewind Puller	350	Diesel	1		403	10	
Static Truck/ Tensioner	350	Diesel	1	—	403	10	0.3 Mile/day
Backhoe/Front Loader	125	Diesel	1		103	8	
Truck, Semi-Tractor	400	Diesel	2		403	10	
Lowboy Truck/Trailer	450	Diesel	2		403	10	
Water Truck	300	Diesel	1		403	10	
Jet A Fuel Truck	300	Diesel	1		203	4	
Helicopter Support Truck	300	Diesel	1		203	7	
Light Helicopter		Jet A	1		203	7	
Conductor Splicing Rig	350	Diesel	1		103	10	
Fiber Splicing Lab	300	Diesel	1		103	10	
Install/Remove Guard Structures				**5**	**2**		**6 Structures**
3/4-Ton Truck, 4x4	275	Gas	2		2	8	5 structures/day
1-Ton Truck, 4x4	300	Diesel	2	—	2	8	

Table 3.6-1. Construction Equipment and Workforce

Work Activity				Activity Production			
Primary Equipment Description	**Estimated Equipment Horse-Power**	**Probable Fuel Type**	**Primary Equipment Quantity**	**Estimated Workforce**	**Estimated Schedule (Days)**	**Duration of Use (Hrs/Day)**	**Estimated Production Per Day**
Compressor Trailer	60	Diesel	2		2	7	
Backhoe/Front Loader	125	Diesel	1		2	10	
Water Truck	300	Diesel	1		2	5	
Manlift/Bucket Truck	250	Diesel	1		2	8	
Boom/Crane Truck	350	Diesel	1		2	10	
Auger Truck	500	Diesel	1		2	8	
Extendable Flat Bed Pole Truck	400	Diesel	1		2	8	
Modify Existing Structures				**5**	**162**		**81 Structures**
3/4-Ton Truck, 4x4	275	Gas	1		162	10	
1-Ton Truck, 4x4	300	Diesel	1		162	10	
Manlift/Bucket Truck	250	Diesel	2	—	162	10	
Boom/Crane Truck	350	Diesel	1		162	10	0.5 structures/day
Compressor Trailer	60	Diesel	1		162	10	
Jet A Fuel Truck	300	Diesel	1		11	7	
Helicopter Support Truck	300	Diesel	1		11	7	
Light Helicopter		Jet A	1		11	7	
Restoration				**7**	**180**		**360 Miles**
1-Ton Truck, 4x4	300	Diesel	2		180	4	
Backhoe/Front Loader	125	Diesel	1		180	4	
Motor Grader	250	Diesel	1		180	6	2 miles/day
Water Truck	300	Diesel	1	—	180	8	
Drum Type Compactor	100	Diesel	1		180	4	
Lowboy Truck/Trailer	450	Diesel	1		180	4	

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3.6.4 Construction Schedule

3.6.4.1 Proposed Construction Schedule

SCE anticipates that construction of the EPL Project would take approximately 23 months.[17] Construction would commence following CPUC approval, final engineering, procurement activities, land acquisitions, and receipt of all applicable permits.

Table 3.6-2. Proposed Construction Schedule

Project Activity	Approximate Duration (months)	Approximate Start Date
CPCN	23	April 2023
Final Engineering	7	April 2024
Right-of-Way/Property Acquisition	19	January 2025
Acquisition of Required Permits	15	April 2024
Pre-Construction Activities	7	May 2025
Transmission Line Construction	23	December 2025
Cleanup	8	February 2027
Project Operational	N/A	October 2027

The proposed construction schedule (e.g., month and year) for each EPL Project activity is presented in Table 3.6-2.

3.6.4.2 Construction Sequencing

The potential sequencing of construction activities by segment is presented in Section 3.5.5.2; each of the work activities would be performed as described throughout Section 3.5.

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. Further, work could occur in one or more segments simultaneously.

3.6.4.3 Total Duration of Construction Activities

The total duration of each construction activity is presented in Table 3.6-1.

3.6.4.4 Seasonal Considerations

Seasonal considerations may affect SCE's ability to perform construction activities along the EPL Project alignment. These considerations include variable winter weather which could force halts to construction during rain events; construction halts during nesting bird season; species-specific disturbance restrictions; and system outage and usage considerations. SCE has taken these considerations into account to the extent that future actions outside of SCE's control can be addressed.

[17] The proposed construction schedule may exceed 23 months due to delays including but not limited to those associated with inclement weather, stoppages necessary to protect biological resources (e.g., nesting birds), and system outage considerations.

3.6.5 Work Schedule

3.6.5.1 Anticipated Work Schedule

To the extent feasible, construction activities would occur between 0700 hours and 1900 hours, 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 EPL Project alignment may be required or finished outside these hours. The dates and locations of such work is not known at this time.

3.6.5.2 Construction Durations

The duration of construction activities at a given type of work area will vary; however, approximate durations are presented below.

3.6.5.2.1 Helicopter Landing Zones and Touchdown Areas Duration

Helicopter landing zones established in staging areas would be utilized during the period when that staging area is necessary to support construction in the area. This could run from 6 months to 23 months, depending upon final construction sequencing.

A given helicopter touchdown area within a given wire pull would be used during the duration of the conductor/OHGW installation activities. A given wire pull is anticipated to have a construction duration of approximately 10 days.

3.6.5.2.2 Temporary Work Pads Duration

For all activities at a temporary work pad, the work pad would be established, including vegetation clearing/trimming as necessary; this activity would generally be performed in one day. The specific construction activities at any given temporary work pad would vary depending on the activity to be performed, as described below.

3.6.5.2.3 Conductor Removal

On any given day, crews would install sheaves and other conductor removal/installation hardware and would transfer the existing conductors into the sheaves. When all the existing structures in a given wire-pull have had sheaves and other conductor removal/installation hardware installed and the existing conductors transferred into the sheaves, the conductor would then be removed, which would require crews visiting the work pad; this would be performed in one day.

3.6.5.2.4 Tubular Steel H-Frame Installation

Installing the TSP foundations for each H-frame would generally be performed over two or three consecutive days. The concrete foundations would then be allowed to set for a period of time. Installation of the TSPs on the foundations would require several consecutive days of work at any given location.

3.6.5.2.5 Conductor Installation

Conductor installation on an existing structure would generally occur over a period of three non-consecutive days. On any given day, crews would string a pulling rope or cable through sheaves installed on existing structures and install new insulators and other fittings. On another day, the new conductor and OHGW would be pulled through the sheaves. On the third day of work at a given existing structure, crews would sag and clip-in the new conductors and OHGW. Note that the approximately three working-days on a temporary work pad at an existing structure would not be performed consecutively; these three days of work would occur over an approximate 10-day period.

3.6.5.2.6 Structure Modification

Hardware modifications on an existing structure would generally be performed over a one or two-day period.

3.6.5.2.7 Temporary Guard Structures Duration

Construction activities at any temporary guard structure location would occur on two non-consecutive days. On one day, crews would install the temporary guard structure at a given location. This guard structure would then remain in-place until reconductoring activities in that area are completed. At that time, crews would remove the temporary guard structure at the given location; this activity would occur generally in a single day.

3.6.5.2.8 Pull-and-Tension/Stringing Sites Duration

The construction duration at a pull-and-tension/stringing site located at the end of a portion of transmission line to be reconductored would be approximately 10 days. The construction duration at a pull-and-tension/stringing site not located at the end of a portion of transmission line to be reconductored would be approximately 20 days; this accounts for the durations to complete wire pulls on both sides of the pull-and-tension/stringing site. These durations do not include any site preparation work (clearing vegetation, preparing the surface, etc.) that may be needed; such site preparation work is estimated to require 2 days per pull-and-tension/stringing site.

3.6.5.2.9 Splice Sites, Conductor and Overhead Groundwire Removal Duration

The construction duration at a given splice removal site would be one day.

3.6.5.2.10 Splice Sites, Conductor and Overhead Groundwire Installation Duration

The construction duration at a given splice installation site would be approximately 20 days. This duration does not include any site preparation work (clearing vegetation, preparing the surface, etc.) that may be needed; such site preparation work is estimated to require 2 days per pull-and-tension/stringing site.

3.6.5.2.11 Staging Area Activity Duration

Work at a given staging area will occur during the period when that staging area is necessary to support construction in the area. The duration of use for a given staging area could run from 6 months to 23 months, depending upon final construction sequencing.

3.7 Post-Construction

3.7.1 Configuring and Testing

Under the EPL Project, new conductor would be connected at Pisgah Switchyard and Cima Substation. Further, relays would be reprogrammed and tested at all substations. Along the EPL Project segments, the newly-installed conductor would be cut-over per SCE standards, and the phasing would be checked.

3.7.2 Landscaping

No landscaping will be installed as part of the EPL Project.

3.7.3 Demobilization and Site Restoration

3.7.3.1 Demobilization

Demobilization activities would vary for staging areas and construction work areas. For construction work areas, where no stationary equipment or materials would be located and where no intensive surface

preparation occurred, mobile equipment, any and all construction-related materials (packaging, trash, etc.), and construction-related temporary BMPs would be removed if they are not necessary for planned restoration work. The construction work area would then be subject to restoration and final stabilization as described below.

At staging areas, all stationary equipment (office trailers, generators, etc.) and remaining construction-related material would be removed, as would all mobile equipment not needed for demobilization of the staging area. The staging area would then be returned to its pre-construction condition or would be subject to restoration as described below.

3.7.3.2 Site Restoration

Site restoration activities would vary across the EPL Project alignment. Site restoration activities would be guided by federal, state, and local requirements and by the conditions attached to project approvals from federal and state regulators. These requirements and conditions would be reflected in the SWPPP(s), in the Habitat Restoration Plan (HRP, see Section 3.13), and in the Invasive Plant Management Plan (IPMP, see Section 3.13).

Site restoration activities would generally be performed utilizing the types of equipment listed for 'Restoration' in Table 3.6-1.

3.7.3.2.1 Restoring Natural Drainage Patterns

Natural drainages, if impacted during construction of the EPL Project, would be returned to their approximate pre-existing contours upon completion of the work as described in Section 3.13. Recontouring would restore the pre-existing hydrological function to the system. Further, SCE would obtain all necessary permits and authorizations, including those from the USACE, the applicable RWQCB, and CDFW prior to construction in drainages. SCE would comply with all conditions of approval identified in permits and authorizations. Restoration of natural drainage patterns outside of drainages would be accomplished by restoring, in-place, temporarily disturbed areas to pre-project contours.

3.7.3.2.2 Recontouring Disturbed Soil

Temporarily disturbed areas would be restored in-place to their approximate pre-project contours.

3.7.3.2.3 Removing Construction Debris

Construction debris (e.g., removed conductor and OHGW, packaging materials, etc.) would be removed from construction work areas and staging areas throughout the duration of the EPL Project. Construction debris would be removed in light-duty vehicles (pick-up trucks) and heavy-duty vehicles (e.g., in dump trucks, on flatbed trailers, etc.).

3.7.3.2.4 Vegetation

As would be described in the SWPPP(s) that would be developed for the EPL Project, construction work areas and staging areas would be stabilized following construction; such stabilization could include seeding disturbed areas.

Where construction of the EPL Project disturbs sensitive habitats, restoration and/or revegetation would be performed in those areas as described in the HRRP (see Section 3.13). Additional information pertaining to the habitat restoration and/or revegetation plan(s) can be found in Section 5.4, Biological Resources.

3.7.3.2.5 Permanent and Semi-Permanent Erosion Control Measures

No permanent erosion control measures would be installed under the EPL Project. Final stabilization erosion control measures would be emplaced following demobilization and as part of site restoration activities; typical BMPs that may be installed during the restoration phase are those presented in Section 3.5.11.

3.7.3.2.6 Restoration of All Disturbed Areas and Access Roads

As would be described in the SWPPP(s) that would be developed for the EPL Project, construction work areas and staging areas would be stabilized following construction; such stabilization could include seeding disturbed areas.

Where construction of the EPL Project disturbs sensitive habitats, restoration and/or revegetation would be performed in those areas as described in the HRRP. Additional information pertaining to the habitat restoration and/or revegetation plan(s) can be found in Section 5.4, Biological Resources.

Existing access and spur roads, and new spur roads, would not be restored; these features represent an extant permanent disturbance, and these access and spur roads are, and would continue to be, utilized during O&M-related activities.

No damage to sidewalks is anticipated under the EPL Project. Few sidewalks are crossed by the EPL Project alignment; where sidewalks are located, any guard structures installed in these areas would be set-back from the roadway for, among other purposes, avoiding damage to sidewalks.

No damage to agricultural infrastructure is anticipated under the EPL Project. Limited agricultural land use is found in Segment 2. No work will be performed in these areas under the EPL Project.

Landscaping located on private parcels within SCE's easement may be trimmed or removed per the terms of SCE's easements over said parcels if such trimming or removal is authorized under the easements. Such landscaping would not be restored as part of the EPL Project. Any landscaping located outside of SCE's easements that is damaged during construction of the EPL Project would be restored, or suitable compensation for the damage made, as determined during negotiations between SCE and the landowner.

No public trails would be used for access during construction of the EPL Project. Some of SCE's existing access roads may be used by the public as trails. As stated above, no extant access roads would be restored.

3.7.3.2.7 Road Repaving and Striping

No road repaving or striping would be required under the EPL Project.

3.8 Operation and Maintenance

SCE currently performs O&M activities as described below along the transmission lines that are included under the EPL Project. No material changes in the O&M activities described below, or the locations of these activities, are anticipated with implementation of the EPL Project.

In addition to regular O&M activities, SCE conducts 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.

Ongoing O&M activities are necessary to ensure reliable service, as well as the safety of the utility worker and the general public as mandated by the CPUC. SCE facilities are subject to Federal Energy Regulatory Commission jurisdiction. SCE transmission facilities are under operational control of the CAISO.

3.8.1 Regulations and Standards

The transmission lines included under the EPL Project would be maintained in a manner consistent with GO 95 and GO 128 in California, and NESC in Nevada, as applicable along with federal, state, and local regulations. These GOs contain the ruling standards for the operation and maintenance of transmission lines in California.

SCE's Wildfire Mitigation Plan is provided in Appendix Q. No special procedures for wildfire management, beyond those addressed in the plan or required by regulation, are included under the EPL Project.

3.8.2 System Controls and Operation Staff

3.8.2.1 Systems and Methods

The systems and methods used for monitoring and control of the transmission lines included under the EPL Project would not be changed as a result of the EPL Project. Normal operation of the lines would be controlled remotely through SCE control systems, and manually in the field as required.

3.8.2.2 New Full-Time Staff

No additional personnel would be required for O&M activities.

3.8.3 Inspection Programs

3.8.3.1 Existing and Proposed Inspection Programs

The existing inspection programs implemented for the transmission lines included under the EPL Project would not be changed as a result of the EPL Project. SCE inspects the transmission overhead facilities in a manner consistent with GO 165 a minimum of once per year, but inspections usually occur more frequently based on system reliability.[18]

3.8.3.2 Enhanced Inspections

Portions of the EPL Project alignment are located in a High Fire Threat District: the western-most portions of Segments 1 and 2 are located in an area designated by the CPUC as Tier 2-Elevated. Enhanced inspections as described in Section 5.3.4, Asset Management and Inspections of SCE's Wildfire Mitigation Plan (Appendix Q) would be performed as applicable in these areas.

3.8.3.3 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, and using the new spur roads included under the EPL Project.

3.8.4 Maintenance Programs

3.8.4.1 Existing and Proposed Maintenance Programs

The existing maintenance activities performed along the transmission lines included under the EPL Project would be unchanged as a result of the construction of the project. Maintenance would continue to

[18] The substations and switchyard included in the EPL Project would be inspected per GO 174; however, because the EPL Project would not modify these substations or switchyard, inspections of the substations and switchyard are not addressed.

occur as needed and could include activities such as repairing conductors, washing or replacing insulators, repairing or replacing other hardware components, replacing poles 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 poles 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 (dust, salts, animal droppings, smog, condensation, etc.) and to reduce the possibility of electrical arcing which 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 utilize previously disturbed areas to the greatest extent possible. In some cases, new temporary access is created to remove and replace an existing structure.

In some cases, structures do not have existing access roads and are accessed 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 OHGW stringing operations. Helicopter landing areas could occur where access by road is infeasible.

3.8.4.2 Scheduled Maintenance or Facility Replacement

With the exception of the maintenance discussed above in Section 3.8.4.1, there is no scheduled maintenance associated with the transmission lines included under the EPL Project. Replacement of the conductor to be installed under the EPL Project at the end of its useful life would be performed generally as described in this Section.

3.8.4.3 Parts and Materials that require Regular Maintenance

No parts or materials installed under the EPL Project would require regular maintenance; maintenance would be performed on an as-needed basis.

3.8.4.4 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. 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 would also 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 includes the repair, replacement, and installation of storm water diversion devices on an as-needed basis.

