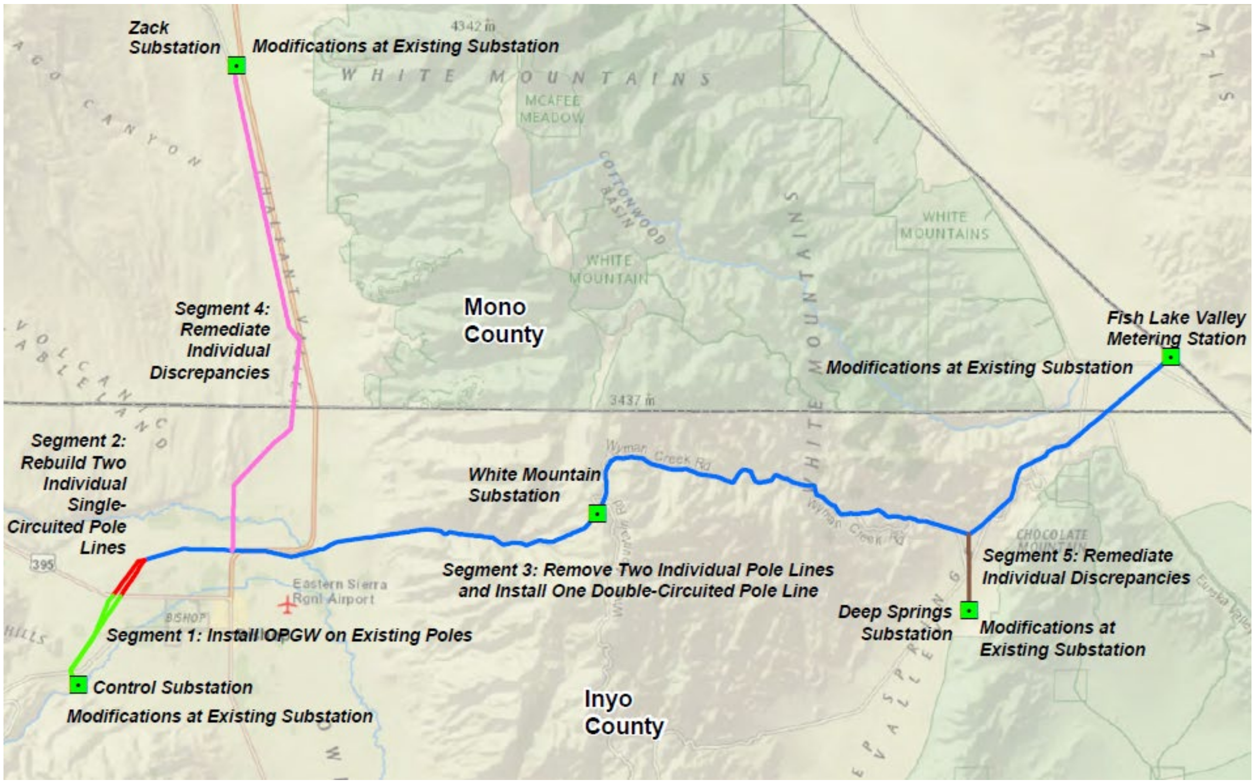


Proponent's Environmental Assessment for Southern California Edison's Control-Silver Peak Project

Aug 13, 2021 (PEA filing date)

Remove existing subtransmission structures, install new subtransmission structures, install telecommunications and system protection equipment, and modify equipment at existing substations.

The Control-Silver Peak Project would be located in Inyo County and Mono County.

Application A.21-XX-XX to the California Public Utilities Commission

Prepared by Arcadis
445 S. Figueroa Street
Suite 3650
Los Angeles, CA 90071
Geetha Shanmugasundaram
Power Delivery Lead
661.510.4003
Geetha.Shanmugasundaram@arcadis.com

Prepared for Southern California Edison
2 Innovation Way
Pomona, CA 91768
Warnetta Logan
Senior Project Manager
909.274.3850
Warnetta.logan@sce.com

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY 1-1
1.1 Proposed Project Summary 1-1
1.1.1 Purpose and Objective 1-1
1.1.2 Summary of Activities 1-2
1.2 Land Ownership and Right-of-Way Requirements 1-3
1.3 Areas of Controversy 1-3
1.4 Summary of Impacts 1-4
1.4.1 Impact Assessment Methodology 1-4
1.4.2 Impact Summary Table for the CSP Project 1-5
1.5 Summary of Alternatives 1-10
1.5.1 Highway 6 Alternative 1-11
1.5.2 Single-Circuit Pole Lines Alternative 1-11
1.5.3 No Project Alternative 1-11
1.6 Pre-filing Consultation and Public Outreach Summary 1-11
1.7 Conclusions 1-12
1.8 Remaining Issues 1-12
2 INTRODUCTION 2-1
2.1 Project Background 2-1
2.1.1 Purpose and Need 2-2
2.1.2 Project Objectives 2-2
2.1.3 Project Applicant(s) 2-3
2.2 Pre-filing Consultation and Public Outreach 2-3
2.2.1 Pre-filing Consultation and Public Outreach 2-3
2.2.2 Records of Consultation and Public Outreach 2-6
2.3 Environmental Review Process 2-7
2.3.1 Environmental Review Process 2-7
2.3.2 California Environmental Quality Act Review 2-7
2.3.3 National Environmental Policy Act Review 2-7
2.3.4 Pre-filing California Environmental Quality Act and National Environmental Policy Act Coordination 2-7
2.4 Document Organization 2-8
2.4.1 PEA Organization 2-8
3 PROPOSED PROJECT DESCRIPTION 3-1
3.1 Project Overview 3-1
3.1.1 Summary of the Proposed Project 3-1
3.1.2 Geographical Location of the CSP Project 3-1
3.2 Existing and Proposed System 3-2
3.2.1 Existing System 3-2
3.2.2 Proposed Project System 3-3
3.2.3 System Reliability 3-5

3.2.4 Planning Area ... 3-5
3.3 Project Components ... 3-5
3.3.1 Preliminary Design and Engineering ... 3-5
3.3.2 Segments, Components, and Phases ... 3-6
3.3.3 Existing Facilities ... 3-7
3.3.4 Proposed Facilities ... 3-10
3.3.5 Other Potentially Required Facilities ... 3-14
3.3.6 Future Expansions and Equipment Lifespans ... 3-15
3.3.7 Below-Ground Conductor/Cable Installations ... 3-15
3.3.8 Electric Substations and Switching Stations ... 3-16
3.3.9 Gas Pipelines ... 3-16
3.3.10 Gas Storage Facilities – Background and Resource Information ... 3-16
3.3.11 Gas Storage Facilities – Well-Head Sites ... 3-16
3.3.12 Gas Storage Facilities – Production and Injection ... 3-16
3.3.13 Gas Storage Facilities – Electrical Energy ... 3-17
3.3.14 Telecommunication Lines ... 3-17
3.4 Land Ownership, Rights-of-Way, and Easements ... 3-17
3.4.1 Land Ownership ... 3-17
3.4.2 Existing Rights-of-Way or Easements ... 3-18
3.4.3 New or Modified Rights-of-Way or Easements ... 3-18
3.4.4 Temporary Rights-of-Way or Easements ... 3-19
3.5 Construction ... 3-19
3.5.1 Construction Access (All Projects) ... 3-20
3.5.2 Staging Areas ... 3-24
3.5.3 Construction Work Areas ... 3-26
3.5.4 Site Preparation ... 3-30
3.5.5 Transmission Line Construction (Above Ground) ... 3-33
3.5.6 Transmission Line Construction (Below Ground) ... 3-43
3.5.7 Substation, Switching Stations, Gas Compressor Stations ... 3-43
3.5.8 Gas Pipelines ... 3-45
3.5.9 Gas Storage Facilities ... 3-45
3.5.10 Public Safety and Traffic Control ... 3-45
3.5.11 Dust, Erosion, and Runoff Controls ... 3-47
3.5.12 Water Use and Dewatering ... 3-48
3.5.13 Hazardous Materials and Management ... 3-48
3.5.14 Waste Generation and Management ... 3-50
3.5.15 Fire Prevention and Response ... 3-52
3.6 Construction Workforce, Equipment, Traffic, and Schedule ... 3-52
3.6.1 Construction Workforce ... 3-52
3.6.2 Construction Equipment ... 3-53
3.6.3 Construction Traffic ... 3-53
3.6.4 Construction Schedule ... 3-57