3.8.4.5 Maintenance for Surface or Color Treatment

No existing structures along the EPL Project alignment have surface or color treatments, and no new inter-set structures installed under the project would have surface or color treatments. Therefore, no maintenance for surface or color treatment is currently, or would be, performed.

3.8.4.6 Cathodic Protection Maintenance

No cathodic protection systems are installed on or for the existing structures along the EPL Project alignment, and no new cathodic protection system would be installed under the project. Therefore, no maintenance of cathodic protection systems is currently, or would be, performed.

3.8.4.7 Landscaping Maintenance

No landscaping would be installed under the EPL Project, and therefore no new landscaping maintenance would result from construction of the EPL Project. Any existing landscape maintenance activities would continue.

3.8.5 Vegetation Management Programs

3.8.5.1 Vegetation Management Programs

Regular tree pruning must be performed to be in compliance with existing state and federal laws, rules, and regulations and is crucial for maintaining reliable service, especially during severe weather or disasters. Tree pruning standards for distances from overhead lines have been set by the CPUC (GO 95, Rule 35), PRC Section 4293, CCR Title 14, Article 4, and other government and regulatory agencies. SCE's standard approach to tree pruning during O&M is to remove at least the minimum required by law plus one years' growth (species dependent).

SCE maintains vegetation-free access roads, helipads, and clearances around electrical lines. Further, clearance of brush and weeds around structures as may be required by applicable regulations on ROWs is necessary for fire protection. A 10-foot radial clearance around non-exempt poles (as defined by CCR Title 14, Article 4) and a 25 to 50-foot radial clearance around non-exempt towers (as defined by CCR Title 14, Article 4) are maintained in accordance with PRC Section 4292.

3.8.5.2 Enhanced Vegetation Management

Among the vegetation management-related O&M activities that would continue after construction of the EPL Project would be on-going implementation of SCE's 2020-2022 Wildfire Mitigation Plan (and its subsequent, to-be-developed, iterations) in areas designated by the CPUC as Fire Threat Area Tier 2–Elevated. The Wildfire Mitigation Plan describes strategies, programs, and activities (including vegetation management) that are in place, being implemented or are under development by SCE to proactively address and mitigate the threat of electrical infrastructure-associated ignitions that could lead to wildfires.

3.9 Decommissioning

3.9.1 Decommissioning

SCE presently has no plans to abandon the transmission lines included under the EPL Project, and there are no reasonably foreseeable plans for the disposal, recycling, or future abandonment of any of the facilities included under the EPL Project.

3.10 Anticipated Permits and Approvals

3.10.1 Anticipated Permits and Approvals

The necessary federal, state, regional, and local discretionary permits that may be required for the EPL Project are listed in Table 3.10-1. Ministerial permits, including encroachment permits from state or local agencies, are not listed in Table 3.10-1.

3.10.2 Rights-of-Way or Easement Applications

SCE will apply for a new ROW grant for those portions of the transmission lines located on the NPS. No other applications for additional permanent ROWs or easements from federal or state agencies are anticipated for the EPL Project. SCE otherwise currently holds valid rights over public lands sufficient for the replacement of existing infrastructure.

SCE would apply for and obtain temporary rights over public lands for construction work areas located outside its existing ROW; such temporary rights would be applied for and obtained prior to construction.

3.11 Applicant Proposed Measures

SCE is not proposing any Applicant Proposed Measures (APMs). APMs are properly included in a proposed project to mitigate potential significant impacts to a less-than-significant level. As presented in Chapter 5, through compliance with federal and state law and regulation and with implementation of the standard measures and practices identified in the Project Description, no significant impacts have been identified for the EPL Project, and thus no APMs are proposed.

SCE has carefully considered each CPUC Draft Environmental Measure and has indicated in Chapter 5 those CPUC Draft Environmental Measures that will be applied during construction of the EPL Project.

3.12 Project Description Graphics, Mapbook, and GIS Requirements

3.12.1 Graphics

Diagrams as detailed in the CPUC Guidelines are found in Chapter 3, Chapter 5, and in Appendix A of this PEA document.

3.12.2 Mapbook

A mapbook as detailed in the CPUC Guidelines is presented in Appendix A of this PEA document.

3.12.3 GIS Data

GIS data are provided under separate electronic cover.

3.12.4 GIS Requirements

The requested information for each pole/tower that would be installed or removed is included in the GIS provided under separate electronic cover.

3.13 Other Project Features

The CPUC's *Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments* lists a number of 'Potentially Required Appendices and Supporting Materials'. SCE has developed the following items identified in the *Guidelines*:

Guidelines Title	EPL PEA Appendix
Noise Technical Studies	H: Ambient Noise Evaluation
Hazardous Substance Control and Emergency Response Plan / Hazardous Waste and Spill Prevention Plan	M: Hazardous Materials and Waste Management Plan
Revegetation or Site Restoration Plan	T: Habitat Restoration Plan U: Invasive Plant Management Plan
Helicopter Use and Safety Plan	O: Helicopter Use and Safety Plan

Further, SCE has developed and incorporated in the EPL Project the following SCE standard construction practices, standard measures designed to ensure compliance with federal, state, and (when and where applicable) local regulations and ordinances, and project-specific measures designed to minimize particular project impacts. These measures and the project design in general have been carefully developed to ensure that no significant impacts will result from construction of the EPL Project.

3.13.1 Standard Construction Practices

3.13.1.1 Worker's Environmental Awareness Training

All workers on the project site shall be required to attend a Worker's Environmental Awareness Training Program (WEAP). Training shall inform all construction personnel of the resource protection and avoidance measures as well as procedures to be followed upon the discovery of environmental resources. SCE will be responsible for maintaining WEAP training logs. At a minimum, the logs will contain the name, company, and date of training. These logs will be made available to the CPUC within a month after training is completed. The WEAP training will include, at a minimum, the following topics so crews will understand their obligations:

- ESA and other delineated boundaries (e.g., work areas)
- Housekeeping (trash and equipment cleaning)
- Safety, hazardous materials, and fire management
- Work stoppage
- Communication protocol
- Consequences of non-compliance
- Stormwater Pollution Prevention Plan (SWPPP) procedures
- Environmental resources procedures (e.g., biological, cultural, and paleontological)

3.13.1.2 Noise Minimization

SCE will employ the following typical and/or required construction practices:

- Construction activities will generally 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.
- 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.

- Construction traffic and helicopter flight will be routed away from residences and schools, where feasible.
- 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.
- SCE will send a mailer to residential addresses located within 3,000 feet of a staging area; the mailer will communicate to potentially affected sensitive receptors the location of the staging areas, the potential duration of use at the staging areas, and the hours during which staging areas may be used.

3.13.1.3 Pre-Construction Biological Clearance Surveys and Monitoring

Pre-construction clearance surveys will be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources) to avoid or minimize impacts on special status plants and wildlife species, habitat, nesting birds, and other sensitive biological resources in areas with the potential for resources to be present. Sensitive resources identified during the clearance survey will be either:

- Flagged for avoidance,
- Moved to outside impact areas,
- Avoided by implementing procedures to avoid impacts to individuals while impacting habitat (e.g., burrows, dens, etc.), or
- Documented based on permit authorizations.

Specific details on the pre-construction clearance survey requirements may be found within measures for each individual species.

Where special-status species (e.g., reptiles, birds, mammals, and bat roosts) or unique resources (defined by regulations and local conservation plans) are known to occur and there is a potential for direct impacts, qualified biologists will monitor construction activities to ensure that impacts to special-status species, sensitive vegetation types, wildlife habitat, and unique resources are avoided and minimized.

Pre-construction clearance surveys will utilize the data collected during the baseline and focused surveys described in the TLRR Habitat and Sensitive Species Report for the EPL Project. The pre-construction clearance surveys will be performed to confirm the presence (or lack thereof) of species identified during the baseline and focused surveys. The pre-construction surveys will be performed at a given site generally within 7 days prior to construction; unlike the baseline and focused surveys, the pre-construction surveys will not necessarily be performed during the appropriate survey periods for any given species.

3.13.1.4 Hazardous Materials Management

SCE has prepared and will implement a Hazardous Materials and Waste Management Plan (HMWMP) for project construction. The plan, contained in Appendix M, outlines proper hazardous materials handling, use, storage and disposal requirements, as well as hazardous waste management procedures. Implementation of this plan will ensure that all hazardous materials and wastes will be handled and disposed of according to applicable rules and regulations.

3.13.1.5 Soil Management

A Soil Management Plan has been developed and will be implemented during construction. The Soil Management Plan, contained in Appendix N, provides guidance for the proper handling, on-site management, and disposal of impacted soil that may be encountered during construction activities.

3.13.2 Standard Measures Designed to Ensure Compliance with Applicable Laws, Regulations and Ordinances

3.13.2.1 Avian Species-Related Measures

3.13.2.1.1 Nesting Bird Management Plan

SCE has prepared and will implement a Nesting Bird Management Plan (NBMP). The NBMP shall describe methods to minimize potential project effects to nesting birds and avoid any potential for unauthorized take. The NBMP is contained in Appendix S.

3.13.2.1.2 Burrowing Owl

Pre-construction clearance surveys shall be conducted in accordance with the most current CDFW guidelines (CDFG, 2012; or updated guidelines as they become available). SCE shall take measures to avoid impacts to any active burrowing owl burrow within or adjacent to a work area. The default buffer for a burrowing owl burrow is 300 feet for ground construction, and 300 feet horizontal and 200 feet vertical for helicopter construction. The NBMP will specify a procedure for adjusting this buffer, if needed. Binocular surveys may be substituted for protocol field surveys on private lands adjacent to the project site only when SCE has made reasonable attempts to obtain permission to enter the property for survey work but was unable to obtain such permission. If active burrowing owl burrows are located within project work areas, SCE may passively relocate the owls, by preparing and implementing a Burrowing Owl Management and Passive Relocation Plan (Appendix R).

3.13.2.1.3 Golden Eagle

All project activities located within areas identified as habitat (as described in the TLRR Habitat and Sensitive Species Report for the EPL Project) shall implement the following measures:

- Golden eagle nest surveys will be performed when construction activities are scheduled to occur in or near golden eagle nesting habitat from January 1-July 31 to determine if any eagle nests are active within a 1-mile radius. Ground-based or helicopter-based survey methods will be developed in coordination with USFWS and will be consistent with current USFWS survey guidelines.
- For construction activity, should an active golden eagle nests be present, the nest shall receive a 1-mile buffer if in line of sight, 0.5 mile buffer if no line of sight—with USFWS concurrence.

Buffers and buffer modifications for golden eagles are addressed in the NBMP (Appendix S).

3.13.2.1.4 Swainson's Hawk

In the event that nesting Swainson's hawks are present within the EPL Project alignment, SCE will implement the following measures prior to and during construction:

Pre-construction surveys. SCE and/or its contractors shall implement the following measures for construction and maintenance areas:

- Pre-construction raptor surveys would be conducted following CDFW guidelines.
- If active nests are not identified during the pre-construction survey, no further action shall be required for breeding birds.

Avoid and minimize impacts. If active Swainson's hawk nests are identified during the pre-construction survey, the project activities shall implement the following avoidance and minimization measures:

- Buffer zones and avoidance guidelines shall follow the above cited CDFW document.
- Construction contractors shall observe CDFW avoidance guidelines and buffer zones shall remain in effect until young have fledged.

Monitoring of the nest by a qualified biologist shall be required if project-related activity has the potential to adversely impact the nest.

3.13.2.2 Mammalian Species-Related Measures

3.13.2.2.1 Bighorn Sheep – Nelson's /Desert Bighorn Sheep

SCE will implement the following measures prior to and during construction:

- Pre-construction clearance survey/Construction monitoring. Prior to initial ground-disturbing activities, a qualified biologist will conduct pre-construction clearance surveys within 2 miles from construction work areas identified as habitat (as described in the TLRR Habitat and Sensitive Species Report for the EPL Project) for bighorn sheep during the peak lambing period Feb-May. During construction, monitoring by a qualified biologist will be implemented in occupied areas within the range of BHS between Feb 1 – Sept 30. The biological monitors will halt construction activities if BHS are within 500 feet of work areas or display signs of disturbance.
- Coordinate with agencies. SCE shall provide survey results to CDFW, BLM, NPS, and CPUC prior to conducting construction activities if work is planned within bighorn sheep (BHS) habitat (as described in the TLRR Habitat and Sensitive Species Report for the EPL Project).
- Avoid and minimize impacts. All project activities located within areas identified as BHS habitat (as described in the TLRR Habitat and Sensitive Species Report for the EPL Project) shall implement the following avoidance and minimization measures:
  - Limited Operating Period. SCE shall avoid construction activities within one-mile of bighorn sheep lambing areas during the lambing period February 1 – May 30, and from identified water sources during the dry summer months, between May 1 – September 30. This measure does not apply to emergencies.
  - Pets Prohibited. Employees will not bring pets to the Proposed Project area, unless the animal is ADA compliant.
  - Helicopter Avoidance. Helicopter flight paths and activities will be seasonally adjusted by implementing a one-mile horizontal avoidance buffer and a minimum 1,500-foot altitude around bighorn sheep lambing areas during the lambing season and known water sources during the dry summer months.
  - Wildlife attractants. All trash, food waste, water sources will be strictly controlled and monitored to ensure that no food or water attractants for bighorn sheep are available on the work sites during or following project activities.

3.13.2.2.2 Bats, Common and Sensitive Species

SCE will implement the following measures prior to and during construction:

- Pre-construction Clearance Surveys. A qualified bat biologist will conduct pre-construction clearance surveys before the start of construction to identify active bat roosting or maternity colonies within or adjacent to project impact areas. Trees, rock outcrops, caves, and mines with bat roost potential will be assessed for the presence of bats during the maternity season (April 15 - August 15) or winter torpor season (October 31 - February 15). For the maternity season, a one-night visual emergence survey during acceptable weather conditions (e.g., no rain or high winds, night temperatures >45F) may be employed to determine presence. Alternatively, the roost can be physically examined if conditions permit (e.g., remote cameras or lift equipment).

  High-value habitat features (large tree cavities, crevices, bark fissures, basal hollows, loose or peeling bark, larger snags, palm trees with intact thatch, mines, rock outcrops, buildings, etc.) will be identified and the area around these features searched for bats and bat sign (guano, culled insect parts, staining, etc.). Riparian woodland, orchards, and stands of mature broadleaf trees shall be considered potential habitat for solitary foliage roosting bat species, such as the solitary western red bat and western yellow bat.

  If no roosts (maternity, wintering, or otherwise) are present, tree trimming/removal may continue as planned. If an active roost has been identified or lasiurine bats are present, removal of trees around the roost would be conducted between September 15 - October 30, and February 15 - April 15, which corresponds to time periods when bats are active, not in torpor, and not caring for non-mobile young.

  Removal of trees requires the following two-step process prior to trimming/removal:

  - On Day 1 under the supervision of a qualified bat biologist, Step 1 would include branches and limbs with no cavities removed by hand (e.g., using chainsaws). This would create a disturbance (noise and vibration) and physically alter the tree. Bats roosting in the tree would either abandon the roost immediately (rarely) or, after emergence, would avoid returning to the roost.
  - On Day 2, Step 2 of the tree removal may occur, which would be removal of the remainder of the tree. Trees that are only to be trimmed and not removed would be processed in the same manner; if a branch with a potential roost must be removed, all surrounding branches would be trimmed on Day 1 under supervision of a qualified bat biologist and then the limb with the potential roost would be removed on Day 2.
- Construction Monitoring. If a colonial or solitary maternity roost was located, tree/structure removal will be avoided between April 15 and August 15 (the maternity period) to avoid impacts to active maternity roosts (reproductively active females and dependent young). A qualified biologist will determine the appropriate buffer area around active nest(s) and provisions for buffer exclusion areas. Unless restricted by the qualified biologist, construction vehicles will be allowed to move through a buffer area with no stopping or idling. The qualified biologist will determine, evaluate, and modify buffers as appropriate based on species tolerance and behavior, the potential disruptiveness of construction activities, and existing conditions. Furthermore, the roost will be monitored to determine activity. Roost monitoring will be conducted by qualified biological monitors with knowledge of bat behavior under the direction of a CDFW qualified bat biologist.

The qualified biological monitor will observe and document implementation of appropriate buffer areas around active roosts(s) during project activities.

3.13.2.3 Reptilian Species-Related Measures

3.13.2.3.1 Desert Tortoise

SCE will implement the following measures prior to and during construction:

- Pre-construction clearance surveys/Construction monitoring. Prior to initial ground-disturbing activities, a biological monitor under the supervision of a USFWS or CDFW approved biologist – with experience monitoring and handling desert tortoise – will conduct a pre-construction clearance survey in all work areas within potential desert tortoise habitat, plus an approximately 100-foot buffer. All desert tortoise burrows within the pre-activity clearance survey area (including desert tortoise pallets) will be prominently flagged at that time so that they may be avoided during work activities.

  An approved biologist will be onsite to monitor vegetation removal and grading and provide regular inspections of all other construction activities within desert tortoise habitat. The approved biologist will have the authority to halt all non-emergency actions (as soon as safely possible) that may result in harm to desert tortoise, and will assist in the overall implementation of conservation measures for the tortoise.

  In the event a desert tortoise is encountered in the work area, all work will cease and the approved biologist will be contacted. Work will not commence until the animal has voluntarily moved to a safe distance away from the work area. If it does not move on its own within 15 minutes, an authorized biologist may remove and relocate the animal to a safe location according to the permit conditions. No tortoise will be handled except under authorization from the USFWS and CDFW. Encounters with desert tortoise will be documented and provided to the appropriate wildlife resource agencies. In the event a dead or injured desert tortoise is observed, the approved biologist will be responsible for notifying SCE's Herpetologist and reporting the incident to the wildlife resource agencies.
- Coordinate with agencies. BLM will complete formal consultation, pursuant to section 7(a)(2) of the Endangered Species Act, with the FWS prior to the onset of ground-disturbing activities. This consultation will address coordination with the agencies.
- Avoid and minimize impacts. All project activities located within areas identified as habitat (as described in the TLRR Habitat and Sensitive Species Reports for the EPL Project) shall implement the following avoidance and minimization measures:
  - Under Vehicle Checks. Desert tortoises commonly seek shade during the hottest times of the day. Employees working within the geographic range of this species will be required to check under their equipment or vehicles before they are moved. If desert tortoises are encountered, the vehicle will not be moved until the tortoise has either voluntarily moved away from the equipment or vehicle.
  - Excavation of Desert Tortoise Burrows. Should it prove necessary to excavate a desert tortoise from its burrow to move it out of harm's way, the authorized biologist will be responsible for following the appropriate protocols outlined in the 2009 USFWS Desert Tortoise Field Manual.

- Disposal of Trash. Trash and food items will be contained in closed containers and removed daily to reduce attractiveness to opportunistic predators, such as common ravens (*Corvus corax*), coyotes (*Canis latrans*), and feral dogs (*Canis lupus familiaris*).
- Pets Prohibited. Employees will not bring pets or other animals to the Proposed Project area, unless the animal is Americans with Disabilities Act (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 habitat for desert tortoise 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 desert tortoise will be either constructed with escape ramps (earthen or wooden) or securely covered when unattended to prevent entrapping animals. 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.
- Wildlife Attractants. All trash, food waste, water sources will be strictly controlled and monitored to ensure that no food or water attractants for tortoise or common raven are available on the work sites during or following project activities.

3.13.2.4 Amphibian Species-Related Measures

3.13.2.4.1 Arroyo Toad

SCE will implement the following measures prior to and during construction:

- Pre-construction clearance survey/Construction monitoring. Prior to initial ground-disturbing activities, a qualified arroyo toad biologist will conduct a pre-construction clearance survey within areas identified as habitat for this species. Biological monitors shall monitor construction activities impacting areas identified as arroyo toad habitat. If arroyo toads are found on the access roads or work areas, all work and vehicle access shall cease until the animal has voluntarily moved to a safe distance away from the work area.
- Avoid and minimize impacts. All project activities located within areas identified as habitat shall implement the following avoidance and minimization measures:
  - Weather Restriction: Work must be conducted in daylight and during dry conditions in work areas impacting habitat.
  - Limited Operating Period and Weather Restriction. SCE shall restrict work to daylight hours in arroyo toad habitat, except during an emergency, or unless otherwise authorized by the appropriate agency in order to avoid nighttime activities when arroyo toads may be present on the access roads. In addition, monitoring is required in arroyo toad habitat during and within 24 hours of measurable rain events, defined as a 70% or greater NOAA forecasted rain event of 0.25-inch or greater.
  - Spill Prevention. Fueling and maintenance of vehicles and other equipment and staging areas will occur at least 50 feet from any riparian and aquatic habitat. If these activities must occur within 50 feet of this habitat, they must be staged within full containment. All workers will be informed of the importance of preventing spills and the appropriate measures to take should a spill occur.

- 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 occupied habitat for Arroyo Toad will not exceed 20 miles per hour.

3.13.2.5 Plant Species-Related Measures

3.13.2.5.1 Habitat Restoration Plan

Temporary impacts to regulated species' habitats, plant species, and vegetation communities shall be restored. Regulated species and vegetation communities include all species designated as threatened, endangered or rare, sensitive, or of concern by resource or land agencies. Species and vegetation communities that require restoration will be determined by the resource agencies through the permitting process. SCE will implement a Habitat Restoration Plan (HRP, Appendix T). SCE will consult with appropriate agencies during development of the HRP and implement the HRP in conjunction with applicable permit conditions and mitigation measures. The HRP will be submitted to CPUC, BLM, and NPS for review and approval prior to the start of construction. Invasive plant management will be performed in conjunction with the HRP per the Invasive Plant Management Plan.

3.13.2.5.2 Invasive Plant Management Plan

SCE will implement an Invasive Plant Management Plan (IPMP, Appendix U). This plan includes 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 also must meet BLM's requirements for NEPA disclosure and analysis if herbicide use is proposed for the project. The IPMP shall be submitted to the CPUC, BLM, and NPS for review and approval prior to the start of construction. The IPMP will be implemented throughout project pre-construction, construction, and restoration phases.

3.13.2.5.3 Special-status Herbaceous Plants

SCE shall avoid, minimize or mitigate impacts to any state or federally listed or California Rare Plant Rank (CRPR) 1 or 2 herbaceous plants that may be located on the project disturbance areas or surrounding buffer areas. SCE will implement the following measures prior to and during construction:

- **Pre-construction clearance survey.** Pre-construction clearance surveys would be performed by a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), which may be chosen from a previously approved CPUC approved biologist, to avoid or minimize impacts on special status plants. Disturbance free buffers for herbaceous species shall be 25-ft from the individual and/or occurrence boundary. These buffers shall be established from the previously conducted focused surveys and preconstruction survey results. If a smaller buffer is required, SCE shall develop and implement site-specific monitoring plan to minimize direct impacts to the species. The plan will be submitted to the CPUC for review and approval. In the event of a discovery of previously undescribed species, the boundary of the occurrence will be flagged, avoided, and monitored as discussed above and the CPUC, CDFW, and/or USFWS will be notified.
- **Focused Survey.** For construction areas where focused surveys have not occurred, focused surveys will take place prior to construction. Focused surveys will be conducted consistent with methodology described in the Project Biological Technical Report.

- **Restoration and Mitigation.** SCE will implement the following activities; other conflicting permit conditions will supersede the activities below.
  - Coordinate with Agencies. Agencies shall approve any impacts to special status plants. Impacts in excess of 10% of any occurrence (defined by CNDDB as all individuals within a ¼ mile of each other) shall be restored or mitigated.
  - Habitat Restoration. A Habitat Restoration Plan (HRP) shall address topsoil, plant or propagules salvage, and restoration. Approval of the HRP by appropriate agencies is required before impacts to special-status plant occurrences are allowed. A draft HRP is contained in Appendix T.
  - Salvage. SCE shall consult with a qualified restoration ecologist or horticulturist regarding the feasibility and likely success of salvage efforts for each species. If salvage is feasible, based on prior success with similar species, SCE shall include salvage methods in the HRP. For special-status plants, the goal shall be to preserve existing populations or establish new populations. Invasive plant control for special-status plants will be addressed in the Invasive Plant Management Plant (IPMP).
    - Off-site compensation. Where restoration is not feasible, SCE shall provide compensation lands consisting of habitat occupied by the impacted CRPR 1 or 2 ranked plant occurrences at either a 1:1 ratio of individuals or acreage, or at a ratio identified in an applicable agency land management plan, for any occupied habitat affected by the project. Occupied habitat will be calculated on the project site and on the compensation lands as including each special-status plant occurrence. If compensation is selected as a means of mitigating special-status plant impacts, it may be accomplished by purchasing credit in an established mitigation bank, acquiring conservation easements, or direct purchase and preservation of compensation lands. Compensation for these impacts may be "nested" or "layered" with compensation for habitat loss.

Annual construction monitoring reports shall be submitted to CPUC. Reports shall include, but not be limited to, details of plants or propagules salvaged, stored, and transplanted (salvage and transplanting locations, species, number, size, condition, etc.); adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation. After construction, salvage status will be described in the HRP annual report.

3.13.2.5.4 Special-status Perennial Plants, including Cacti, Shrubs, and Trees

SCE shall avoid, minimize or mitigate impacts to sensitive plants and natural communities in the project area, or unique riparian vegetation, that may be located on the project disturbance areas or surrounding buffer areas. SCE will implement the following measures prior to and during construction:

- **Pre-construction clearance survey.** Pre-construction clearance surveys would be conducted by a qualified specialist to identify any special-status perennial species or other species of tree, shrub, cactus, or yucca in the project area that require restoration or mitigation. Surveys would be consistent with the protocol outlined by California Department of Fish and Wildlife (CDFW) Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Sensitive Nature Communities (May 2018). Prior to the start of construction, a qualified biologist (i.e., a biologist with the requisite education and experience to address specific resources), which may be chosen from a previously approved CPUC approved biologist, shall complete pre-construction surveys in all habitats to identify individuals or occurrences of sensitive plants and natural communities in the project area, or unique riparian vegetation. Where these species are

known to occur, all work shall occur outside a 10-ft buffer. Buffer reductions may occur with the implementation of appropriate minimization measures. A qualified botanist/arborist monitor, with the authority to halt work, shall be present whenever work occurs within reduced buffers for any of these species. If avoidance of listed species is not feasible, SCE will consult with USFWS/CDFW and implement additional measures pursuant to FESA/CESA, if applicable based on the plant's status and jurisdictional location. For any impacted special-status plants that cannot be covered under a FESA/CESA incidental take authorization due to regulatory status and/or jurisdictional location, the restoration and mitigation steps below will be followed.

In the event of an unexpected discovery of a new species or previously undocumented occurrence, the same steps will be used as discussed above. In addition, when there is an unexpected discovery of a new species, the CPUC, CDFW, and/or USFWS will be notified.

- Restoration and Mitigation
  - Coordinate with Agencies. Agencies shall approve any impacts to the species where applicable based on the plant's status and jurisdictional location.
  - Habitat Restoration. If individuals of special-status species cannot be avoided, restoration activities as contained in the HRP will be implemented. Approval of the HRP by appropriate agencies is required before impacts to the given species is allowed.
  - Salvage. Native Cactus Removal. Most native cactus can be successfully salvaged and transplanted. Therefore, native cactus shall be avoided or salvaged.
  - Tree Removal. Tree removal and trimming would be designed to minimize the total number of individual trees removed or significantly trimmed. A qualified arborist would be onsite to make recommendations on trimming and removal. Protection and replacement of trees impacted by project activities would be mitigated consistent with applicable jurisdiction and agency requirements, and included in the HRP.
  - Offsite Compensation. If restoration is not feasible, SCE shall provide compensation lands consisting of habitat occupied by the impacted sensitive species at either a 1:1 ratio of individuals or acreage, or at a ratio identified in an applicable agency land management plan, for any occupied habitat affected by the project. Occupied habitat will be calculated on the project site and on the compensation lands as including each special-status plant occurrence. If compensation is selected as a means of mitigating special-status plant impacts, it may be accomplished by purchasing credit in an established mitigation bank, acquiring conservation easements, or direct purchase and preservation of compensation lands. Compensation for these impacts may be "nested" or "layered" with compensation for habitat loss.

Annual construction monitoring reports shall be submitted to CPUC. Reports shall include, but not limited to, details of individuals or occurrences impacted (removed or salvaged), salvage, temporary storage, if applicable, and final transplant locations, including species, number, size, condition, at a minimum; adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation. After construction, salvage status will be described in the HRP annual report.

3.13.2.6 Jurisdictional Water and Wetlands-Related Measures

The EPL Project has been designed to avoid and/or minimize impacts to all state and federally jurisdictional waters, wetlands, and riparian habitat that occur within the Project area to the maximum extent feasible. All grading, staging of equipment, infrastructure construction or removal, and all other

construction activities have been designed, sited, and will be conducted outside of state and federally jurisdictional waters, wetlands, and riparian habitat to the maximum extent feasible.

If permanent impacts to waters, wetlands, and riparian habitats are unavoidable, they shall be permitted and mitigated for at a minimum of a 1:1 ratio, or at a ratio determined by the applicable Resource or Land-Use Agencies (i.e., U.S. Army Corps of Engineers, the State Water Resources Control Board/Regional Water Quality Control Boards, and California Department of Fish and Wildlife, Bureau of Land Management, etc.).

3.13.2.7 Cultural Resources and Tribal Cultural Resources-Related Measures

To ensure compliance with applicable laws and regulation, SCE will implement the following measures.

3.13.2.7.1 Cultural Resource Management Plan

SCE shall prepare and submit for approval a Cultural Resource Management Plan (CRMP) to guide all cultural resource management activities during project construction. Management of cultural resources shall follow all applicable federal and state standards and guidelines for the management of historic properties/historical resources. The CRMP shall be submitted to the BLM, NPS, CPUC, and tribes for review and approval at least 90 days prior to the start of construction. The CRMP shall include, but not be limited to, the following sections:

- Cultural Resources Management Plan: The CRMP shall define and map all known cultural resources, including all NRHP- and CRHR-eligible properties in or within 100 feet of the Proposed Project APE/API.
- The CRMP will also contain details about how all NRHP- and CRHR-eligible properties will be avoided and protected during construction. Protective measures shall include, at a minimum designation and marking of Environmentally Sensitive Areas (ESAs), archaeological monitoring, personnel training, and reporting. The plan shall also detail what avoidance measures will be used, where and when they will be implemented, lines of authority and communication, and how avoidance measures and enforcement of ESAs will be coordinated with construction personnel.
- Cultural Resource Monitoring and Field Reporting: Detail procedures for archaeological and Native American monitoring, for reporting protocols, and for determining when monitoring is no longer necessary. Include guidelines for monitoring in Areas of High Sensitivity for the discovery of buried NRHP and/or CRHR eligible cultural resources, including burials, cremations, or sacred sites.
- Unanticipated Discovery Protocol: Detail procedures for halting construction, defining work stoppage zones, notifying stakeholders (e.g., agencies, Native Americans, utilities), and assessing NRHP and/or CRHR eligibility in the event unanticipated discoveries are encountered during construction. Include methods, timelines for assessing NRHP and/or CRHR eligibility, formulating mitigation plans, and implementing treatment. Mitigation and treatment plans for unanticipated discoveries shall be reviewed by appropriate Native American tribes and approved by the BLM, NPS, and CPUC, prior to implementation.
- Data Analysis and Reporting: Detail methods for data analysis in a regional context, reporting of results within one year of completion of field studies, curation of artifacts and data (maps, field notes, archival materials, recordings, reports, photographs, GIS shapefiles, and analytical data) at a facility that is approved by the BLM, NPS, and CPUC, and dissemination of reports to appropriate repositories.

3.13.2.7.2 Avoid Environmentally Sensitive Areas (ESAs)

SCE shall perform surveys for any project areas not yet surveyed (e.g., new or modified staging areas, pull sites, or other work areas) and areas covered by expired surveys (older than 10 years). Resources discovered during the surveys would be subject to the CRMP. Where operationally feasible, all NRHP- and CRHR-eligible resources shall 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 shall be avoided by all project construction, operation and maintenance, and restoration activities, where feasible. Avoidance mechanisms shall include fencing off Environmentally Sensitive Areas (ESAs) for the duration of the Proposed Project or as outlined in the CRMP.

3.13.2.7.3 Conduct Construction Monitoring

Archaeological monitoring shall occur as outlined in the CRMP, including but not limited to the archaeological monitor's authority, duties and reporting requirements. Archaeological monitoring shall be conducted by a qualified archaeologist familiar with the types of historic and prehistoric resources that could occur within the Proposed Project area. A Native American monitor may be required at culturally sensitive locations specified during government-to-government consultation with Native American tribes. SCE shall retain and schedule any required Native American monitors. The qualifications of the principal archaeologist and monitors shall be approved by the BLM, NPS, and CPUC.

Brief monitoring reports shall be submitted to the BLM, NPS, and CPUC on a weekly basis. A monitoring report presenting the results of the monitoring effort shall be prepared and submitted to BLM, NPS, and the CPUC for review and approval within one year of the completion of monitoring.

3.13.2.7.4 Properly Treat Human Remains

SCE shall follow all federal and state laws, statutes, and regulations that govern the treatment of human remains. Minimally, all work in the vicinity of such as find will cease within a 200-foot radius of the remains, and the area will be protected to ensure that no additional disturbance occurs. Should inadvertent effects to or unanticipated discoveries of human remains be made on federal lands, the BLM/NPS and County Coroner (California Health and Safety Code 7050.5(b)) shall 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 shall be treated in accordance with the provisions of NAGPRA (43 CFR 10) and the Archaeological Resources Protection Act (43 CFR 7). If the remains are not on federal land, the CPUC and County Coroner shall be notified immediately and the remains shall be treated in accordance with Health and Safety Code Section 7050.5, CEQA Section 15064.5€, and Public Resources Code Section 5097.98. SCE shall assist and support the BLM/NPS and/or state agencies, 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 BLM/NPS and/or state agencies. SCE shall comply with and implement all required actions and studies that result from such consultations.