3.6.5 Work Schedule ... 3-58
3.7 Post-Construction ... 3-60
3.7.1 Configuring and Testing ... 3-60
3.7.2 Landscaping ... 3-60
3.7.3 Demobilization and Site Restoration ... 3-60
3.8 Operation and Maintenance ... 3-62
3.8.1 Regulations and Standards ... 3-63
3.8.2 System Controls and Operation Staff ... 3-63
3.8.3 Inspection Programs ... 3-63
3.8.4 Maintenance Programs ... 3-63
3.8.5 Vegetation Management Programs ... 3-65
3.9 Decommissioning ... 3-65
3.9.1 Decommissioning ... 3-65
3.10 Anticipated Permits and Approvals ... 3-65
3.10.1 Anticipated Permits and Approvals ... 3-65
3.10.2 Rights-of-Way or Easement Applications ... 3-65
3.11 Applicant Proposed Measures ... 3-66
3.12 Project Description Graphics, Mapbook, and GIS Requirements ... 3-66
3.12.1 Graphics ... 3-66
3.12.2 Mapbook ... 3-66
3.12.3 GIS Data ... 3-66
3.12.4 GIS Requirements ... 3-66
4 DESCRIPTION OF ALTERNATIVES ... 4-1
4.1 Alternatives Considered ... 4-1
4.1.1 Alternatives Suggested, Considered, or Studied by the CAISO or by CAISO Stakeholders ... 4-1
4.1.2 Alternatives Suggested by the Public or Agencies ... 4-1
4.1.3 Reduced Footprint Alternatives ... 4-1
4.1.4 Project Phasing Options ... 4-5
4.1.5 Alternative Facility and Construction Activity Sites ... 4-5
4.1.6 Renewable Energy, Energy Conservation, Energy Efficiency, Demand Response, Distributed Energy Resources, and Energy Storage Alternatives ... 4-5
4.1.7 Avoid or Limit the Construction of New Transmission-Voltage Facilities ... 4-7
4.1.8 Other Technological Alternatives ... 4-7
4.1.9 Route Alternatives and Route Variations ... 4-7
4.1.10 Alternative Engineering or Technological Approaches ... 4-8
4.2 No Project Alternative ... 4-10
4.3 Rejected Alternatives ... 4-11
5 ENVIRONMENTAL ANALYSIS ... 5-1
5.1 Aesthetics ... 5-2
5.1.1 Environmental Setting ... 5-2
5.1.2 Regulatory Setting ... 5-9
5.1.3 Impact Questions ... 5-15

5.1.4 Impact Analysis 5-15
5.1.5 CPUC Draft Environmental Measures 5-24
5.2 Agriculture and Forestry Resources 5-25
5.2.1 Environmental Setting 5-25
5.2.2 Regulatory Setting 5-26
5.2.3 Impact Questions 5-29
5.2.4 Impact Analyses 5-29
5.2.5 CPUC Draft Environmental Measures 5-31
5.3 Air Quality 5-32
5.3.1 Environmental Setting 5-32
5.3.2 Regulatory Setting 5-34
5.3.3 Impact Questions 5-36
5.3.4 Impact Analysis 5-37
5.3.5 CPUC Draft Environmental Measures 5-40
5.4 Biological Resources 5-42
5.4.1 Environmental Setting 5-42
5.4.2 Regulatory Setting 5-82
5.4.3 Impact Questions 5-89
5.4.4 Impact Analysis 5-90
5.4.5 CPUC Draft Environmental Measures 5-103
5.5 Cultural Resources 5-104
5.5.1 Environmental Setting 5-104
5.5.2 Regulatory Setting 5-125
5.5.3 Impact Questions 5-127
5.5.4 Impact Analysis 5-128
5.5.5 CPUC Draft Environmental Measures 5-133
5.6 Energy 5-134
5.6.1 Environmental Setting 5-134
5.6.2 Regulatory Setting 5-134
5.6.3 Impact Questions 5-135
5.6.4 Impact Analysis 5-135
5.6.5 CPUC Draft Environmental Measures 5-137
5.7 Geology, Soils, and Paleontological Resources 5-138
5.7.1 Environmental Setting 5-138
5.7.2 Regulatory Setting 5-148
5.7.3 Impact Questions 5-156
5.7.4 Impact Analysis 5-156
5.7.5 CPUC Draft Environmental Measures 5-160
5.8 Greenhouse Gas Emissions 5-161
5.8.1 Environmental Setting 5-161
5.8.2 Regulatory Setting 5-161
5.8.3 Impact Questions 5-163

5.8.4 Impact Analysis 5-163
5.8.5 CPUC Draft Environmental Measures 5-164
5.9 Hazards, Hazardous Materials, and Public Safety 5-165
5.9.1 Environmental Setting 5-165
5.9.2 Regulatory Setting 5-167
5.9.3 Impact Questions 5-172
5.9.4 Impact Analysis 5-173
5.9.5 CPUC Draft Environmental Measures 5-180
5.10 Hydrology and Water Quality 5-181
5.10.1 Environmental Setting 5-181
5.10.2 Regulatory Setting 5-184
5.10.3 Impact Questions 5-189
5.10.4 Impact Analysis 5-190
5.10.5 CPUC Draft Environmental Measures 5-196
5.11 Land Use and Planning 5-197
5.11.1 Environmental Setting 5-197
5.11.2 Regulatory Setting 5-199
5.11.3 Impact Questions 5-203
5.11.4 Impact Analysis 5-203
5.11.5 CPUC Draft Environmental Measures 5-204
5.12 Mineral Resources 5-205
5.12.1 Environmental Setting 5-205
5.12.2 Regulatory Setting 5-206
5.12.3 Impact Questions 5-208
5.12.4 Impact Analysis 5-208
5.12.5 CPUC Draft Environmental Measures 5-209
5.13 Noise 5-210
5.13.1 Environmental Setting 5-210
5.13.2 Regulatory Setting 5-211
5.13.3 Impact Questions 5-215
5.13.4 Impact Analysis 5-215
5.13.5 CPUC Draft Environmental Measures 5-219
5.14 Population and Housing 5-225
5.14.1 Environmental Setting 5-225
5.14.2 Regulatory Setting 5-226
5.14.3 Impact Questions 5-227
5.14.4 Impact Analysis 5-227
5.14.5 CPUC Draft Environmental Measures 5-228
5.15 Public Services 5-229
5.15.1 Environmental Setting 5-229
5.15.2 Regulatory Setting 5-231
5.15.3 Impact Questions 5-232

5.15.4 Impact Analysis 5-233
5.15.5 CPUC Draft Environmental Measures 5-234
5.16 Recreation 5-235
5.16.1 Environmental Setting 5-235
5.16.2 Regulatory Setting 5-236
5.16.3 Impact Questions 5-238
5.16.4 Impact Analysis 5-238
5.16.5 CPUC Draft Environmental Measures 5-240
5.17 Transportation 5-241
5.17.1 Environmental Setting 5-241
5.17.2 Regulatory Setting 5-243
5.17.3 Impact Questions 5-246
5.17.4 Impact Analysis 5-247
5.17.5 CPUC Draft Environmental Measures 5-252
5.18 Tribal Cultural Resources 5-253
5.18.1 Environmental Setting 5-253
5.18.2 Regulatory Setting 5-254
5.18.3 Impact Questions 5-254
5.18.4 Impact Analysis 5-255
5.18.5 CPUC Draft Environmental Measures 5-255
5.19 Utilities and Service Systems 5-256
5.19.1 Environmental Setting 5-256
5.19.2 Regulatory Setting 5-258
5.19.3 Impact Questions 5-260
5.19.4 Impact Analysis 5-260
5.19.5 CPUC Draft Environmental Measures 5-265
5.20 Wildfire 5-266
5.20.1 Environmental Setting 5-266
5.20.2 Regulatory Setting 5-268
5.20.3 Impact Questions 5-270
5.20.4 Impact Analysis 5-271
5.20.5 CPUC Draft Environmental Measures 5-273
5.21 Mandatory Findings of Significance 5-276
5.21.1 Impact Assessment for Mandatory Findings of Significance 5-276
6 COMPARISON OF ALTERNATIVES 6-1
6.1 Alternatives Comparison 6-1
6.1.1 Comparison of Ability of Each Alternative to Avoid or Reduce a Potentially Significant Impact 6-1
6.2 Alternatives Ranking 6-7
7 CUMULATIVE AND OTHER CEQA CONSIDERATIONS 7-1
7.1 Cumulative Impacts 7-1
7.1.1 List of Cumulative Projects 7-2
7.1.2 Geographic Scope 7-2

7.1.3 Cumulative Impact Analysis 7-3
7.2 Growth-Inducing Impacts 7-10
7.2.1 Growth-Inducing Impacts 7-10
8 LIST OF PREPARERS 8-1
8.1 List of Preparers 8-1
8.1.1 Southern California Edison 8-1
8.1.2 Arcadis 8-1
8.1.3 Environmental Intelligence 8-2
8.1.4 Environmental Vision 8-2
9 REFERENCES 9-1
9.1 Reference List 9-1
9.1.1 Aesthetics 9-1
9.1.2 Agriculture and Forestry Resources 9-2
9.1.3 Air Quality 9-3
9.1.4 Biological Resources 9-3
9.1.5 Cultural Resources 9-5
9.1.6 Energy 9-9
9.1.7 Geology, Soils, and Paleontological Resources 9-9
9.1.8 Greenhouse Gas Emissions 9-12
9.1.9 Hazards and Hazardous Materials 9-12
9.1.10 Hydrology and Water Quality 9-13
9.1.11 Land Use and Planning 9-13
9.1.12 Mineral Resources 9-14
9.1.13 Noise 9-14
9.1.14 Population and Housing 9-15
9.1.15 Public Services 9-15
9.1.16 Recreation 9-15
9.1.17 Transportation 9-16
9.1.18 Tribal Cultural Resources 9-17
9.1.19 Utilities and Service Systems 9-17
9.1.20 Wildfire 9-18