3.13.2.7.5 Conduct Tribal Construction Monitoring

An archaeological monitor and tribal monitor who is culturally affiliated with the project area shall be present for all ground-disturbing activities within or directly adjacent to a previously identified TCR(s). The archaeological and tribal monitors will consult the CRMP to determine other areas that tribal monitoring may occur and to determine when to increase or decrease the monitoring effort should the monitoring results indicate a change is warranted. Copies of monitoring reports shall be submitted to the BLM, NPS, and CPUC on a monthly basis.

3.13.2.8 Paleontological Resources-Related Measures

The paleontological sensitivity underlying the Project APE varies at the surface and with depth, with some areas consisting of surficial geologic units with high sensitivity, and other surficial geologic units that are too young to preserve fossil resources but overlie older sediments with high sensitivity. To reduce potential impacts to less-than-significant levels, SCE will implement the following measures:

- A Project Paleontologist meeting the standards of the BLM as a Principal Investigator (BLM 2009) will be retained to oversee the execution of all paleontological measures.
- The Project Paleontologist will prepare and implement a paleontological resources monitoring and mitigation plan (PRMPP). The PRMMP will take into account the geologic setting of all project areas as well as the depth and type of ground disturbance in order to develop specific monitoring or mitigation protocols for all activities that impact previously undisturbed sediments of Moderate (PFYC Class 3) or higher (PFYC Class 4 and PFYC Class 5), whether the unit is present at the surface or in the subsurface. This plan will address specifics of monitoring and mitigation, comply with the recommendations of the BLM (2009, 2016), and include the following components:
  - Worker's Environmental Awareness Program (WEAP). The Project Paleontologist will design a WEAP for the construction crew, describing the legal requirements for preserving fossil resources as well as procedures to follow in the event of a fossil discovery. This training program will be given to the crew, before ground-disturbing work commences, by the Project Paleontologist or their designee and will include handouts to be given to new workers as needed.
  - Monitoring Protocols. The Project Paleontologist will implement a comprehensive PRMMP, including overseeing paleontological monitoring. The PRMMP will specify monitoring or mitigation protocols for all activities that impact previously undisturbed sediments of Moderate (PFYC Class 3) or higher (PFYC Class 4 and PFYC Class 5), whether the unit is present at the surface or in the subsurface. Appropriate mitigation methods may include full-time or part-time monitoring, screening of sediment samples for small fossils, or additional survey in the event of changes to the Project APE. Monitoring should be conducted by a paleontological monitor who meets the standards of the BLM (2009) under the supervision of the Project Paleontologist. The Project Paleontologist may periodically inspect construction activities to adjust the level of monitoring in response to subsurface conditions. Full-time monitoring can be reduced to part-time inspections or ceased entirely if this is determined adequate by the Project Paleontologist. The monitor will have authority to temporarily divert activity away from exposed fossils to evaluate the significance of the find and, should the fossils be determined significant, professionally and efficiently recover the fossil specimens and collect associated data. Paleontological monitors will record pertinent geologic data and collect appropriate sediment samples from any fossil localities.
  - Unanticipated Discovery Procedures. In the event of a fossil discovery, whether by the paleontological monitor or a member of the construction crew, all work will cease in a 15-m (50-foot) radius of the find while the Project Paleontologist assesses the significance of the fossil and documents its discovery. Should the fossil be determined significant, it will be salvaged following the procedures and guidelines of the BLM (2009) and within the requirements of the BLM permit where applicable. Significant fossils should be identified to the lowest taxonomic level and curated within an accredited and BLM-approved repository. If

the fossil is deemed nonsignificant, it will be fully documented but does not need to be curated. Recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and deposited in a designated paleontological curation facility.

- Final Monitoring Report. At the conclusion of Project's construction activities, the Project Paleontologist will prepare a final report detailing the methods and results of the monitoring and mitigation program, including full documentation of all fossils found, significance assessment of those fossils, and repository details for significant fossils

Table 3.10-1. Anticipated Permits and Approvals

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
USACE	404 Permit	Clean Water Act (CWA)	Waters of the United States (including wetlands)	Placement of dredge or fill material into waters of the U.S., including wetlands. If project impacts less than 0.5 acres a nationwide permit (NWP) is typically issued	NWP: prepare a preconstruction notification (PCN) along with the draft Corps' application (Engineer Form 4345). Information in the PCN includes, but is not limited to: results of wetland delineation including areas of waters of the U.S.; temporary and permanent impacts to waters of the U.S. and discussion of avoidance; construction techniques, timeline, and equipment that would be used; special status species that potentially occur in the project area, and discussion of mitigation (if applicable) to replace wetlands	NWP: takes approximately nine months from the date of application submittal (depending on level of impacts and level of consultation required by other agencies). Initial review is 30 days after which application is deemed complete or additional information is requested.
				If project would impact more than 0.5 acres a regional or individual permit may be required.	Regional or Individual Permit: Same requirements as NWP as well as preparation and submittal of 404(b)(1) Alternatives analysis which identifies the Least Environmentally Damaging Practicable Alternative (LEDPA). Public notice also required.	Regional or Individual Permit: An additional three to six months may be required on top of the nine months expected for an NWP. A 30-day public notice is also required to inform the public about the project before the Corps issues the permit.
US Department of the Interior, Bureau of Land Management	Right of Way Permit	Right-of-Way Grant	Federal Land Policy and Management Act/NEPA	Use of federal lands for a transmission line. Typically constitutes a Major Federal Action which in turn triggers NEPA analysis.	Right-of-Way Application: Contact the BLM entities with management responsibility. Obtain an SF-299 form "Application for Transportation and Utility Systems and Facilities on Federal Lands". Arrange a pre-application	BLM (as lead agency for EPL) attempts to review completed applications within 60 days of submittal. Full timing is often dependent upon what level of NEPA analysis is required. An EA is typically 9-12 months, and EIS is generally 18 months.

Table 3.10-1. Anticipated Permits and Approvals

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
					meeting. Submit completed application to the BLM. If it is determined that NEPA is required either an EA or EIS would be prepared. The NEPA document may be prepared jointly with the CEQA document.	NEPA process may occur concurrently with CEQA process.
US Department of the Interior, National Park Service	Special Use Permit	Right-of-Way Grant	Federal Land Policy and Management Act/NEPA	Use of federal lands for a transmission line. Typically constitutes a Major Federal Action which in turn triggers NEPA analysis.	Special Use Permit Application: Contact the NPS entity with management responsibility. Obtain an SF-299 form "Application for Transportation and Utility Systems and Facilities on Federal Lands". Arrange a pre-application meeting. Submit completed application to the NPS. If it is determined that NEPA is required either an EA or EIS would be prepared. The NEPA document may be prepared jointly with the CEQA document.	BLM (as lead agency for EPL) attempts to review completed applications within 60 days of submittal. Full timing is often dependent upon what level of NEPA analysis is required. An EA is typically 9-12 months, and EIS is generally 18 months. NEPA process may occur concurrently with CEQA process.
State Water Resources Control Board (SWRCB)/ RWQCB)	Section 401 Water Quality Certification (WQC), and Section 402 NPDES permit	Clean Water Act, Porter-Cologne Water Quality Control Act	Waters of the state	Potential impacts to state water quality standards	A request for 401 WQC is prepared and submitted by the RWQCB. Information required is nearly identical to information required for 404 Permit.	Preparation of the 401 WQC application is concurrent with preparation of Corps permit material. Issuance occurs approximately three to six months from the time the application is deemed complete depending on the level of impacts to waters of the state. Since RWQCB is also required to review CEQA document for

Table 3.10-1. Anticipated Permits and Approvals

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
						consistency, permits cannot be issued until Notice of Determination (NOD) is filed.
	Section 402 National Pollutant Discharge Elimination System (NPDES), Construction General Permit (CGP)	Clean Water Act	Waters of the US	Required if a project will disturb 1 acre or more of soil.	The SWRCB CGP process requires developers to notify the SWRCB of the construction activity by providing a Notice of Intent, developing a SWPPP, and implementing water quality monitoring activities as required.	Once the Permit Registration Documents (PRDs) have been submitted to the SWRCB and the permit fee payment has been made, it takes approximately one week to obtain the Waste Discharger Identification Number (WDID). Soil disturbing activities may not commence until the WDID is obtained.
California Department of Fish and Wildlife (CDFW)	Section 1602 Lake and Streambed Alteration Agreement (LSAA)	California Fish and Game Code (CFGC)	All perennial, intermittent, and ephemeral rivers, streams, and lakes in the state	Required if a project will: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.	The information required for the LSAA application is nearly identical to the information required by the Corps, but a separate application and questionnaire are required.	The typical timeline for issuance of a LSAA is approximately three to six months from the time the application is deemed complete and depending upon the level of impact to CDFW jurisdiction. The initial review period for CDFW is 30 days, in which time the application will be deemed complete or incomplete. If the project is deemed incomplete, CDFG will provide a list of additional information necessary to complete the application. Once the application has been deemed complete, CDFW has 60 days to review the information and prepare the draft agreement. Once the draft agreement is issued, the project applicant must review, sign and return it

Table 3.10-1. Anticipated Permits and Approvals

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
						to CDFW for the agreement to be valid. Additionally, CDFW is required to review the CEQA document for consistency and therefore the NOD must be filed before the LSAA will be issued.
Federal Agency-USACE and USFS	Section 106 National Historic Preservation Act (NHPA)	National Historic Preservation Act	Cultural Resources	Required if there is a federal undertaking. Requires federal agencies to consider the effects on historic properties of projects they carry out, assist, fund, permit, license, or approval. If a federal or federally-assisted project has the potential to affect historic properties, a Section 106 review is required.	Information on cultural and historical resources gathered during the draft CEQA/NHPA document preparation. Submit Technical Report to Federal Agency(s). The information is then evaluated by the federal agency for Section 106 compliance. Federal agency makes a determination of effects and consults with tribes and the State Historic Preservation Office (SHPO) to obtain concurrence on determination of effects. If an adverse effect is identified, agency will resolve those effects through continual consultation and a Memorandum of Agreement (MOA).	Once SHPO has received the federal agencies determination, it has approximately 30 days to comment and may request additional information. If the project is determined to have an adverse effect to historic properties, resolution of effects via an MOA can take 6 or more months.
CDFW	Incidental Take Permit	Fish and Game Code § 2081	Desert tortoise	Potential for "take" of desert tortoise.	Submittal of project description, analysis of impacts on desert tortoise, jeopardy analysis, and compensatory mitigation.	6 months to 1 year

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ELDORADO-PISGAH-LUGO 220 kV PROJECT

PROJECT OVERVIEW BY SEGMENT

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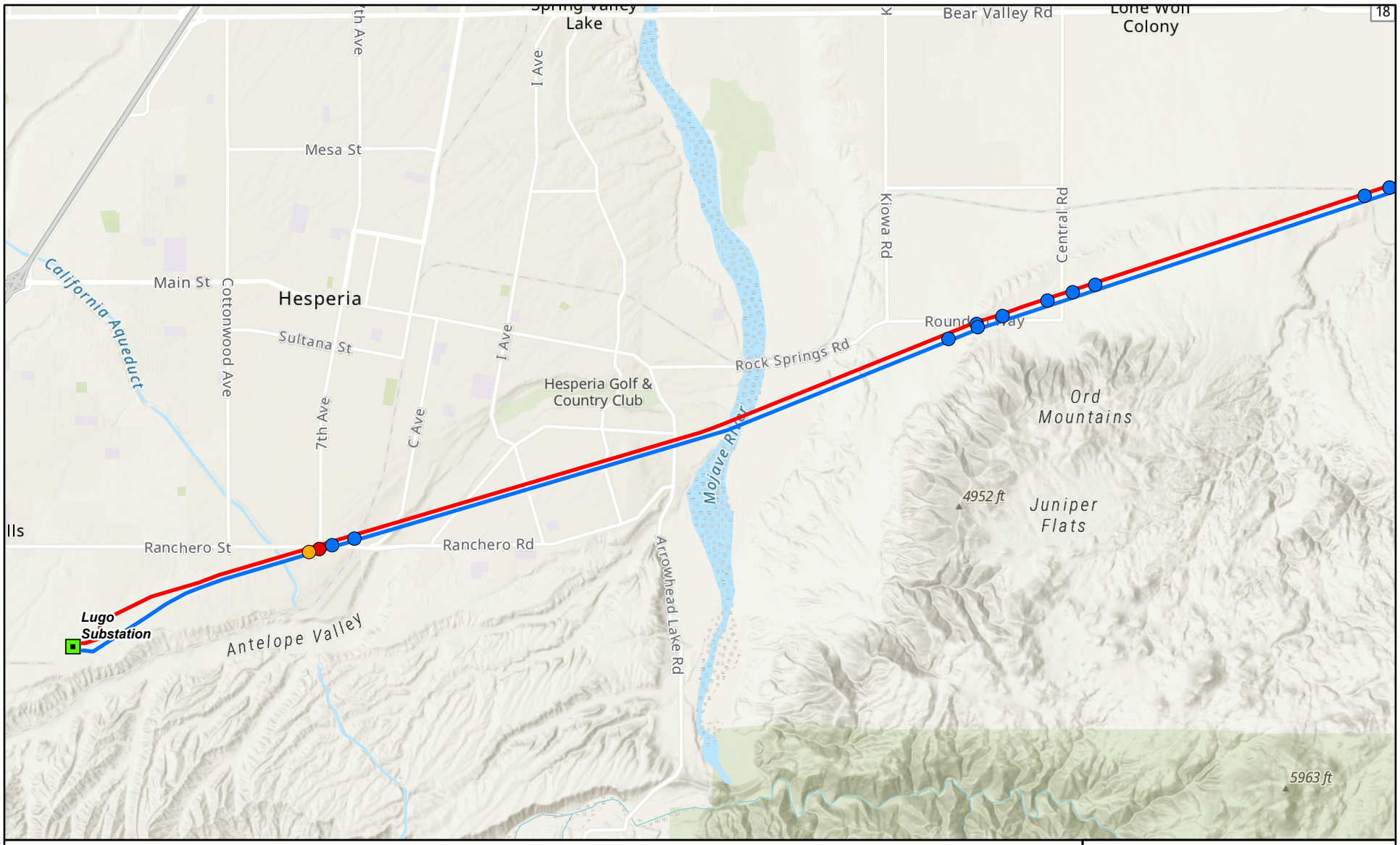
FIGURE 3.1-1a



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Page 1 of 13

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PROJECT OVERVIEW BY SEGMENT

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FIGURE 3-1.1b

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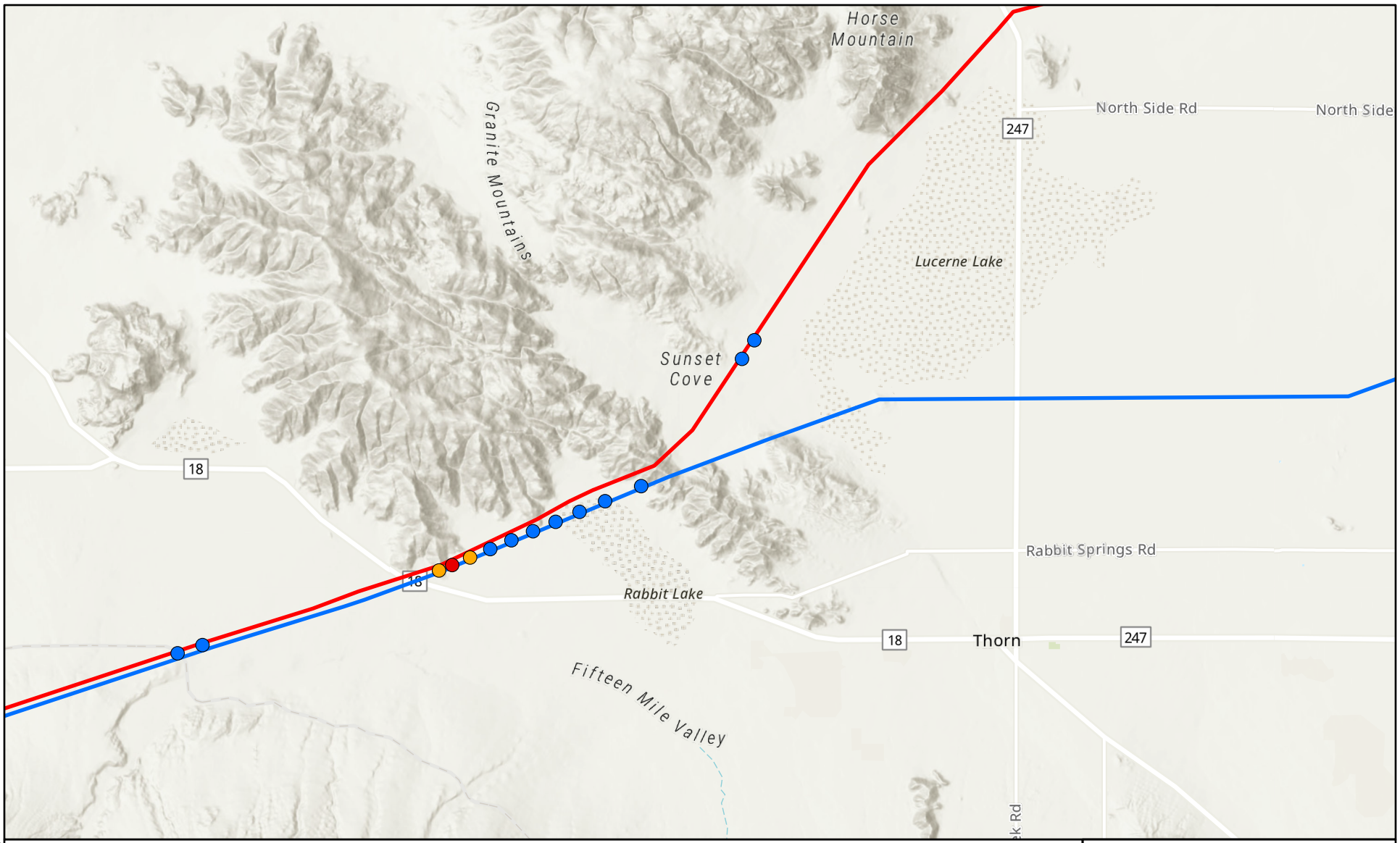

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PROJECT OVERVIEW BY SEGMENT

SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

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FIGURE 3-1.1b

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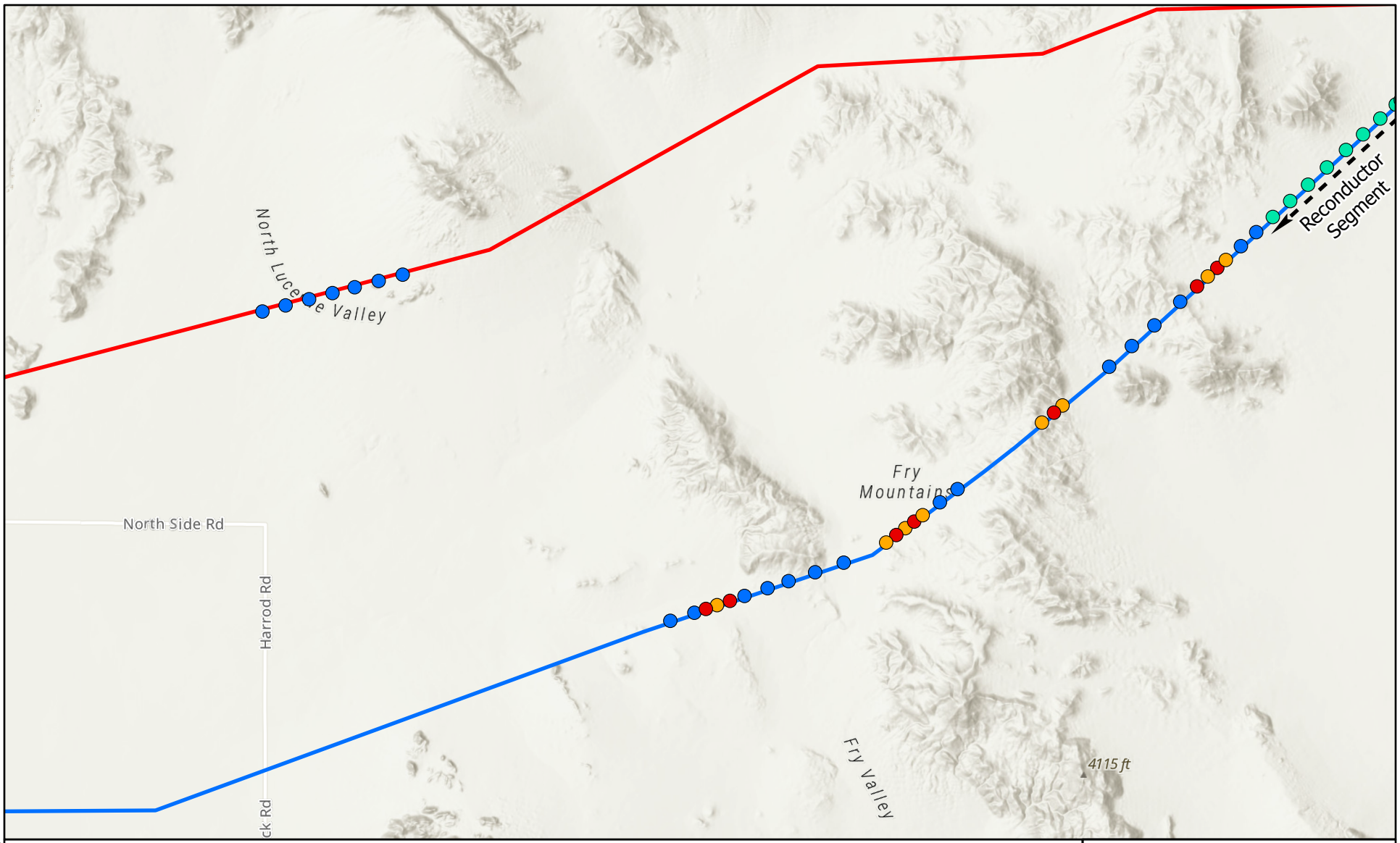

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PROJECT OVERVIEW BY SEGMENT

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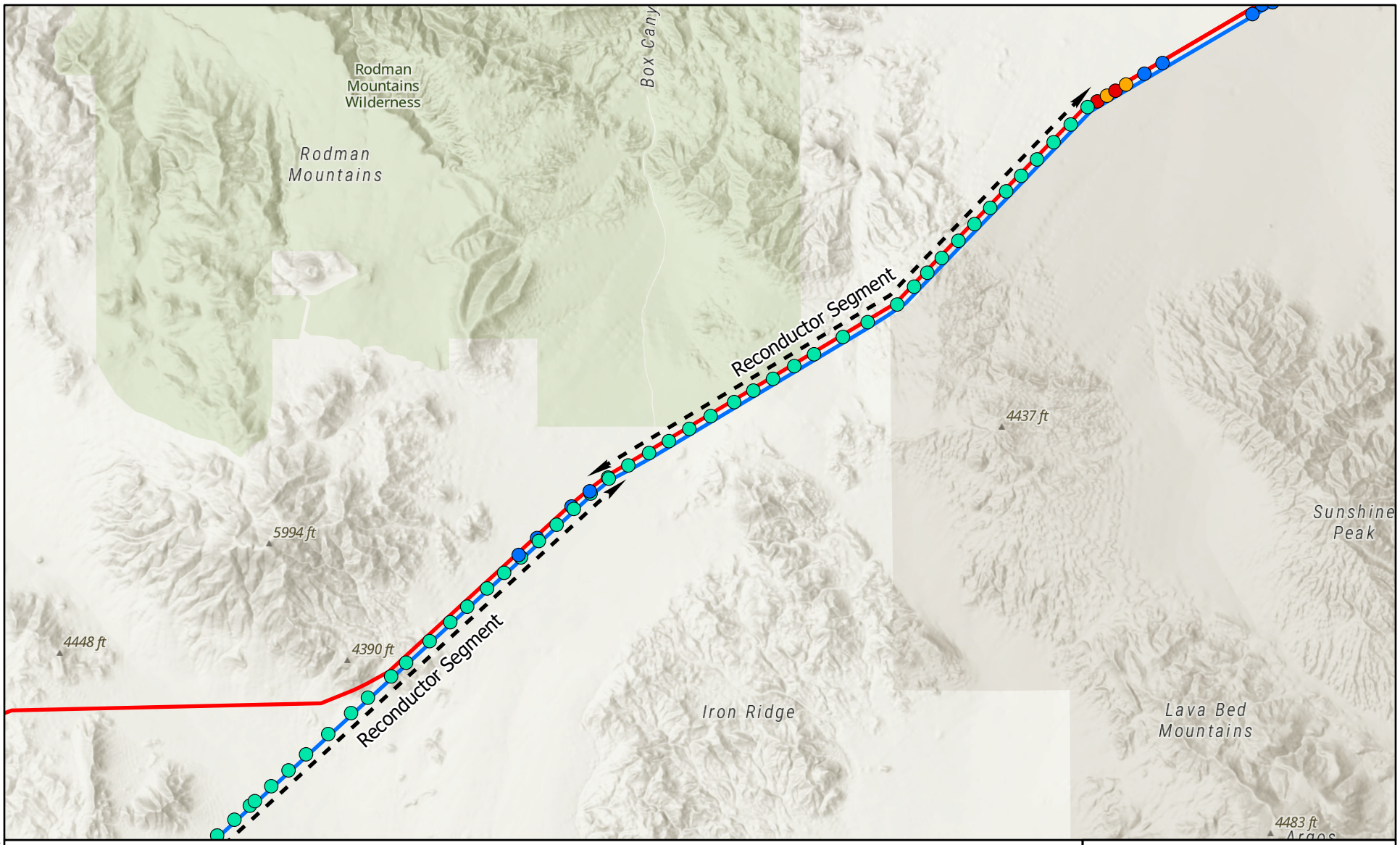

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PROJECT OVERVIEW BY SEGMENT

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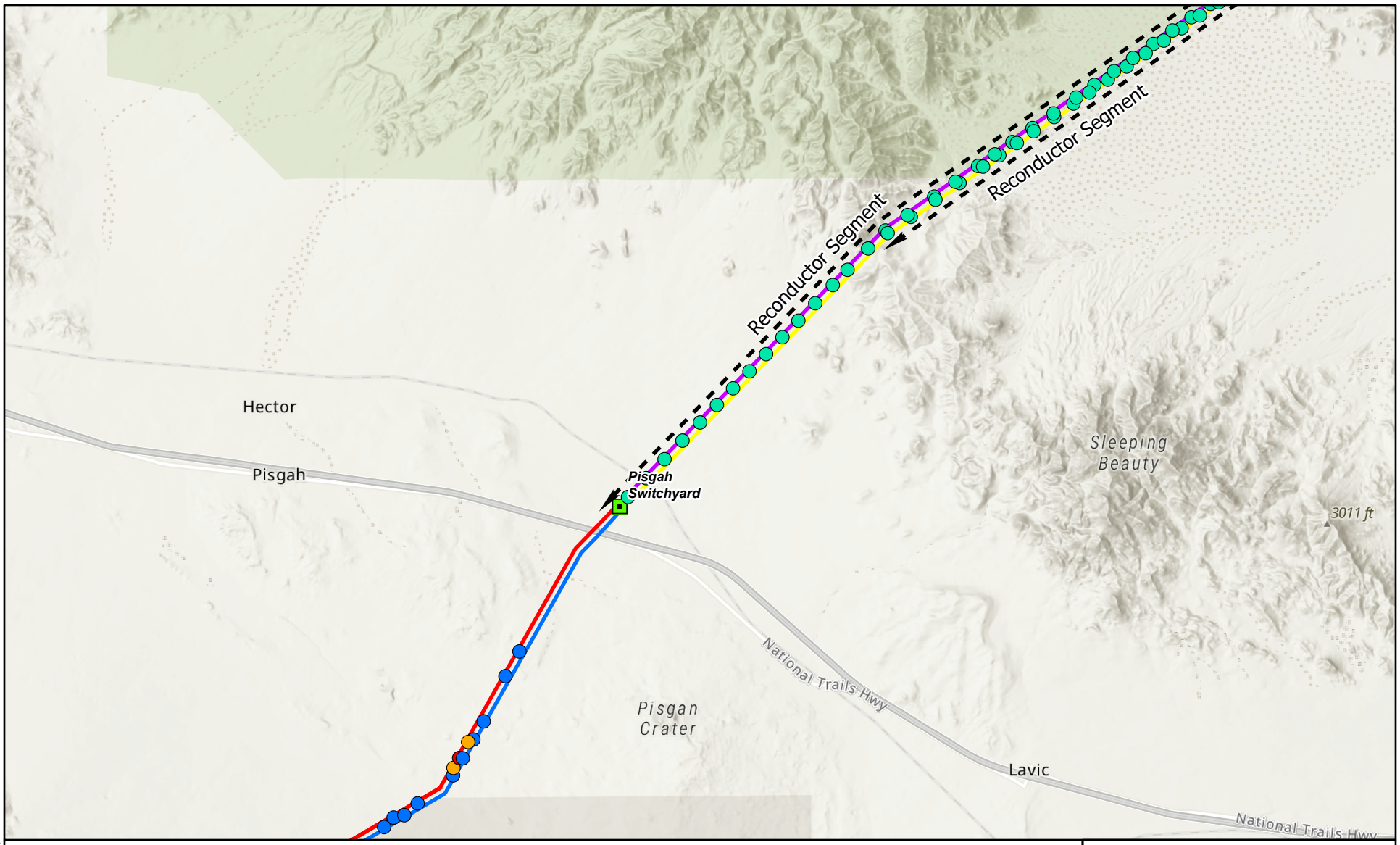

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PROJECT OVERVIEW BY SEGMENT

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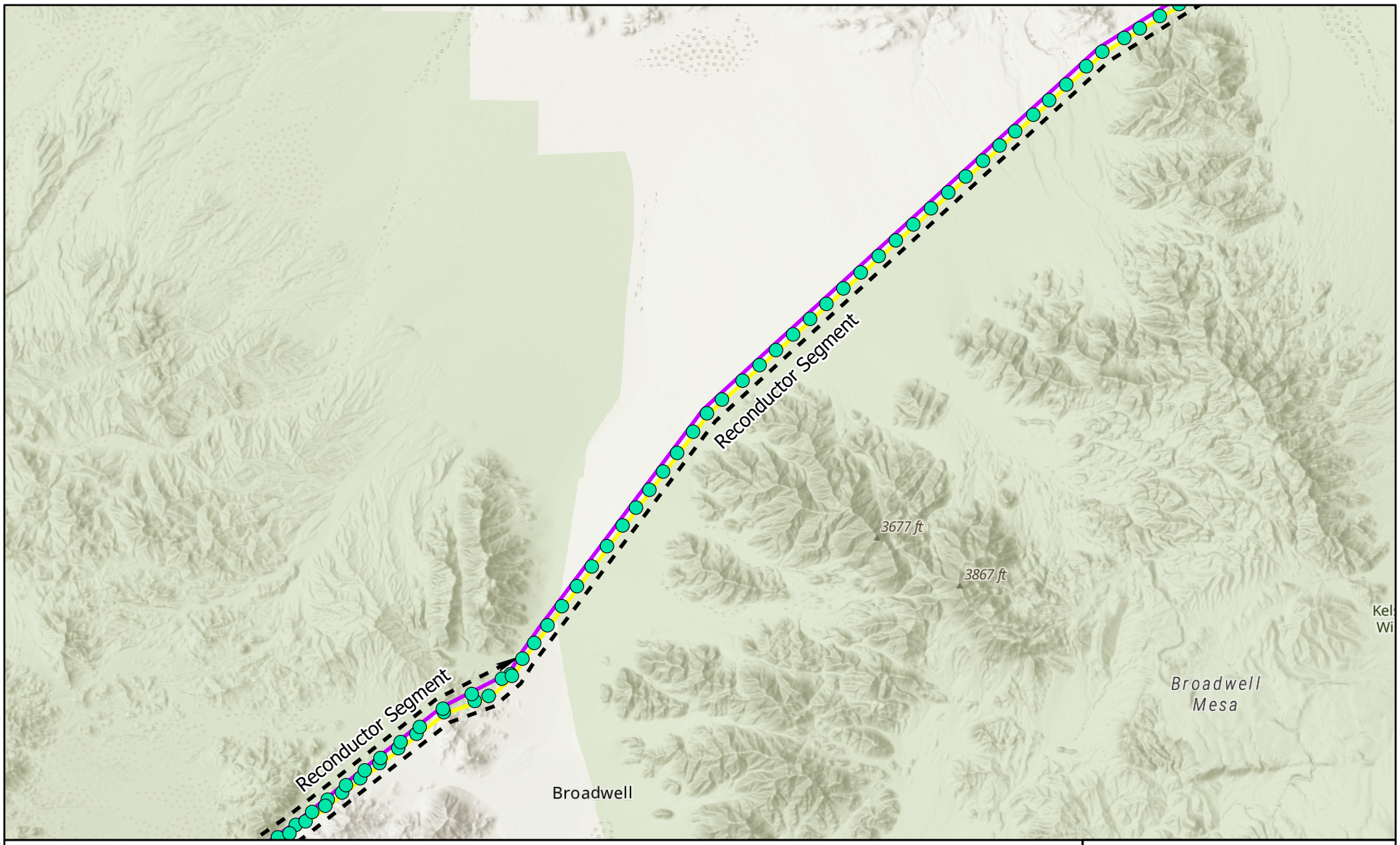