LIST OF TABLES

Table ES-1: Summary of Impacts and APMs for the CSP Project 1-5
Table 3.3-1: Existing Structures to be Removed or Modified 3-7
Table 3.3-2: Typical Subtransmission Structure Dimensions 3-12
Table 3.5-1: Access and Spur Road Land Disturbance Table 3-21
Table 3.5-2: Potential Staging Area and Construction Laydown Area Locations 3-24
Table 3.5-3: Work Area Disturbances 3-29
Table 3.5-4: Permanent Disturbance Associated with Structures 3-29
Table 3.5-5: Substation Surface Disturbance 3-42
Table 3.5-6: Types, Uses and Volumes of Hazardous Materials 3-49
Table 3.6-1: Construction Equipment and Workforce Estimates 3-53

Table 3.6-2: Proposed Construction Schedule 3-57
Table 3.10-1: Anticipated Permits and Approvals 3-67
Table 3.11-1: Applicant Proposed Measures 3-72
Table 4.2-1: Control-Silver Peak 'A' 55 kV Amperage Loading under Maximum Load / Maximum Export to NV Energy 4-10
Table 4.2-2: Control-Silver Peak 'C' 55 kV Amperage Loading under Maximum Load / Maximum Export to NV Energy 4-10
Table 5.1-1: Summary of Scenic Roadways Within the CSP Project Area 5-4
Table 5.1-2: Summary of Landscape Units 5-5
Table 5.1-3: Summary of Representative and KOP Photographs 5-7
Table 5.1-4: USFS Scenery Management System Scenic Integrity Objectives 5-10
Table 5.1-5: BLM Visual Management Classes and Goals 5-11
Table 5.1-6: Summary of Visual Effects at Key Viewpoints 5-20
Table 5.3-1: Air Quality Standards and Attainment Status for the Great Basin Valleys Air Basin 5-33
Table 5.3-2: Estimated Construction Emissions, Controlled 5-38
Table 5.3-3: Estimated Construction Emissions, Uncontrolled 5-39
Table 5.4-1: Biological Surveys Conducted within the CSP Project Alignment 5-42
Table 5.4-2: Natural Communities and Land Cover Types Mapped within the CSP Project Alignment 5-43
Table 5.4-3: Sensitive Natural Communities Mapped within the CSP Project Alignment 5-47
Table 5.4-4: Special-status Plant Species Observed within the CSP Project Alignment 5-51
Table 5.4-5: Special-status Plant Species Not Observed within the CSP Project Alignment 5-53
Table 5.4-6: Special-status Wildlife Species Observed within the CSP Project Alignment 5-63
Table 5.4-7: Special-status Wildlife Species Not Observed within the CSP Project Alignment 5-65
Table 5.4-8: Potential Impacts to Sensitive Natural Communities 5-97
Table 5.4-9: Jurisdictional Waters Impacts 5-100
Table 5.6-1: Fuel Consumption 5-137
Table 5.7-1: Holocene Fault Properties 5-141
Table 5.7-2: Geologic Units Along the CSP Project Alignment 5-145
Table 5.7-3: Mapped Soil Units and Soil Properties 5-147
Table 5.7-4: Potential Fossil Yield Classification (BLM 2016) 5-153
Table 5.9-1: Hazardous Materials and Waste Sites 5-165
Table 5.9-2: Segment Miles of CSP Project Alignment within Designated Fire Hazard Severity Zones 5-166
Table 5.9-3: Non-Project Metallic Objects 5-167
Table 5.10-1: Waterbodies Adjacent to or Crossed by CSP Project Alignment 5-182
Table 5.10-2: Beneficial Uses 5-187
Table 5.11-1: Land Use and Zoning Designations 5-199
Table 5.12-1: Mineral Resource Zone Definitions 5-207
Table 5.13-1: Distance from Sensitive Receptor Locations to CSP Project Alignment 5-211
Table 5.13-2: Construction Vibration Damage Criteria 5-212
Table 5.13-3: Typical Construction Equipment Noise Levels 5-215
Table 5.13-4: Construction Activity Noise Generation 5-216
Table 5.13-5: Vibration Source Levels for Typical Construction Equipment 5-217
Table 5.13-6: Construction Noise Levels 5-221
Table 5.14-1: Historical and Projected Population Data 5-225
Table 5.14-2: Housing Data 5-226
Table 5.14-3: Rental Vacancy Rates in the CSP Project Area 5-226
Table 5.15-1: Law Enforcement Stations Proximate to the CSP Project 5-229
Table 5.15-2: Fire Stations Proximate to the CSP Project 5-230
Table 5.15-3: Schools in the Vicinity of the CSP Project 5-230
Table 5.17-1: Existing Roadways 5-241
Table 5.17-2: Bus Routes and Frequencies 5-242

Table 5.17-3: Vehicle Miles Traveled 5-243
Table 5.17-4: Vehicle Miles Traveled, CSP Project Construction 5-251
Table 5.20-1: Segment Miles of CSP Project Alignment within Designated Fire Hazard Severity Zones 5-267
Table 5.20-2: Wildfires Along the CSP Project Alignment 5-267
Table 5.20-3: USDA Fire Effects Information System Vegetation Types 5-268
Table 6.2-1. Alternatives Ranking 6-7
Table 7.1-1: Cumulative Projects within 2 Miles 7-2

LIST OF FIGURES

Figure 1.1-1: Proposed Project Location
Figure 3.1-1: Discrepancy Remediation Approaches
Figure 3.2-1: Proposed and Existing Systems
Figure 3.4-1: Parcels for Acquisition
Figure 3.5-1: Staging Areas
Figure 3.5-2: Typical Pull-and-Tension/Stringing Site Set-Up
Figureset 3.5-3: Telecommunications Underground Routes
Figure 3.5-4: Telecommunications Conduit Install Detail
Figure 3.5:5: Vault/Pull Box Detail
Figureset 4.1-1: Decommission and Removal with Upgrades
Alternative Figure 4.1-2: Highway 6 Route Alternative
Figure 5.1-1a: Photograph Viewpoint Locations
Figureset 5.1-1b: Viewshed Analysis
Figureset 5.1-2: Representative Photographs
Figure 5.1-3a: USFS SIO Classifications
Figure 5.1-3b: BLM VRM Classifications
Figures 5.1-4 through 5.1-8: Existing Views and Visual Simulations
Figureset 5.2-1: Forest Lands
Figureset 5.4-1: Habitat Designations
Figureset 5.4-2: Sensitive Plant Species
Figureset 5.4-3: CNDDB Plant Species
Figureset 5.4-4: Sensitive Wildlife Species
Figureset 5.4-5: CNDDB Wildlife Species
Figure 5.4-6: Critical Habitat
Figureset 5.4-7: Sage Grouse
Figure 5.5-1: Cultural Resources APE
Figure 5.7-1: Principal Physiographic Areas
Figure 5.7-2: Faults
Figure 5.7-3: Alquist-Priolo Special Studies Zones
Figure 5.7-4: Earthquake Shaking Potential
Figure 5.7-5: Landslide Susceptibility
Figure 5.7-6: Generalized Geology
Figure 5.7-7: Soil Units
Figure 5.9-1: Metallic Objects
Figure 5.10-1: Perennial Waterbodies
Figure 5.10-2: Floodplains
Figure 5.10-3: Groundwater Basins and Aquifers
Figureset 5.10-4a: Groundwater Wells—Domestic Well Count
Figureset 5.10-4b: Groundwater Wells—Domestic Well Depth
Figureset 5.11-1: Land Use Designations

Figureset 5.11-2: Zoning Designations
Figure 5.12-1: Mines and Mineral Resources
Figure 5.13-1: Sensitive Receptors
Figure 5.14-1: Cities, Reservations, and Census Designated Places
Figure 5.16-1: Parks and Recreational Facilities
Figure 5.17-1: Circulation System
Figure 5.19-1: Unconnected Utilities
Figure 5.20-1: Fire Hazard Zones
Figure 5.20-2: Wildland Urban Interface
Figure 5.20-3: CPUC Fire Threat
Figure 5.20-4: Responsibility Areas
Figure 5.20-5: Fire Occurrence
Figure 5.20-6: Scott and Burgan Fire Behavior Fuel Modeling
Figure 7.1-1: Cumulative Projects

LIST OF APPENDICES[1]

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	Environmental Data Resources Report
Appendix G	Agency Consultation and Public Outreach Report and Records of Correspondence
Appendix H	Fire Management Plan Template
Appendix I	Wildfire Mitigation Plan
Appendix J	Visual Resources Technical Report
Appendix K	Paleontological Resources Technical Report
Appendix L	Vehicle Miles Traveled Calculations
Appendix M	Weather Data
Appendix N	GO 131-D 300’ Notice List
Appendix O	CPUC 1,000’ Mailing List

[1] 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 I through N to this PEA contain supporting materials as referenced in this PEA document; these Appendices are not identified in the *Guidelines*. The ‘Potentially Required Appendices and Supporting Materials’ listed in the *Guidelines* are not provided as these are either unnecessary to support the environmental impact analyses or conclusions presented in this PEA document, or the preparation of such documents is premature.