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PROJECT OVERVIEW BY SEGMENT

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FIGURE 3-1.1b

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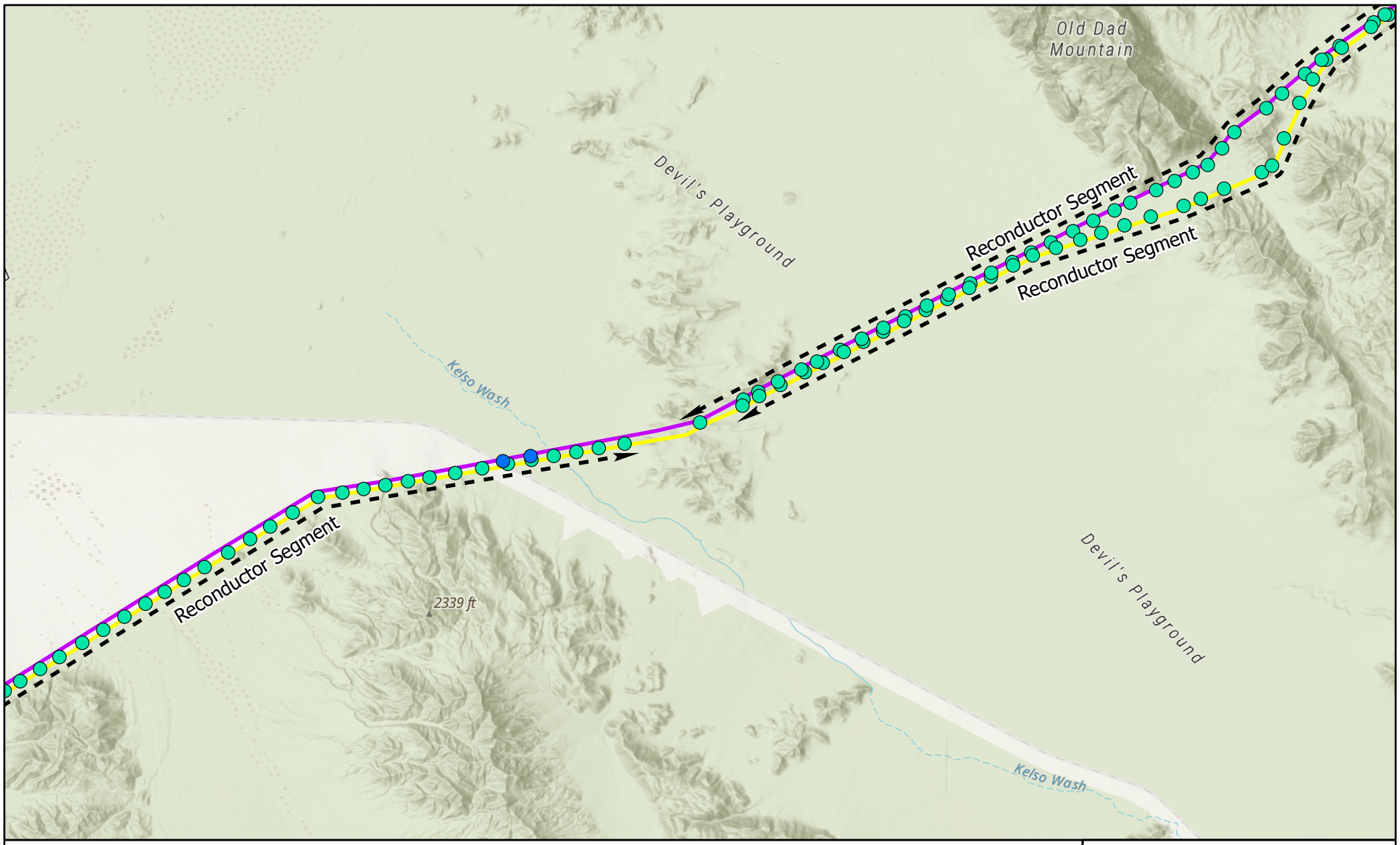

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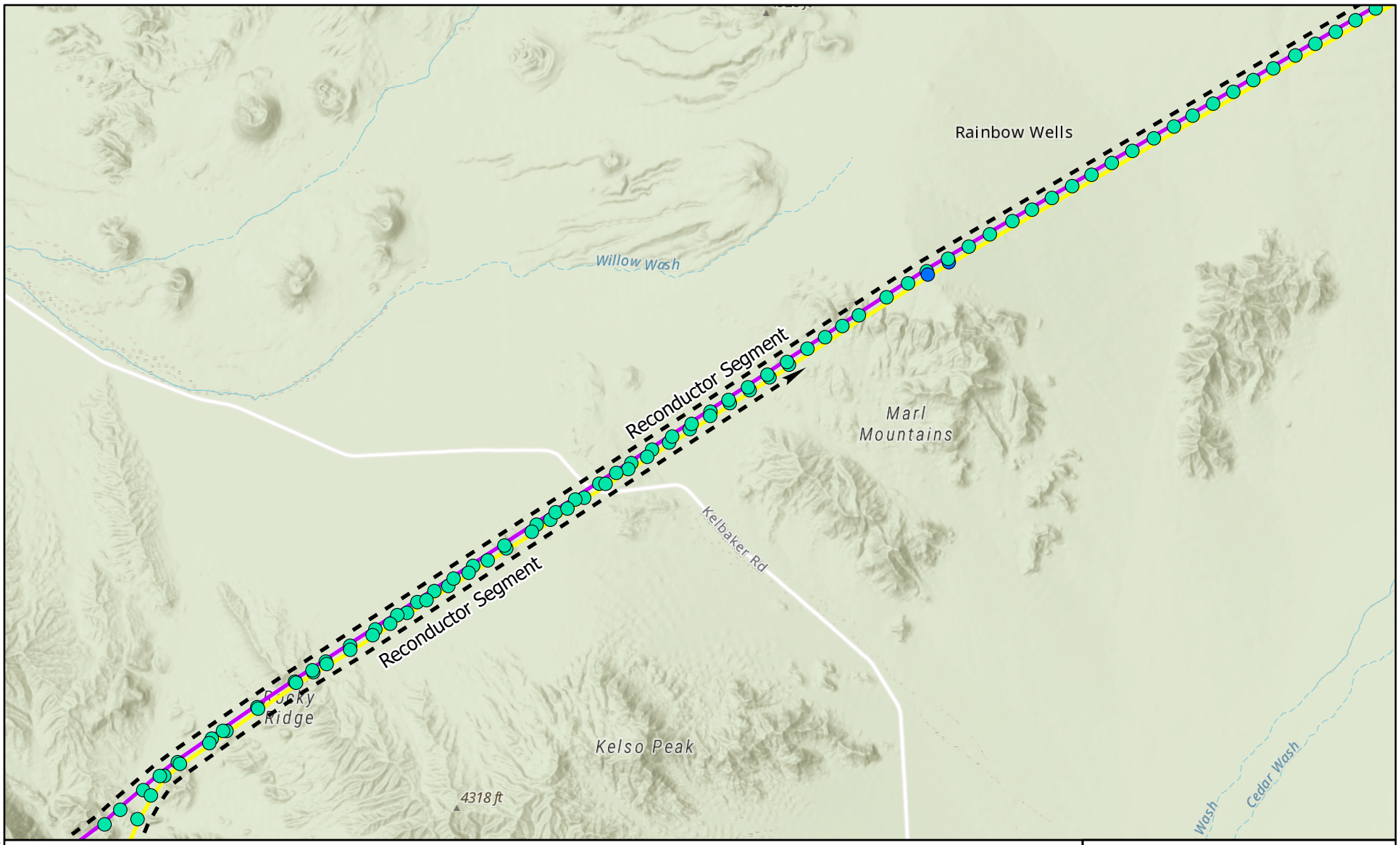

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PROJECT OVERVIEW BY SEGMENT

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FIGURE 3-1.1b

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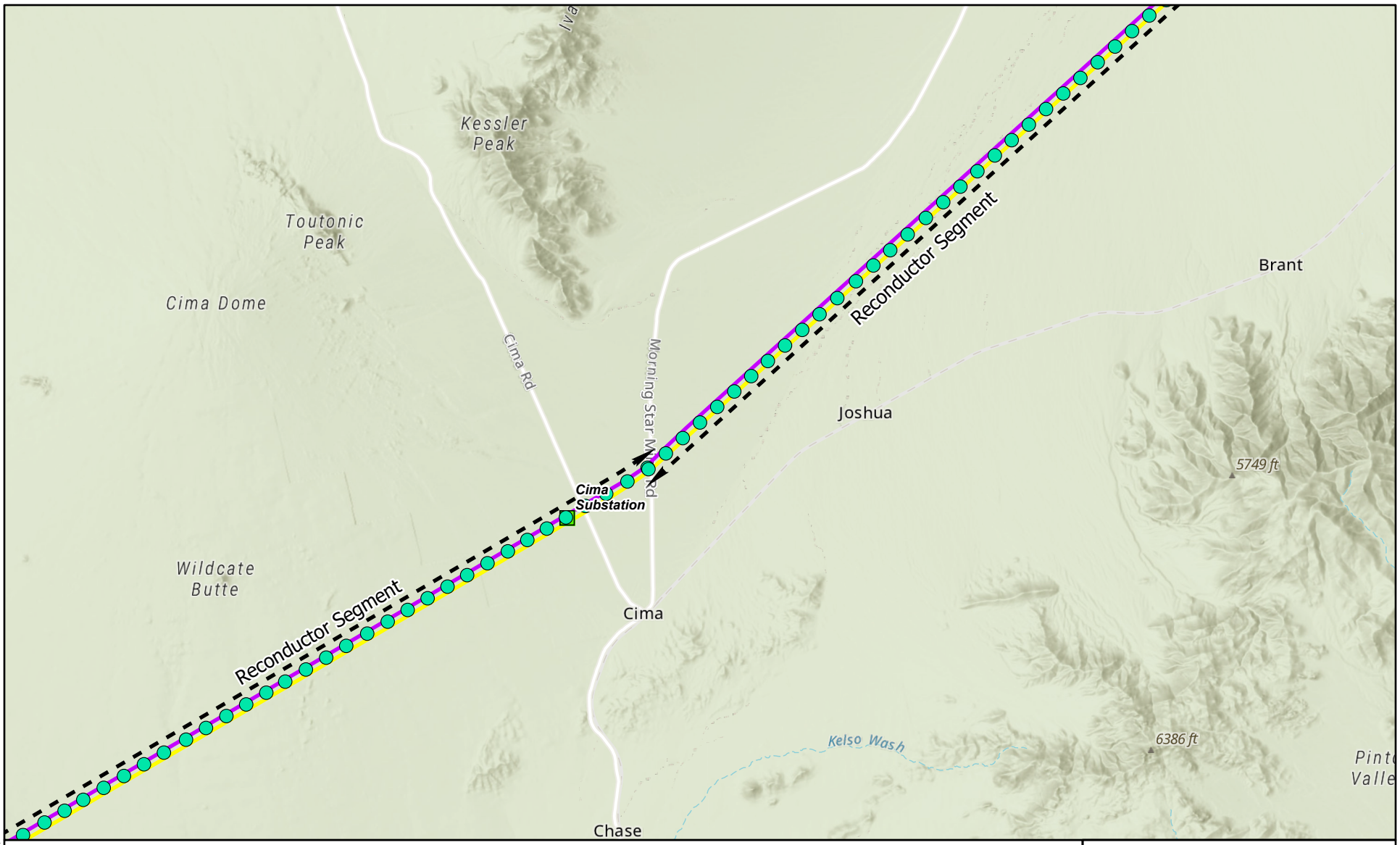

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PROJECT OVERVIEW BY SEGMENT

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FIGURE 3-1.1b

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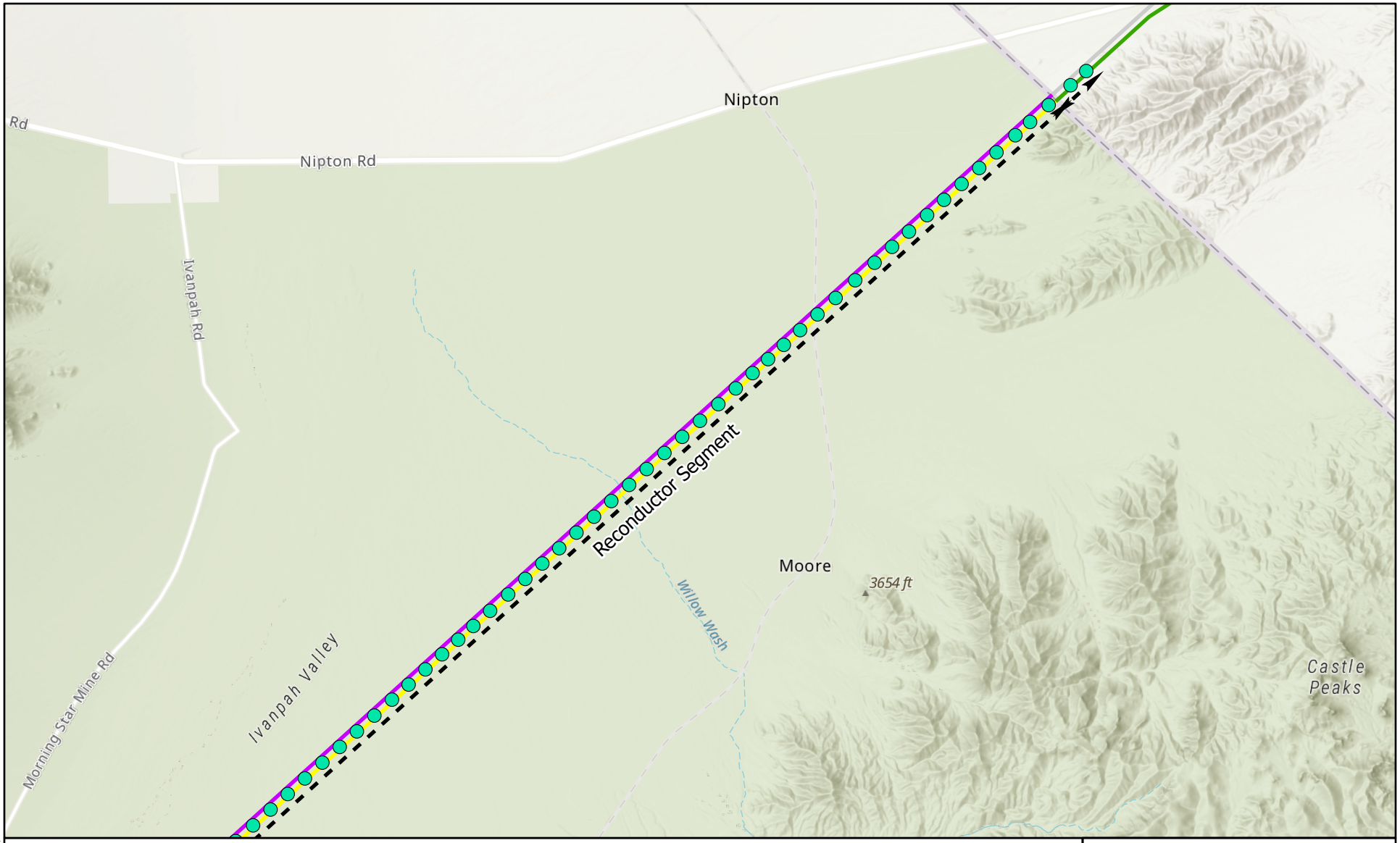

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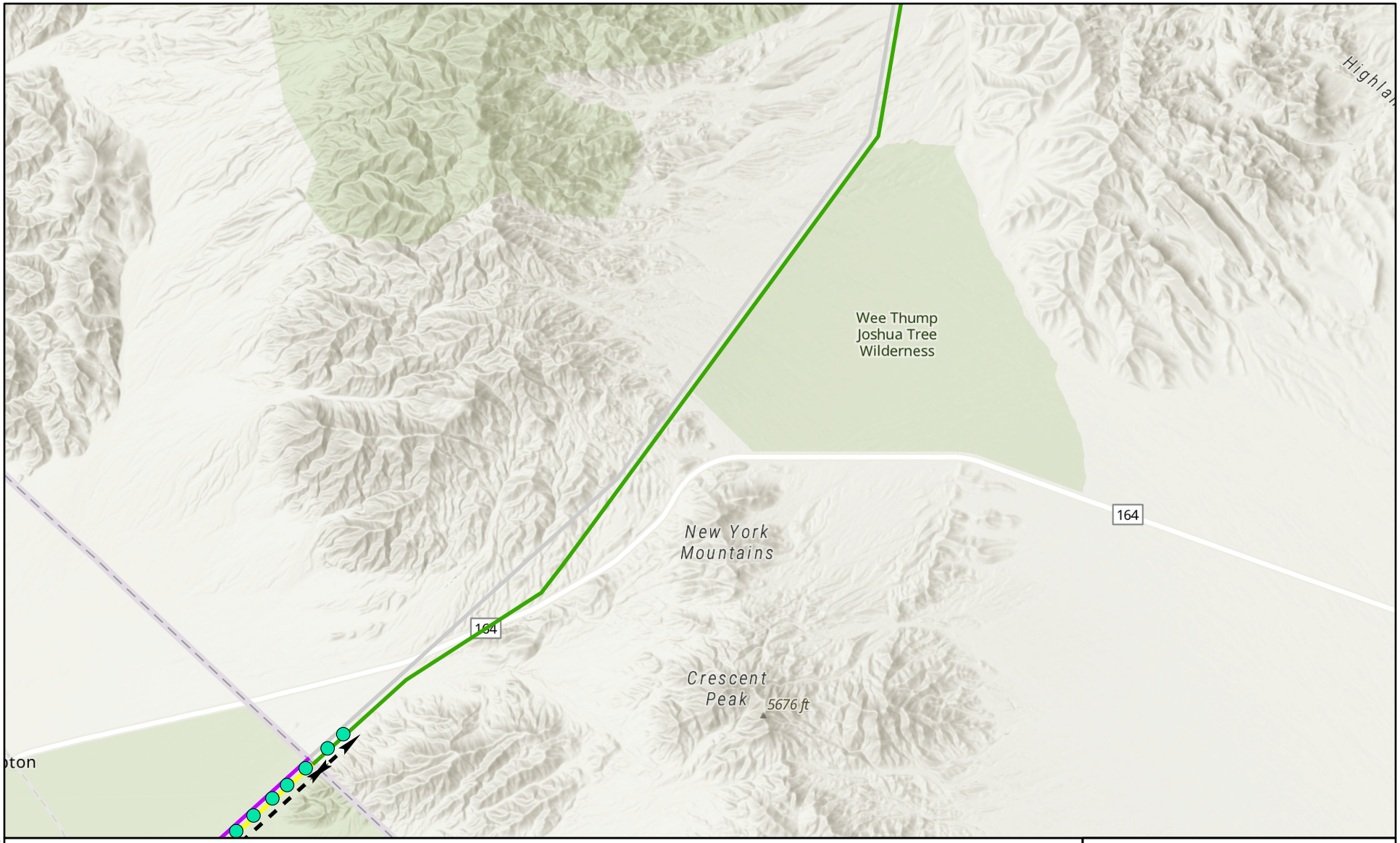
FIGURE 3-1.1b



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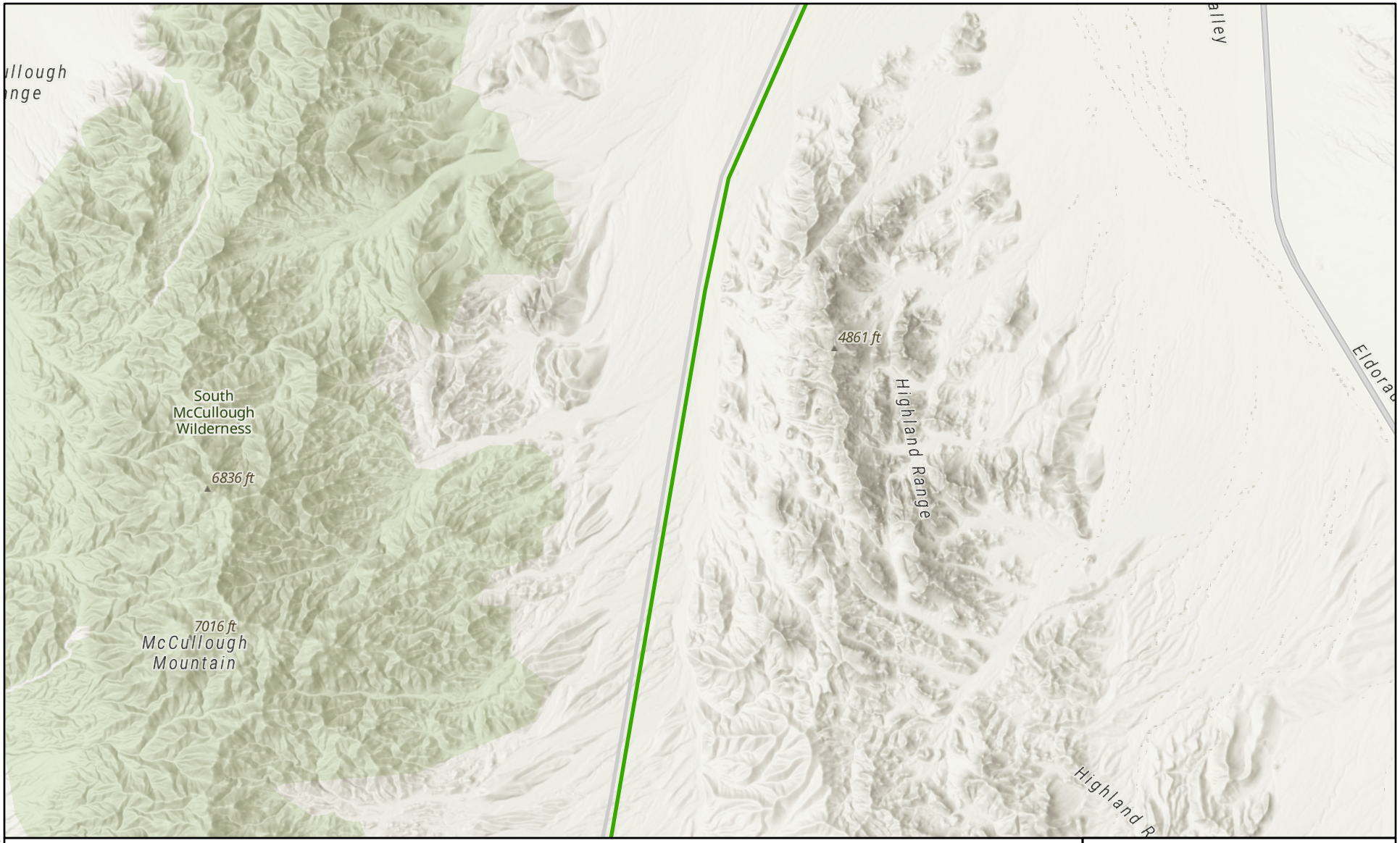

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Page 12 of 13

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Miles

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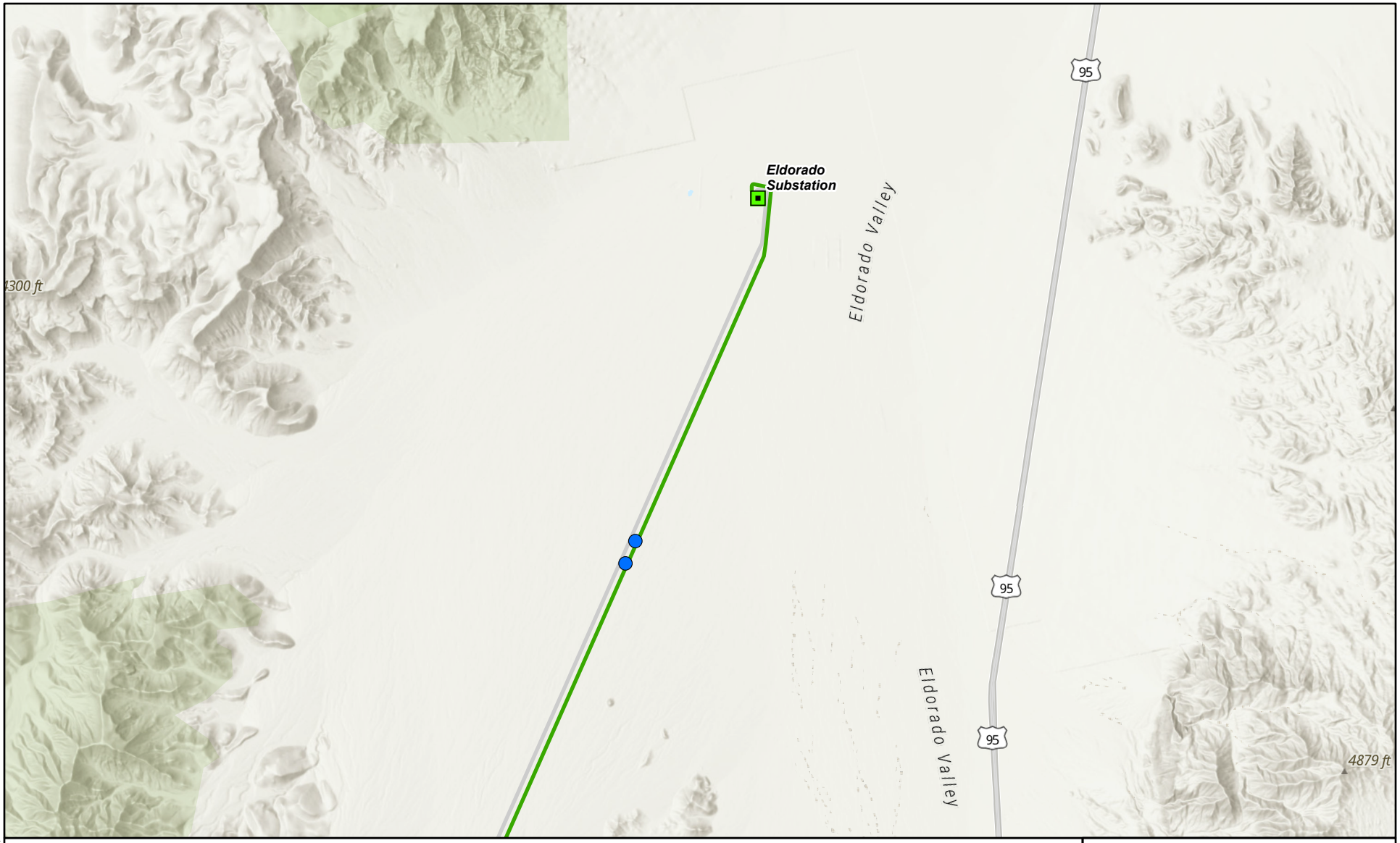
ELDORADO-PISGAH-LUGO 220 kV PROJECT

PROJECT OVERVIEW BY SEGMENT

SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company
ARCADIS

FIGURE 3-1.1b

Folder: T:_ENV\SCE\SCE_TLLR\ArcGIS_Pro\



Legend

- Substations
- Modify Insulator
- Segment 5
- Segment 6

0 1 2 Miles

N

ELDORADO-PISGAH-LUGO 220 kV PROJECT

PROJECT OVERVIEW BY SEGMENT

SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

ARCADIS

FIGURE 3-1.1b

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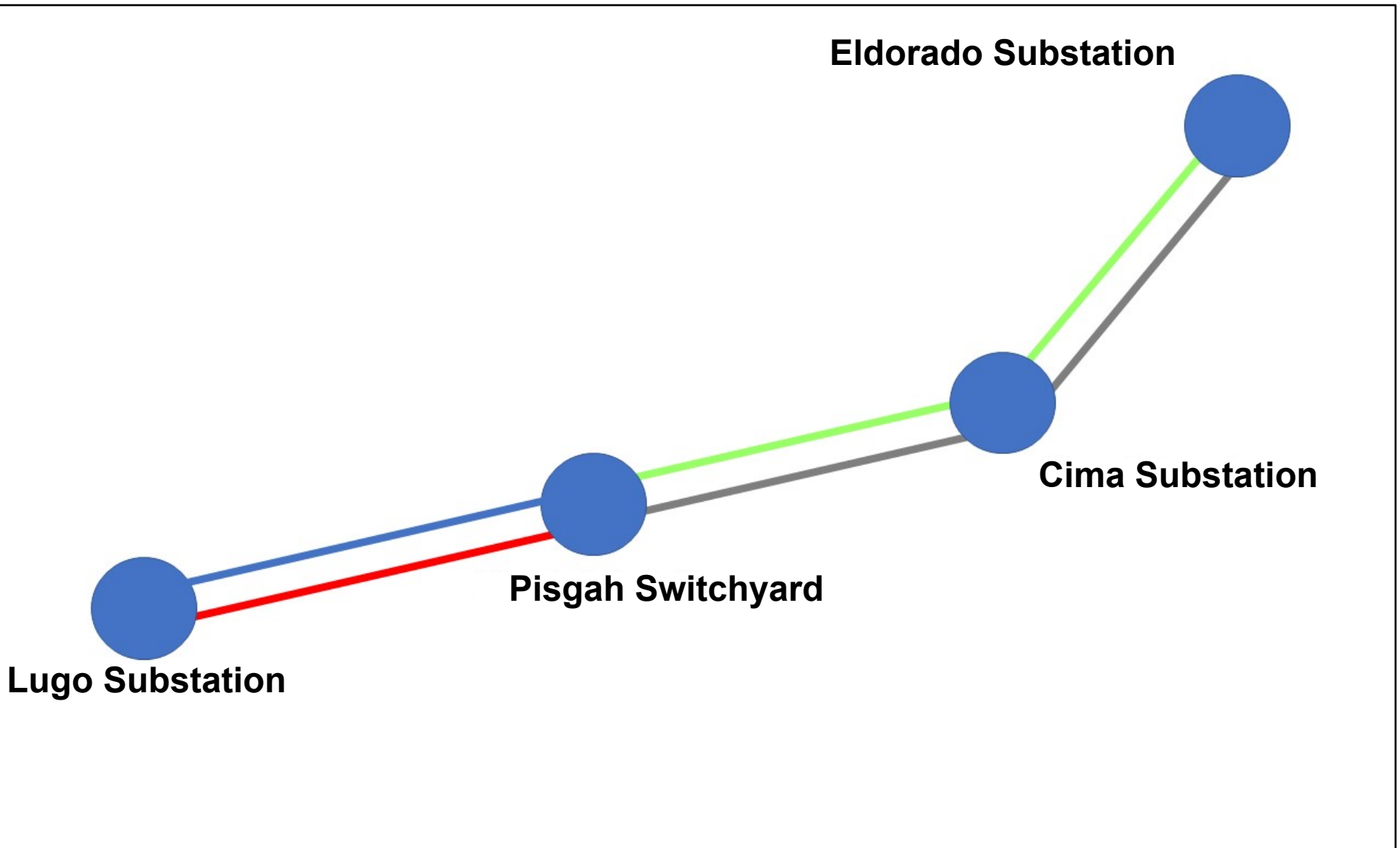

Legend

- Existing Lugo-Pisgah No.1 220 kV Transmission Line
- Existing Lugo-Pisgah No.2 220 kV Transmission Line
- Existing Cima-Eldorado-Pisgah No.1 220 kV Transmission Line
- Existing Cima-Eldorado-Pisgah No.2 220 kV Transmission Line

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ELDORADO-PISGAH-LUGO 220 kV PROJECT