1 Executive Summary

This Chapter provides an Executive Summary for Southern California Edison Company's (SCE's) proposed Control-Silver Peak (CSP) Project.

1.1 Proposed Project Summary

The CSP Project proposes to perform work along the existing Control-Silver Peak 'A' 55 kilovolt (kV) Subtransmission Line, the Control-Silver Peak 'C' 55 kV Subtransmission Line, and substations and metering stations associated with those lines. The sections below provide a summary of the purpose, objective, and proposed activities.

1.1.1 Purpose and Objective

The design of electric 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."

The CSP Project is proposed to meet the following objective: Ensure compliance with standards contained in CPUC GO 95 and North American Electric Reliability Corporation (NERC) Facility Ratings while also maintaining reliable service to customers served by the subject lines, substations, and metering stations.

As described in Section 2.1.2 of this document, compliance would be attained through the remediation of discrepancies along two existing 55 kV subtransmission lines.[2] Remediating the discrepancies will

- Ensure compliance with standards contained in CPUC 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.
- Bring the lines into operational compliance with SCE's published facility rating, which requires a review of actual field conditions as recommended by NERC.[3]

Remediating the identified discrepancies will also comply with applicable Western Electricity Coordinating Council (WECC) reliability planning criteria: the work will be completed as detailed in the mitigation plan filed in 2007 by SCE and accepted by WECC.

---

[2] An individual instance of non-compliance with GO 95 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 subtransmission lines included under the CSP Project are as follows: Control- Silver Peak 'A' – 39 mega volt ampere (MVA) (405 A); Control- Silver Peak 'C' – 27 MVA (280 A).

1.1.2 Summary of Activities

To remediate the identified clearance discrepancies, SCE proposes to rebuild some portions of two existing subtransmission lines and to replace or modify existing subtransmission structures along other portions of these existing subtransmission lines.[4]

Where portions of the existing subtransmission lines are proposed to be rebuilt, existing subtransmission structures and the conductor carried by those structures would be removed, and new structures and conductor would be installed. The portions of the existing subtransmission lines that are proposed to be rebuilt are generally characterized by a high geographic density of discrepancies.

Where existing subtransmission poles are identified to be replaced or modified, only individual subtransmission poles and those adjacent to them would be replaced or modified. The existing conductor would generally be transferred to the replaced structure. Poles adjacent to replaced poles may be modified. The portions of the existing subtransmission lines where selective pole replacement is proposed are generally characterized by a low geographic density of discrepancies.

Where a distribution circuit is located on existing subtransmission poles that would be replaced, the distribution conductor and equipment would be either transferred to the replacement poles or the existing conductor would be removed, and new covered distribution conductor would be installed to reduce wildfire risk.

No new substations would be constructed under the CSP Project. Modifications at and adjacent to existing substations and the metering station will be necessary to accommodate the installation of new conductor and systems protection equipment.

This work will be performed along the length of the 55 kV subtransmission lines included in the CSP Project. The locations where specific work would occur is detailed in the sections below and shown in Figure 3.1-1.

1.1.2.1 Segment 1

Segment 1 of the CSP Project is located west of the City of Bishop. Segment 1 is 3.4 miles in length. There are two single-circuit pole lines in Segment 1. In Segment 1, the existing overhead groundwire (OHGW) that is installed on existing poles along one of the two pole lines found in Segment 1 would be removed and optical groundwire (OPGW) would be installed on those existing poles. This work is detailed in Section 3.3.4.2 of this document.

1.1.2.2 Segment 2

Segment 2 of the CSP Project is located northwest of the City of Bishop. Two existing single-circuit pole lines are located in Segment 2. The existing poles and conductor would be removed, and new poles and conductor would be installed along the 1.4-mile length of Segment 2. OPGW would be installed on new poles along one of the pole lines, and OHGW would be installed on new poles along the other pole line. This work is detailed in Section 3.3.4.2 of this document.

---

[4] 'Rebuilding' refers to the removal of all existing subtransmission poles and conductor along a given portion of existing subtransmission line and then the installation of new subtransmission poles and conductor in that portion. 'Replacing' refers to the installation of an individual new pole adjacent to an existing pole, the transfer of existing conductor from the existing pole to the new individual pole, and then removal of the existing pole. 'Modifying' refers to activities such as lowering of crossarms, installing or removing insulators, etc. on existing poles with no installation of new poles or conductor or removal of existing poles or conductor at the location of the pole being modified.

1.1.2.3 Segment 3

Segment 3 runs for approximately 37 miles from northwest of the City of Bishop to the California-Nevada border. Two existing single-circuit pole lines are located in Segment 3; the CSP Project would result in removal of one of the pole lines and conversion of the remaining pole line from a single-circuit configuration to a double-circuit configuration. The existing poles and conductor would be removed, and new double-circuit poles and conductor would be installed along the length of Segment 3. OPGW would be installed on new poles. This work is detailed in Section 3.3.4.2 of this document.

1.1.2.4 Segment 4

Segment 4 is located in the Chalfant Valley between the City of Bishop and the community of Hammil. In Segment 4, two existing poles would be removed and two replacement poles would be installed. The existing conductor attached to the poles would be transferred to the replacement poles. Insulators and other hardware on adjoining poles may be replaced or modified to accommodate the taller replacement poles. This work is detailed in Section 3.3.4.2 of this document.

1.1.2.5 Segment 5

Segment 5 is located in the Deep Springs Valley. In Segment 5, nine existing poles would be removed and nine replacement poles would be installed. The existing conductor attached to the poles would be transferred to the replacement poles. Insulators and other hardware on adjoining poles may be replaced or modified to accommodate the taller replacement poles. This work is detailed in Section 3.3.4.2 of this document.

1.1.2.6 Existing Substations

Under the CSP Project, work at existing substations and the metering station would include removing and installing conductor, installing system protection equipment and cable, modifying existing system protection equipment, and installing new equipment. This work is described in Sections 3.3.8 and 3.3.14 of this document.

1.2 Land Ownership and Right-of-Way Requirements

The CSP Project would be constructed and operated on federal lands managed by the Bureau of Land Management (BLM, Bishop and Ridgecrest Field Offices), federal lands managed by the United States Forest Service (USFS) Inyo National Forest (INF), lands owned the Los Angeles Department of Water and Power (LADWP), lands owned by Inyo County and Mono County (franchise along county roads and other properties), lands managed by the California Department of Transportation (Caltrans, along state highways), and private lands.

SCE possesses sufficient rights over portions of these lands but will need to acquire additional land rights prior to the start of construction of the CSP Project on portions of the INF, LADWP-owned parcels, county properties, and some privately-owned parcels. Existing and proposed land ownership and rights-of-way (ROWs) are addressed in detail in Section 3.4.

1.3 Areas of Controversy

No areas of controversy or major issues related to the CSP Project have been communicated to SCE by representatives from Inyo County, Mono County, or others contacted by SCE as described in Section 2.2 of this document. SCE anticipates possible areas of controversy may include: the use of helicopters along the project alignment within the INF; the interruption of public access along Silver Canyon Road and Wyman Creek Road during construction; the replacement of wood poles with modern equivalents; the potential to affect biological resources; potential impacts to cultural and tribal resources; and the overarching need for SCE to meet the objective of the project.

1.4 Summary of Impacts

1.4.1 Impact Assessment Methodology

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 CSP 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 CSP 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 CSP Project and alternatives are based upon a classification system with the following 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

SCE has proposed measures to reduce impacts to potentially affected resources or areas. These types of actions are referred to as Applicant Proposed Measures (APMs). Further, SCE will implement CPUC-identified Draft Environmental Measures as necessary and as applicable. APMs are considered in the impact assessment as part of the CSP Project's project description.

1.4.2 Impact Summary Table for the CSP Project

Table ES-1 provides a summary of impacts, classification of impacts, APMs that may be applied, and residual impacts. As shown in Table ES-1, the CSP Project would result in an impact that is significant and cannot be mitigated to a level that is less than significant (Class I). The impact analyses presented in Chapter 5 of this document indicate that, with implementation of APMs, the remaining potential environmental impacts associated with the CSP Project would be mitigated to a level that is less than significant or would not result in significant impacts.