EXISTING SYSTEM

SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company ARCADIS

FIGURE 3.2-1

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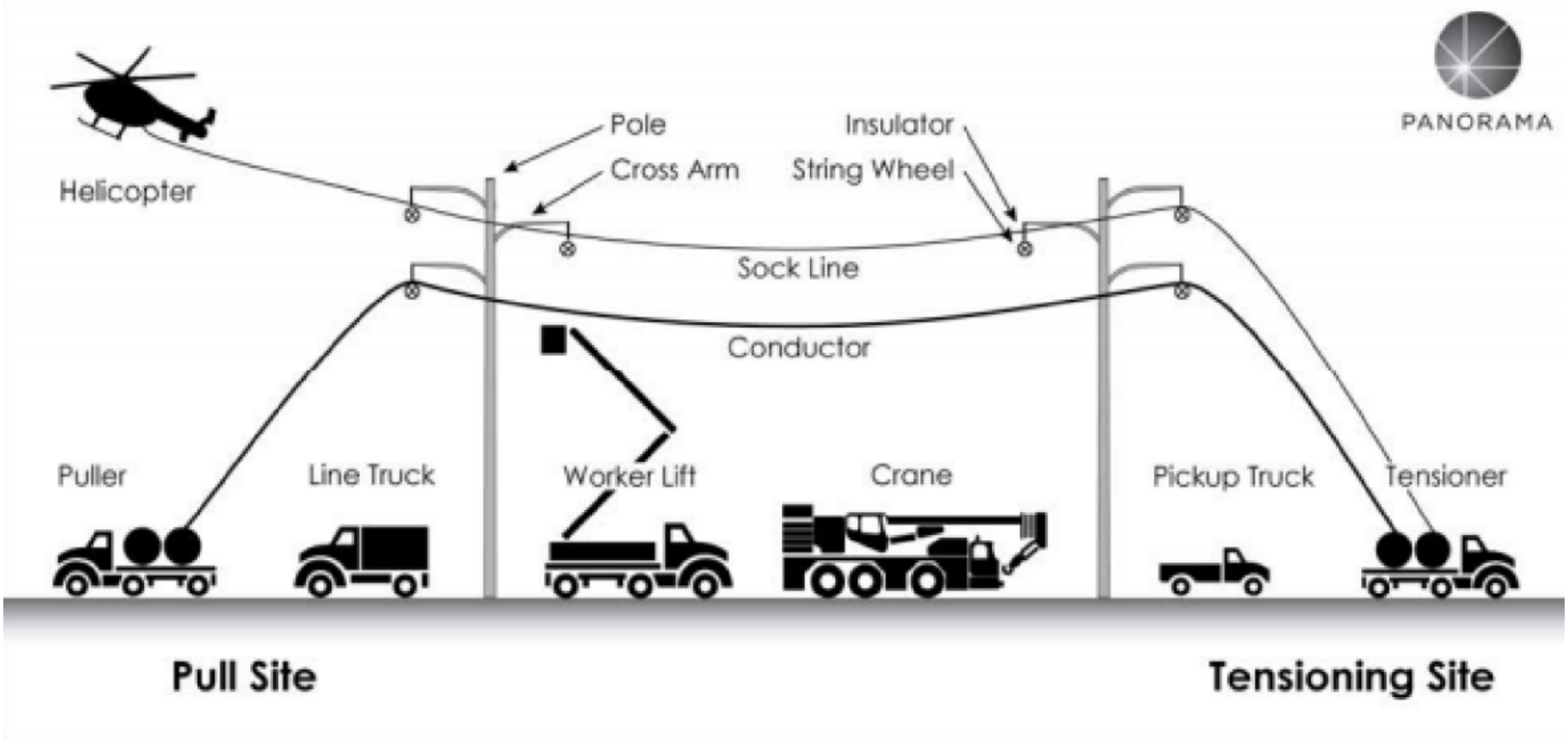
Inyo County
127
Eldorado Substation
Lake Mead National Recreation Are
Ridgecrest
Naval Air Warfare Center-China Lake
Mojave Desert
Fort Irwin
Baker Airport Yard
Nipton Backup
Nipton Yard
Kern County
95
Cima Yard 4
7522 ft
Cima Yard 3
Cima Yard 5
Cima Yard I
Cima Yard 2
City
Mojave National Preserve
Kelbaker Road Yard
7141 ft
San Bernardino County
15
58
Barstow
Pisgah Switchyard Yard
Pisgah Switchyard
Crucero Road Yard
40
Ludlow Yard
Lugo Substation Yard
Bear Valley Yard
Los Angeles County
Victorville
Lugo Substation Yard West
California Aqueduct
Lugo Substation
Marine Corps Agcc Twentynine Palms
Legend
Substations
Segment 1
Segment 2
Segment 3
Segment 4
Segment 5
Segment 6
County Boundary
0
15
30
Miles
N
ELDORADO-PISGAH-LUGO 220 kV PROJECT
STAGING AREAS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
ARCADIS
FIGURE 3.5-1
Folder: T:_ENV\SCE\SCE_TLLR\ArcGIS_Pro\



ELDORADO-PISGAH-LUGO 220 kV PROJECT

TYPICAL PULL-AND-TENSION/ STRINGING SITE SET-UP

SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company | ARCADIS

FIGURE 3.5-2

Folder: T:_ENV\SCE\SCE_TLLR\ArcGIS_Pro\

4 Description of Alternatives

The EPL Project is being proposed to meet the following objective:

- Comply with GO 95 and NESC Section 23 standards while maintaining the existing CAISO rating for the affected circuits.

Remediation of the discrepancies will also bring the lines into operational compliance with SCE's published facility rating methodology, which requires a review of actual field conditions as recommended by NERC. Remediating the identified discrepancies will also comply with applicable NERC reliability standards: the work will be completed as detailed in the mitigation plan filed in 2007 and as amended by SCE and accepted by the WECC. These objectives were used to develop and evaluate the EPL Project.

The location of the inter-set structures, and in some instances the orientation and configuration of construction work areas, were selected to avoid sensitive environmental resources and to avoid potential land use conflicts. Therefore, the EPL Project, as described in Chapter 3, represents the optimized design—it meets the identified objective, is feasible to construct, and presents the least-intensive scope of work and the smallest physical footprint of the solutions.

To avoid and/or minimize potential environmental impacts, the vast majority of the work under the EPL Project will be performed within an existing transmission line corridor and will utilize existing disturbed areas and access roads, thereby minimizing impacts to undisturbed sensitive environmental resources. In addition, the off-alignment staging yards have been preferentially sited on previously- or currently-disturbed areas, or in areas with degraded habitat where previously- or currently-disturbed areas are not available.

The evolutionary, optimized design of the proposed EPL Project avoids and/or minimizes potential environmental impacts: as presented in Chapter 5, the EPL Project would not result in a potentially significant impact for any CEQA criterion.

Section 15126 of the CEQA Guidelines states that "an EIR shall describe a range of reasonable alternatives to the project or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives." CEQA does not require a review of alternatives where, as here, the proposed project would result in no significant environmental impacts after mitigation (CEQA Guidelines, CCR Title 14, Chapter 3 (Guidelines), §15126.6, subd. (a) and (f)(2)(A)). This is because, under CEQA, a "reasonable alternative" is one that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects of the project (Guidelines, § 15126.6, subd. [a]). Because this PEA concludes that all impacts from the Proposed Project will be less than significant, no alternative would avoid or substantially lessen a significant effect of the project, and therefore no alternatives discussion is required.

However, this chapter provides a brief discussion of the potential engineering solutions SCE evaluated as part of a multi-year engineering design process that culminated in the proposed EPL Project. Each alternative is evaluated for its feasibility and ability to meet the project objectives. Several alternatives were considered but dismissed as infeasible as they would not feasibly attain the objective, or for other considerations. One alternative was considered feasible and is further evaluated in Chapter 6. The Partial Reconductor/Shorter Insulators Alternative is feasible and meets the project objectives; it is carried through for analysis in Chapter 6.

4.1 Alternatives Considered

4.1.1 Alternatives Suggested, Considered, or Studied by the CAISO or by CAISO Stakeholders

No alternatives were suggested, considered, or studied by the CAISO or by CAISO stakeholders.

4.1.2 Alternatives Suggested by the Public or Agencies

No alternatives were suggested by the public or agencies during public outreach efforts conducted by the Applicant.

4.1.3 Reduced Footprint Alternative

The Partial Reconductor/Shorter Insulators Alternative represents a reduced footprint alternative. The scope of the Partial Reconductor/Shorter Insulators Alternative includes:

- Reconductor 163 circuit miles
    - Replace existing conductor on existing structures with new ACCC conductor
    - Replace existing OHGW with new OHGW in spans where reconductoring will occur
    - Replace existing hardware and insulators on structures in those areas that are reconductored
- Replace existing insulators with shorter ones on 32 structures

The scope of work under the Partial Reconductor/Shorter Insulators Alternative would occur on all four transmission lines included in the EPL Project.

Because no new structures would be installed under the Partial Reconductor/Shorter Insulators Alternative, the permanent footprint of the Partial Reconductor/Shorter Insulators Alternative would be equivalent to the current permanent footprint; no new permanent disturbance would be created under the Partial Reconductor/Shorter Insulators Alternative. However, the Partial Reconductor/Shorter Insulators Alternative represents a larger temporary disturbance footprint. The scope and geographic extent of the Partial Reconductor/Shorter Insulators Alternative is presented in Figure 4.1-1. The Partial Reconductor/Shorter Insulators Alternative is feasible and meets the project objectives; it is carried through for analysis in Chapter 6.

4.1.4 Project Phasing Options

No project phasing options were considered. Because the primary purpose of the EPL Project is to remediate all identified discrepancies on the subject circuits as quickly as feasible, phasing options were not considered as any phasing approach would only delay achievement of the primary objective without any apparent environmental benefit. In addition, no significant environmental impacts were identified that could be ameliorated through the temporal phasing of the EPL Project.

4.1.5 Alternative Facility and Construction Activity Sites

Because the transmission lines included under the EPL Project are currently used to provide service to existing load and planned generation customers in addition to being used for the import of power, and because SCE must continue to provide service to those existing load and planned generation customers in addition to maintaining transmission capacity for imports, no alternative facility sites are feasible.

4.1.5.1 Substation Site Alternatives

Transmission line clearance remediation cannot be accomplished solely by the installation of a new substation. Consequently, no substation site alternatives were considered.

4.1.5.2 Construction Activity Site Alternatives

The very large majority of construction activity sites are fixed due to the presence of existing transmission infrastructure and the fixed location of the identified discrepancies. SCE evaluated numerous sites for staging areas; the feasible locations are included under the EPL Project.

4.1.6 Renewable Energy, Energy Conservation, Energy Efficiency, Demand Response, Distributed Energy Resources, and Energy Storage Alternatives

SCE considered energy storage facilities as an alternative to the EPL Project. For this alternative, SCE would deploy strategically placed energy storage facilities to reduce the loading on the existing Cima-Eldorado-Pisgah No.1 and No.2 220 kV circuits and the Lugo-Pisgah No.1 and No.2 220 kV circuits. By lowering loading on these lines, SCE would theoretically be able to operate these lines at a lower loading level. This would eliminate the need to perform some of the work on these lines because the reduced loading would reduce the sag on the conductor, which by itself would theoretically eliminate some, but not all, of discrepancies on these lines. For the EPL Project, however, SCE determined that even if the loading on these lines was reduced, some existing discrepancies would still require mitigation and thus lowering the loading would not meet the primary objective of the EPL Project. Additionally, when energy storage devices are in charging mode, they would act as a load on the line and therefore could add to the existing loading on the line, resulting in the need to move forward with remediating discrepancies. The addition of load due to the charging of energy storage devices could exacerbate line sag and GO 95 and/or NESC Section 23 discrepancies. Additionally, the energy storage facilities would need to discharge the power that was stored which would lead to increased loading on each of the lines that would still require remediation of discrepancies. Therefore, SCE concluded that this alternative would not achieve project objectives and therefore this alternative was dismissed as infeasible and not further considered.

Any alternatives employing Energy Conservation, Energy Efficiency, and/or Demand Response strategies would reduce the loading on the existing facilities. However, as previously mentioned, a reduction of load on these circuits would not eliminate all of the identified discrepancies on these circuits, and therefore would not meet the primary objective of the EPL Project. Therefore, because all alternatives employing load reducing techniques would not meet the project objectives, SCE eliminated them from further consideration.

4.1.7 Avoid or Limit the Construction of New Transmission-Voltage Facilities

The Alternative described below in Section 4.1.10, Alternative Engineering or Technological Approaches, would avoid or limit the construction of new transmission-voltage facilities. However, for the reasons discussed in that Section, the Alternative is infeasible.

4.1.8 Other Technological Alternatives

SCE evaluated the use of AC power flow control on the circuits included under the EPL Project as a means to remediate discrepancies. Because discrepancies are, to a certain extent, a function of power flow along a circuit, active management or control of the power flow could result in the clearance of discrepancies. Power flow control would entail the installation of new equipment at one or more of the existing substations; this equipment would work to limit current so as to not exceed the predetermined line rating. However, the installation and operation of such equipment would not mitigate all identified discrepancies, and thus would not meet the EPL Project's primary objective. Further, this approach could

also require additional work, including but not limited to line remediation on the EPL Project circuits and/or other circuits in addition to substation work, and thus SCE eliminated this alternative from further consideration.

4.1.9 Route Alternatives and Route Variations

No route alternatives or route variations were identified given that the deficiencies identified for remediation are fixed in space.

4.1.10 Alternative Engineering or Technological Approaches

SCE considered derating the existing Cima-Eldorado-Pisgah No.1 and No.2 220 kV circuits and the Lugo-Pisgah No.1 and No.2 220 kV circuits. This alternative was dismissed and not considered for further evaluation.

The Cima-Eldorado-Pisgah No.1 and No.2 220 kV circuits and the Lugo-Pisgah No.1 and No.2 220 kV circuits are part of a WECC transfer path identified as West of Colorado River (WOR; also known as Path 46), which is a set of high voltage transmission lines that interconnect southern Nevada and Arizona with Southern California and that import power to the load serving populations centers.

The total capacity allocated between each of the EPL circuits, 725 amps/289 MVA per circuit, is required to maintain SCE's Entitlements per the existing Transmission Control Agreement among the CAISO and Transmission Owners. Alternatives involving a reduction in the available capacity on each of the EPL circuits would impact SCE's Entitlements.[19] Derating the EPL circuits would encroach on the Entitlements of other Participating Transmission Owners which would trigger the need to re-evaluate and amend the existing Transmission Control Agreement and/or result in potential infrastructure/asset upgrades that would be required to maintain SCE's Entitlements without the need to encroach on the Entitlements of other Participating Transmission Owners.

The existing capacity on the Lugo-Pisgah No.1 and No.2 220 kV circuits must be maintained to accommodate generation interconnection projects that are scheduled and/or proposed to commence operation in the future. Derating and/or removing these lines would adversely impact these scheduled generation interconnection projects since they each are dependent on the capacity to transmit the power generated from their facilities to the load serving population centers. Derating and/or removing each of these circuits would also impact SCE's ability to meet its contractual obligations with each of the planned generation interconnection projects by not having the ability to provide the capacity would be required to transmit the generated power. Generation interconnection projects enter into agreements to move their individual projects forward based on the assumption that the transmission capacity they were studied with would be available at the time of interconnection. Having the transmission capacity decreased and/or eliminated altogether that the Interconnection Customer assumed would be available would reduce and/or negate the viability of these and future generation interconnection projects.

Therefore, the circuits cannot be derated. Additionally, even if the circuits were derated, some existing discrepancies would remain, and thus derating would not meet the primary objective, and thus SCE eliminated this alternative from further consideration.

[19] As defined within the Transmission Control Agreement and Entitlement isthe right of a Participating Transmission Owner obtained through contract or other means to use another entity's transmission facilities for the transmission of Energy.

4.2 No Project Alternative

CEQA requires an evaluation of the No Project Alternative so that decision makers can compare the impacts of approving the EPL Project with the impacts of not approving the project (CEQA Guidelines, Section 15126.6(e)). Under the No Project Alternative, no construction or modification of the existing electrical system would occur. Therefore, the No Project Alternative would not meet the EPL Project's primary objective because it would not remediate any identified discrepancies, and therefore the transmission lines would remain in violation of GO 95 standards.

Further, under the No Project Alternative, SCE would be in violation of the mitigation plan agreed to with WECC as described in Chapter 1 and 2. Because the No Project Alternative would not meet the EPL Project's objectives and if implemented SCE would not comply with the mitigation plan agreed to with WECC, this alternative is infeasible.

Under the No Project Alternative, the identified discrepancies would remain unaddressed, and SCE has not, at this time, developed a plan of action to address the identified discrepancies if the EPL Project is not approved. The No Project Alternative would not meet the EPL Project objectives.

4.3 Rejected Alternatives

None of the Alternatives addressed in Section 4.1 with the exception of the Partial Reconductor/Shorter Insulators Alternative were selected for analysis in Chapter 6.

The subsection in Section 4.1 for each rejected Alternative presents a summarized description and reasoning for why each Alternative would not meet the EPL Project's primary objective and/or is infeasible.

Because each rejected Alternative is not feasible and/or would fail to meet the EPL Project primary objective, SCE has not performed any analysis to determine if any significant impacts could result from their implementation. However, no rejected Alternative would reduce or avoid any significant environmental impact of the EPL Project, as no significant environmental impacts have been identified for the EPL Project.

No comments from the public or agencies on any of the Alternatives were received by SCE during preparation of the PEA document.

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INYO COUNTY

Death Valley National Park

Toiyabe National Forest

ELDORADO SUBSTATION

NEVADA

CALIFORNIA

CLARK COUNTY

SAN BERNARDINO COUNTY

CIMA SUBSTATION

Mojave National Preserve

PISGAH SWITCHYARD

Hesperia

LUGO SUBSTATION

San Bernardino National Forest

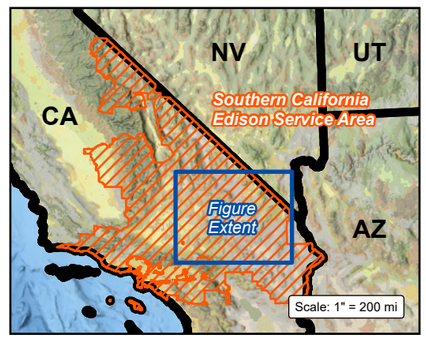
Legend

- State Boundary
- County Boundary
- National Park, Forest, or Preserve
- SCE Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Segment 6
- Alignment to be Reconductored
- Structure with Insulator to be Shortened

Notes

• Base map source: ESRI National Geographic Style.

Project Location



N

Miles

0 6 12

Scale: 1" = 12 mi

Eldorado-Pisgah-Lugo (EPL) 220 kV Project

Partial Reconductor/Shorter Insulators Alternative

ARCADIS

SOUTHERN CALIFORNIA EDISON
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FIGURE 4.1-1

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