Table ES-1: Summary of Impacts and APMs for the CSP Project

Impact	Impact Class	Applicant Proposed Measure[5]	Residual Impact
Impact AES-1: Have a substantial adverse effect on a scenic vista	III	None	LTS
Impact AES-2: Substantially damage scenic resources within a State Scenic Highway, including, but not limited to: trees, rock outcroppings, and historic buildings	III	None	LTS
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	None	LTS
Impact AES-4: Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area	III	AES-1	LTS
Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, to nonagricultural use	NI	None	NI
Impact AG-2: Conflict with existing zoning for agricultural use, or a Williamson Act contract	NI	None	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	None	NI
Impact AG-4: Result in the loss of forest land or conversion of forest land to non-forest use	III	None	LTS
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	None	NI

[5] The full text of APMs is presented in Table 3.11-1 of this document. Note that some APMs presented in this table are proposed not to reduce an otherwise-significant impact to a level that is less than significant, but to ameliorate further impacts that are, without application of the APM, already less than significant.

Table ES-1: Summary of Impacts and APMs for the CSP Project

Impact	Impact Class	Applicant Proposed Measure[5]	Residual Impact
Impact AIR-1: Conflict with or obstruct implementation of the applicable air quality plan	NI	None	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	II	AIR-1	LTS
Impact AIR-3: Expose sensitive receptors to substantial pollutant concentrations	III	None	LTS
Impact AIR-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people	III	None	LTS
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	II	BIO-BOT-01, BIO-BOT-02, BIO-GEN-1, BIO-RES-1, BIO-RES-2, BIO-AVI-1, BIO-AVI-2, BIO-AVI-3, BIO-AVI-4, BIO-AVI-5, BIO-MAM-1, BIO-MAM-2, WEAP, WET-1	LTS
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	II	BIO-GEN-1, WEAP, BIO-BOT-01, BIOT-BOT-02, BIO-RES-1, BIO-RES-2	LTS
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	II	BIO-RES-1, WET-1	LTS
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	BIO-MAM-1	LTS
Impact BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	III	None	LTS
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	None	NI
Impact BIO-7: Would the project create a substantial collision or electrocution risk for birds or bats?	III	BIO-AVI-6	LTS
Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource as defined in Section 15065.5	I	CUL-1, CUL-2, CUL-3, CUL-4, CUL-5, CUL-6, CUL-7, CUL-8, CUL-9	S
Impact CUL-2: Cause a substantial adverse change in the significance of an archeological resource pursuant to Section 15065.5	II	CUL-1, CUL-2, CUL-3, CUL-4, CUL-5, CUL-6	LTS
Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries	I	CUL-1, CUL-2, CUL-5, CUL-6	S
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	NOI-1	LTS
Impact EN-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency	NI	None	NI

Table ES-1: Summary of Impacts and APMs for the CSP Project

Impact	Impact Class	Applicant Proposed Measure[5]	Residual Impact
Impact EN-3: Add capacity for the purpose of serving a nonrenewable energy resource	NI	None	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	None	LTS
Impact GEO-2: Result in substantial soil erosion or the loss of topsoil	III	None	LTS
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	None	LTS
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	III	None	LTS
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	None	NI
Impact GEO-6: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	II	PAL-1, PAL-2, PAL-3	LTS
Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment	III	None	LTS
Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions	NI	None	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	HAZ-1	LTS
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	HAZ-1, HAZ-2	LTS
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	None	NI
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	None	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	III	None	LTS
Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	II	TRA-1	LTS

Table ES-1: Summary of Impacts and APMs for the CSP Project

Impact	Impact Class	Applicant Proposed Measure[5]	Residual Impact
Impact HAZ-7: Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires	III	HAZ-3	LTS
Impact HAZ-8: Create a significant hazard to air traffic from the installation of new power lines and structure	NI	None	NI
Impact HAZ-9: Create a significant hazard to the public or environment through the transport of heavy materials using helicopters	NI	None	NI
Impact HAZ-10: Expose people to a significant risk of injury or death involving unexploded ordnance	NI	None	NI
Impact HAZ-11: Expose workers or the public to excessive shock hazards	NI	None	NI
Impact HYDR-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality	III	HAZ-1, WET-1	LTS
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	None	LTS
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 stormwater drainage systems or provide substantial additional sources of polluted runoff; Impede or redirect flood flows	III	WET-1	LTS
Impact HYDR-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation	III	None	LTS
Impact HYDR-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan	III	None	LTS
Impact LU-1: Physically divide an established community	NI	None	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	None	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	None	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	None	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	NI	NOI-1	NI
Impact NOI-2: Generation of excessive groundborne vibration or groundborne noise levels	NI	None	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,	NI	None	NI

Table ES-1: Summary of Impacts and APMs for the CSP Project

Impact	Impact Class	Applicant Proposed Measure[5]	Residual Impact
where such a plan has not been adopted, within 2 miles of a public airport or public use airport			
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	None	NI
Impact POP-2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	NI	None	NI
Impact PUB-1: Result in substantial adverse physical impacts associated with the provision of new or 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?	NI	TRA-1	NI
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	None	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	None	NI
Impact REC-3: Reduce or prevent access to a designated recreation facility or area	II	REC-1, TRA-1	LTS
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	III	None	LTS
Impact REC-5: Damage recreational trails or facilities	NI	None	NI
Impact TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities	III	TRA-1	LTS
Impact TRA-2: Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b) (vehicle miles traveled)	NI	None	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	None	NI
Impact TRA-4: Result in inadequate emergency access.	III	TRA-1	LTS
Impact TRA-5: Create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations	III	TRA-1	LTS
Impact TRA-6: Interfere with walking or bicycling accessibility	NI	None	NI
Impact TRA-7: Substantially delay public transit	III	None	LTS
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	ND	UNK	ND

Table ES-1: Summary of Impacts and APMs for the CSP Project

Impact	Impact Class	Applicant Proposed Measure[5]	Residual Impact
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.			
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	None	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	None	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	None	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	None	NI
Impact UTIL-5: Comply with federal, state, and local management and reduction statutes and regulations related to solid waste	NI	None	NI
Impact UTIL-6: Increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts	NI	None	NI
Impact WF-1: Substantially impair an adopted emergency response/evacuation plan.	III	TRA-1	LTS
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	None	NI
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	HAZ-3	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	None	LTS

Notes:
LTS = Less Than Significant
S = Significant

1.5 Summary of Alternatives

Alternatives to the CSP Project are identified in accordance with CEQA Guidelines. Section 15126.6(a) of the Guidelines state:

> An [Environmental Impact Report] EIR shall describe a reasonable range of 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.

Section 15364 of the Guidelines defines "feasible" as:

> …capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

SCE has identified two feasible Alternatives to the CSP Project or portions of the project, and has identified a No Project Alternative; these are summarized briefly below and in greater detail in Sections 4.1 and 4.2, respectively. SCE also identified, and analyzed the feasibility of, a number of other Alternatives to the CSP Project; these Alternatives, and the criteria and rationale behind the findings of infeasibility for each, is presented in Section 4.1.

1.5.1 Highway 6 Alternative

The Highway 6 Alternative was developed to maintain electrical service to the Valley Electric Association, Inc. (VEA) while facilitating the remediation of discrepancies. The Highway 6 Alternative would entail the removal of the same infrastructure as under the proposed CSP Project, but would construct a new approximately 52 mile-long, 55 kV subtransmission line from the existing Zack Substation to an existing substation located near the town of Dyer in Nevada. This Alternative also includes the installation of new facilities to provide power to the White Mountain and Deep Springs substations, the construction of a new metering station, and modifications at the Zack Substation. This Alternative is addressed in Section 4.1.9.1 of this document.

1.5.2 Single-Circuit Pole Lines Alternative

The Single-Circuit Pole Line Alternative includes rebuilding both of the existing single-circuit pole lines in Segment 3 rather than rebuilding as a double-circuit single pole line under the CSP Project. Under this alternative, the two existing single-circuit pole lines would be removed and replaced with two new single-circuit pole lines; the existing wood poles would be replaced with wood pole-equivalent poles and tubular steel poles (TSPs). Remote control disconnect switches would be installed on each side of the tap connections to ensure that service restoration can be implemented in a timely manner should the loss of a line segment occur. This Alternative is addressed in Section 4.1.10.2 of this document.

1.5.3 No Project Alternative

Under the No Project Alternative, no construction or modification of the existing electrical system would occur. This Alternative is addressed in Section 4.2 of this document.

1.6 Pre-filing Consultation and Public Outreach Summary

SCE has periodically engaged in pre-filing consultation and public outreach activities related to the CSP Project since early 2018. To date, SCE has briefed public land managers (BLM, USFS, and LADWP); local jurisdictions crossed by or near the Project alignment (Inyo County, Mono County, and the City of Bishop); and the CPUC. Further, a mailer was sent to local residents and local government officials in 2019. See Section 2.2.1.1 below and Appendix G for further information.

Details regarding this pre-filing consultation with agencies and SCE's 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 CSP Project.

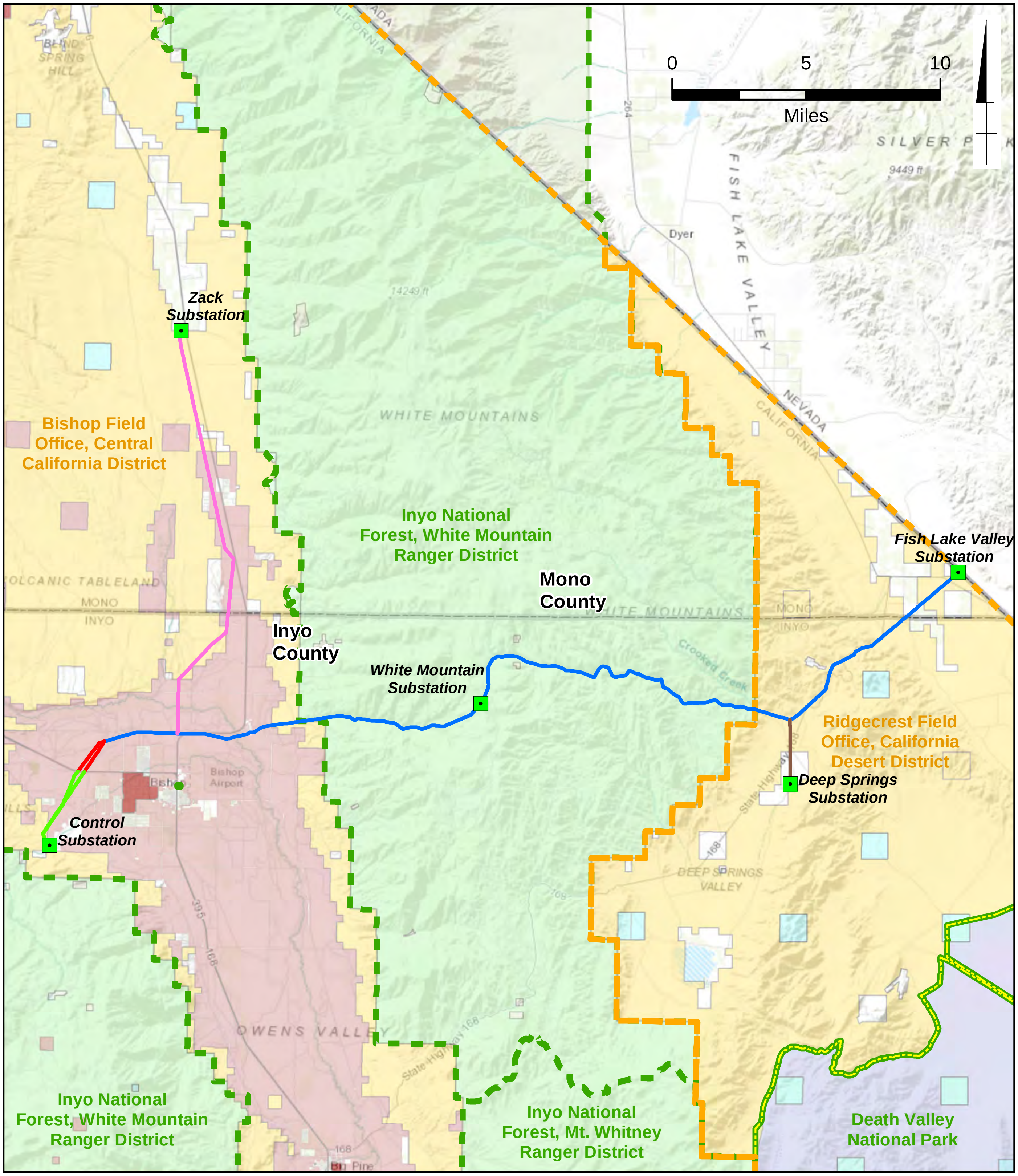
1.7 Conclusions

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

- The CSP Project, as described in Chapter 3, and the feasible Alternatives identified in Chapter 4, all meet the objective identified for the CSP Project.
- The CSP Project, as described in Chapter 3, presents very few potentially significant environmental impacts that cannot be mitigated to a level that is not significant.
- The CSP Project, as described in Chapter 3, presents fewer impacts and impacts of a lower-magnitude than presented by any of the feasible Alternatives.

1.8 Remaining Issues

No major environmental, engineering, or real properties-related issues remain to be resolved.



Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Counties
- California State Lands Commission
- Bureau of Land Management
- Bureau of Indian Affairs
- U.S. Forest Service
- National Park Service
- Los Angeles Department of Water and Power
- BLM Administrative Units
- National Forest Ranger District
- National Parks and Preserves

CONTROL-SILVER PEAK PROJECT

PROPOSED PROJECT LOCATION

ARCADIS SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURE 1.1-1

City: Div/Group: Created By: Last Saved By: Sharmayh4948
Project (Project #)
Z:\GISProjects_ENVI\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\CSP\Figure1-1-1_ProposedProjectLocation_CSP.mxd 2/26/2020 2:33:06 AM

Page left intentionally blank.

2 Introduction

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

This Chapter 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 CPUC 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 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.

In 2006, SCE identified that the clearances along some of its circuits were not compliant with the clearances required by GO 95 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 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.

---

[6] An individual instance of non-compliance with GO 95 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] 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.

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

The CSP Project is one activity within SCE's larger TLRR effort. The discrepancies identified on the subtransmission lines included under the CSP Project were identified through LiDAR and engineering modeling work performed under the TLRR effort.

2.1.1 Purpose and Need

2.1.1.1 Need for the Proposed Project

The CSP Project is needed to comply with GO 95 by remediating identified discrepancies identified through SCE's TLRR effort along the following:

- Control-Silver Peak 'A' 55 kV Subtransmission Line
- Control-Silver Peak 'C' 55 kV Subtransmission Line

2.1.1.2 Localities Served

The subtransmission lines included in the CSP Project would continue to serve the localities that they currently serve; these include localities found in Fish Lake Valley, Deep Springs Valley, Owens Valley, Chalfant Valley, Hammil Valley, and Benton Valley. There would be no change to either the local or regional utility system as a result of the CSP Project.

2.1.1.3 California Independent System Operator Consideration

The CSP Project was not identified by the CAISO; the need for the CSP Project was identified by SCE. CAISO did not identify the CSP Project because the remediation of clearance discrepancies is not the purview of the CAISO.

2.1.2 Project Objectives

2.1.2.1 Basic Project Objective

The CSP Project is being proposed to meet the following objective: Ensure compliance with standards contained in GO 95 and NERC Facility Ratings.

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 objective of the CSP Project is to remediate the identified discrepancies in order to comply with the standards contained in GO 95 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.[8]

---

8 Where a GO 95-specified clearance is exceeded by an SCE clearance standard, the more-conservative SCE clearance standard is used in the design.

Remediating the identified discrepancies will bring the lines into operational compliance with SCE's published facility rating, which requires a review of actual field conditions as recommended by NERC.[9] Remediating the identified discrepancies will also comply with applicable WECC reliability planning criteria.

2.1.2.2 How Project Implementation Will Achieve the Basic Project Objective

Implementation of the CSP Project will achieve the basic project objective by remediating existing discrepancies through the replacement of existing subtransmission structures and conductor with new structures and conductor that will be engineered and constructed to meet current standards, including the required ground clearance standards as outlined in GO 95.

2.1.2.3 Why Attainment of the Basic Project Objective is Necessary

Attainment of the basic project objective is necessary because SCE is required to comply with standards contained in GO 95 and based on SCE's published facility ratings in compliance with NERC FAC-008-1 and FAC-009-1.

Remediating the identified discrepancies will 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 are determined based on an established methodology or methodologies. Remediating the identified discrepancies will also comply with applicable WECC reliability planning criteria.

2.1.3 Project Applicant(s)

SCE is the project Applicant. SCE owns each component of the CSP 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

In October 2018, SCE submitted the CSP Project to the CAISO during CAISO's annual project request window. The submission included the purpose and need for the CSP Project, as well as an overview of the design for the CSP Project. This submittal was done as described in the CAISO's Business Practice Manual for the Transmission Planning Process.

---

[9] The rating of transmission lines depends on many factors including the electrical rating of elements, the thermal rating of elements, and conductor clearance.

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

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

2.2.1.1.3 United States Bureau of Land Management

In February 2018, SCE provided an in-depth presentation of the CSP Project during a joint meeting with the CPUC and BLM in which GO 131-D, CEQA and National Environmental Policy Act (NEPA) scheduling were discussed. Following the February 2018 meeting, SCE began holding monthly proponent's meetings with the CPUC and BLM to discuss coordination of the CEQA and NEPA review processes.

In August 2018, SCE met with the BLM National Project Manager for the CSP Project, BLM staff from the Bishop Field Office, and representatives from the INF to discuss a range of topics including project scope and schedule and permitting/licensing approaches.

In September 2018, SCE met with the BLM National Project Manager, BLM Desert District leadership and representatives from Desert District field offices, and the CPUC to provide an update on the TLRR projects that cross BLM-managed lands and the proposed timelines for each of the TLRR projects.

In April 2019, SCE met with the BLM National Project Manager and the CPUC to provide an update on the project descriptions for the TLRR projects and the proposed timelines for each of the projects.

In August 2019, SCE met with the BLM National Project Manager and the CPUC to provide an update on the project descriptions for the TLRR projects and the proposed timelines for each of the projects.

In April 2021, SCE provided a status update to the BLM.

In addition to these CEQA/NEPA coordination meetings, SCE continues to coordinate with BLM staff in the Bishop and Ridgecrest field offices regarding environmental resources. Currently, the BLM and USFS are reviewing the Class III and Historic Built Environment reports for cultural and historic resources and will be conducting a pre-project NEPA analysis for geotechnical investigations along the CSP Project alignment.

2.2.1.1.4 United States Forest Service

In August 2018, SCE met with staff from the CPUC, the BLM National Project Manager for the CSP Project, BLM staff from the Desert District and associated field offices, and representatives from the INF to discuss a range of topics, including project scope and schedule and permitting/licensing approaches. Since then, SCE has held meetings with USFS staff on a quarterly basis.

In August 2019, SCE met with the BLM National Project Manager for the CSP Project, and representatives from the INF to discuss several SCE activities in the INF, including Enhanced Overhead Inspection (EOI) and SCE's Pole Replacement Program.

In November 2020, SCE met with the new INF Forest Supervisor to go over SCE priorities, including the CSP Project. In addition, SCE held their annual meeting with INF staff in January 2021, where SCE provided a brief update on the CSP Project.

2.2.1.1.5 California Public Utilities Commission

Beginning in April 2016, SCE included in its quarterly presentations to the CPUC a high-level description of the TLRR effort projects that were expected to be licensed under GO 131-D; included in these presentations was information regarding the CSP Project. The CSP Project was most recently discussed at a quarterly meeting on March 26, 2021.

In February 2018, SCE provided an in-depth presentation of the components of the CSP Project during a joint meeting with the CPUC and BLM in which CEQA and NEPA scheduling were discussed. Following the February 2018 meeting, SCE began holding monthly Proponent meetings with the CPUC and BLM to discuss coordination of the CEQA and NEPA review processes. SCE, the CPUC, and the BLM met monthly throughout 2018 and 2019 and anticipate continuing monthly meetings throughout the PTC application process.

In September 2018, SCE met with the BLM National Project Manager, BLM Desert District leadership and representatives from Desert District field offices, and the CPUC to provide an update on TLRR projects that cross BLM-managed lands and the proposed timelines for each of the TLRR projects.

In late April 2019, SCE, the CPUC, and BLM met to review the current status of all TLRR projects, including CSP. SCE, the CPUC, and BLM met again on August 7, 2019 to discuss the status of the TLRR Projects.

As stated above, in April and August of 2019, SCE met with the BLM National Project Manager and the CPUC to provide an update on the CSP Project, descriptions for several TLRR projects, and the proposed timelines for each of these Projects.

On September 12, 2019, SCE, the CPUC, and the CPUC consultant attended a site visit to review the CSP Project alignment.

2.2.1.1.6 Inyo County

SCE Local Public Affairs staff briefed, in November 2019, and will brief, in 2021, County officials on the TLRR effort, including the CSP Project. SCE will continue updating Inyo County throughout project development.

2.2.1.1.7 Mono County

SCE Local Public Affairs staff briefed, in November 2019, and will brief, in 2021, County officials on the TLRR effort, including the CSP Project. SCE will continue updating Mono County throughout project development.

2.2.1.1.8 City of Bishop

SCE Local Public Affairs staff briefed, in November 2019, and will brief, in 2021, City officials on the CSP Project. SCE will continue updating the City throughout project development.

2.2.1.1.9 Los Angeles Department of Water and Power

SCE staff met with LADWP personnel in 2017, 2018, 2019, 2020 and 2021 to discuss details of the CSP Project including real estate, engineering design, and operations and maintenance (O&M) topics. SCE will continue to coordinate with LADWP throughout project development.

2.2.1.1.10 Native American Tribes Affiliated with the CSP Project Area

SCE has provided Native American tribes affiliated with the CSP Project area a mailer in October 2019 and an updated mailer in the summer of 2021. The mailers included a summary of the CSP Project, a figure illustrating the CSP Project alignment, and a summary of potential project activities. A copy of this mailer is provided in Appendix G to this PEA, and is available on SCE's Project website at https://www.sce.com/about-us/reliability/upgradingtransmission/cspproject.

The California Native American Heritage Commission (NAHC) was contacted on September 10, 2019, requesting a search of its Sacred Lands File (SLF) for the CSP Project area. A search of the SLF was completed for the Project on October 1, 2019, with positive results. On November 12, 2019, SCE sent letters of inquiry to the nine Native American individuals and organizations that were identified by the NAHC as contacts who may have knowledge of cultural resources within or adjacent to the proposed area. As of April 2, 2020, no responses have been received. Documentation of Native American correspondence are in Appendix D of Wilson and Gilbert 2021. Formal consultation under Section 106 of the NHPA will be conducted by the BLM, Bishop Field Office, serving as the lead federal agency for the CSP Project. Consultation under Assembly Bill (AB) 52 will be conducted by the CPUC, serving as the lead state agency.

2.2.1.1.11 Private Landowners and Homeowner Associations

SCE sent local residents and local government officials a mailer in October 2019 and an updated mailer was sent in the summer of 2021. This mailer included a summary of the CSP Project, a figure illustrating the CSP Project alignment, and a summary of potential project activities. A copy of this mailer is provided in Appendix G to this PEA, and is available on SCE's Project website at https://www.sce.com/about-us/reliability/upgradingtransmission/cspproject.

2.2.1.1.12 Developers for Large Housing or Commercial Projects Near the CSP Project Area

SCE is not aware of any planned large housing or commercial project near the CSP Project alignment.

2.2.1.1.13 Other Utility Owners and Operators

SCE has communicated with NV Energy and VEA regarding the CSP Project and its Alternatives (see Section 4.1 below).

2.2.1.1.14 Federal, State, and Local Fire Management Agencies

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

2.2.1.2 Significant Outcomes

No significant outcomes of consultation were incorporated into the CSP Project. No areas of controversy or major issues related to the CSP Project have been communicated to SCE by representatives from Inyo County, Mono County, or others contacted as described above.

2.2.1.3 Development that Could Coincide or Conflict With Project Activities

SCE is not aware of any developments that could coincide or conflict with project activities (i.e., developments within or immediately adjacent to the existing subtransmission line alignments).

2.2.2 Records of Consultation and Public Outreach

Contact information, notification materials, meeting dates and materials, meeting notes, and records of communication organized by entity are provided in Appendix G.

2.3 Environmental Review Process

2.3.1 Environmental Review Process

The CSP Project will be subject to environmental review under NEPA and CEQA. The environmental review processes are anticipated to be performed generally in parallel. The federal and state environmental review process schedules are anticipated to extend from late-2021 until late 2023.

2.3.2 California Environmental Quality Act Review

2.3.2.1 CPUC as CEQA Lead Agency

Pursuant to GO 131-D, SCE is applying to the CPUC for a PTC authorizing SCE to construct the CSP Project. Further pursuant to GO 131-D, in order to issue a PTC, the CPUC must find that the project complies with CEQA. Therefore, the CPUC will be the Lead agency under CEQA for the CSP Project because it has the greatest responsibility for supervising or approving the project as a whole (14 Cal.Code Regs. § 15051(b)).

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

The BLM, USFS, the U.S. Army Corps of Engineers (USACE), the U.S. Fish and Wildlife Service (USFWS), Caltrans, the California Department of Fish and Wildlife (CDFW), and Lahontan Regional Water Quality Control Board (RWQCB), among others, may have discretionary permitting authority over aspects of the CSP Project.

2.3.2.3 Federal, State, and Local Agencies Not Expected to Have Discretionary Permitting Authority

Caltrans, LADWP, City of Bishop, Inyo County, and Mono County may have ministerial permitting authority over aspects of the CSP Project.

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 CSP Project located on federal lands, those elements of the CSP Project that may result in impacts to federally-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 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 is as described in Section 2.2. The coordination to-date has identified that separate CEQA and NEPA processes will be engaged for the CSP Project. SCE submitted a pre-filing Draft PEA in early-2020. SCE included additional information and made clarification to this PEA based upon comments on the pre-filing Draft PEA provided by CPUC Energy Division staff.

2.4 Document Organization

2.4.1 PEA Organization

The CSP Project PEA document contains the following Chapters; 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 Chapter 1, Executive Summary

This Chapter includes a summary of the CSP 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 CSP 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 Chapter 2, Introduction

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

2.4.1.3 Chapter 3, CSP Project Description

This Chapter includes an overview of the CSP Project; a description of the existing and proposed system; a presentation of the components of the CSP Project; information related to land ownership, rights-of-way, 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; a listing of anticipated permits and approvals; and a table presenting APMs.

2.4.1.4 Chapter 4, Description of Alternatives

This Chapter identifies and describes Alternatives to the CSP Project; includes a discussion of a No Project Alternative; and lists Alternatives identified and considered, but rejected.

2.4.1.5 Chapter 5, Environmental Analysis

This Chapter 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 Chapter 6, Comparison of Alternatives

This Chapter compares each Alternative described in Chapter 4 against the CSP Project in terms of each alternative's ability to avoid or reduce a potentially significant impact. This Chapter also provides a detailed table that summarizes the Applicant's comparison results and ranks the alternatives in order of environmental superiority.

2.4.1.7 Chapter 7, Cumulative Impacts and Other CEQA Considerations

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

2.4.1.8 Chapter 8, List of Preparers

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

2.4.1.9 Chapter 9, References

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

2.4.1.10 Required PEA Appendices and Supporting Materials

SCE is submitting with this PEA those "Required PEA Appendices and Supporting Materials" listed 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 that are applicable and necessary to support the environmental impact analyses contained in Chapters 5 and 6.

Page left intentionally blank.

3 Proposed Project Description

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

3.1 Project Overview

3.1.1 Summary of the Proposed Project

The CSP Project proposes to remediate clearance discrepancies associated with existing subtransmission lines. To remediate these discrepancies, SCE proposes to rebuild two single-circuit pole lines as a double-circuit pole line and to selectively replace or modify existing subtransmission structures along other portions of these existing subtransmission lines. The locations where these differing discrepancy remediation approaches would be applied are presented in Figure 3.1-1.

Where portions of the existing subtransmission lines are proposed to be rebuilt, existing subtransmission structures and the conductor carried by those structures would be removed, and new structures and conductor would be installed. The portions of the existing subtransmission lines that are proposed to be rebuilt are generally characterized by a high geographic density of discrepancies that must be remediated and/or the presence of aged infrastructure that precludes other means of remediating discrepancies.

Where existing subtransmission poles are identified to be replaced or modified, only individual subtransmission poles and those adjacent to them would be replaced or modified. The existing conductor would generally be transferred to the replaced or modified structure. The portions of the existing subtransmission lines where selective replacement or modification are proposed are generally characterized by a low geographic density of discrepancies that must be remediated and/or existing infrastructure that is amenable to modification.

Where a distribution circuit is located on existing subtransmission poles that would be replaced, the distribution conductor and equipment would be transferred to the replacement poles or the existing conductor would be removed, and new distribution conductor would be installed.

No new substations would be constructed under the CSP Project. Work at existing substations and at a metering station under the CSP Project would be limited in scope and performed within or adjacent to the existing facilities.

3.1.2 Geographical Location of the CSP Project

The CSP Project is located in California.[10] The subtransmission lines included in the CSP Project are located in unincorporated Inyo County and unincorporated Mono County. An overview map of the CSP Project location is presented in Figure 1.1-1, CSP Project Location.

[10] NV Energy would perform upgrades at its West Tonopah Substation located in Esmeralda County, NV to enable the safer construction of the CSP Project. Authorization for such upgrades would be obtained by NV Energy from the authority(ies) with jurisdiction over such lands and activities.

3.2 Existing and Proposed System

3.2.1 Existing System

3.2.1.1 Existing Utility System

The CSP Project-related system is defined by the subtransmission lines on which discrepancies have been identified, and the substations that bound, or are found along, those portions of the subtransmission lines.[11] Therefore, the CSP Project-related existing utility system comprises the following:

- Circuits/Subtransmission Lines[12]
  - Control-Silver Peak 'A' 55 kV Subtransmission Line
  - Control-Silver Peak 'C' 55 kV Subtransmission Line
- Substations
  - Control Substation
  - Deep Springs Substation
  - Fish Lake Valley Metering Station
  - Metering Station CS 542
  - White Mountain Substation
  - Zack Substation

3.2.1.2 Users and Area Served by the Existing Utility System

The CSP Project would not provide service to any new users or areas; the existing users and areas served by the infrastructure included under the CSP Project would continue to be served by the replacement infrastructure.

3.2.1.3 Proposed Project and the Existing Local and Regional Systems

The CSP Project represents only the replacement of existing infrastructure with new infrastructure, and therefore the infrastructure is an existing, and will be a continuing, part of the existing local and regional systems.

3.2.1.4 Schematic Diagram of the Existing System Features

Figure 3.2-1, Existing and Proposed System, provides a schematic diagram of the existing CSP Project-related system.

3.2.1.5 Detailed Maps and Associated GIS Data for Existing Facilities that would be Modified

Detailed maps are presented in Appendix A; GIS data will be provided to the CPUC under separate electronic cover.

---

[11] Note that the subtransmission lines included under the CSP Project are connected to subtransmission lines operated by NV Energy through a system tie at the California-Nevada border.

[12] The term 'circuit' and 'subtransmission line' are used interchangeably in this document.

3.2.2 Proposed Project System

3.2.2.1 Proposed Project by Component

A description of the whole of the CSP Project by component is provided below in Section 3.3. There are no interrelated activities that are part of the whole of the action. To remediate the identified clearance discrepancies, SCE proposes to rebuild some portions of two existing subtransmission lines and to replace or modify existing subtransmission structures along other portions of these existing subtransmission lines.

Where portions of the existing subtransmission lines are proposed to be rebuilt, existing subtransmission structures and the conductor carried by those structures would be removed, and new structures and conductor would be installed. The portions of the existing subtransmission lines that are proposed to be rebuilt are generally characterized by a high geographic density of discrepancies.

Where existing subtransmission poles are identified to be replaced or modified, only individual subtransmission poles and those adjacent to them would be replaced or modified. The portions of the existing subtransmission lines where selective pole replacement is proposed are generally characterized by a low geographic density of discrepancies.

Where a distribution circuit is located on existing subtransmission poles that would be replaced, the distribution conductor and equipment would be either transferred to the replacement poles or the existing conductor would be removed, and new covered distribution conductor would be installed.

No new substations would be constructed under the CSP Project. Modifications at and adjacent to existing substations and the metering station will be necessary to accommodate the installation of new conductor and systems protection equipment.

This work will be performed along the length of the 55 kV subtransmission lines included in the CSP Project. The locations where specific work would occur is detailed in the sections below and shown in Figure 3.1-1.

3.2.2.1.1 Segment 1

Segment 1 of the CSP Project is located west of the City of Bishop. Segment 1 is 3.4 miles in length. In Segment 1, the OHGW installed on existing poles along one of the two pole lines found in Segment 1 would be removed and OPGW would be installed on those poles. This work is detailed in Section 3.3.4.2 of this document.

3.2.2.1.2 Segment 2

Segment 2 of the CSP Project is located northwest of the City of Bishop. Two existing single-circuit pole lines are located in Segment 2. The existing poles and conductor would be removed, and new poles and conductor would be installed along the 1.4-mile length of Segment 2. OPGW would be installed on new poles along one of the pole lines, and OHGW would be installed on new poles along the other pole line. This work is detailed in Section 3.3.4.2 of this document.

3.2.2.1.3 Segment 3

Segment 3 runs for approximately 37 miles from northwest of the City of Bishop to the California-Nevada border. Two existing single-circuit pole lines are located in Segment 3; the CSP Project would result in removal of one of the pole lines and rebuilding the remaining pole line from a single-circuit configuration to a double-circuit configuration. The existing poles and conductor would be removed, and new double-circuited-circuit poles and conductor would be installed along the length of Segment 3. OPGW would be installed on new poles. This work is detailed in Section 3.3.4.2 of this document.

3.2.2.1.4 Segment 4

Segment 4 is located in the Chalfant Valley between the City of Bishop and the community of Hammil. In Segment 4, two existing poles would be removed and two replacement poles would be installed. The existing conductor and cable attached to the poles would be transferred to the replacement poles. Insulators and other hardware on adjoining poles may be modified to accommodate the taller replacement poles. This work is detailed in Section 3.3.4.2 of this document.

3.2.2.1.5 Segment 5

Segment 5 is located in the Deep Springs Valley. In Segment 5, nine existing poles would be removed and nine replacement poles would be installed. The existing conductor and cable attached to the poles would be transferred to the replacement poles. Insulators and other hardware on adjoining poles may be modified to accommodate the taller replacement poles. This work is detailed in Section 3.3.4.2 of this document.

3.2.2.1.6 Existing Substations

Under the CSP Project, work at existing substations and the metering station would include removing and installing conductor, installing system protection equipment and cable, modifying existing system protection equipment, and installing new equipment. This work is described in Sections 3.3.8 and 3.3.14 of this document.

3.2.2.2 System Features

With the exception of the addition of OPGW (see Section 3.3.14), no system features would be added as part of the CSP Project, no system features would be modified, and no system features would be disconnected and left in place.

3.2.2.3 Expected Capacities of the Proposed Facilities

The CSP Project would not change the existing capacity of the system. The CSP Project is designed to remediate discrepancies; it is not designed to increase 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 by existing substation equipment, which will not be changed under the CSP Project. Therefore, because substation equipment would not be replaced or upgraded under the CSP Project, the system-level capacity would not be changed.

3.2.2.4 Initial and Full Buildout of the Proposed Facilities

The CSP Project, as proposed, represents the full buildout of the CSP Project facilities; there is no initial buildout associated with the CSP Project.

3.2.2.5 System Tie or Loop for Reliability

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

3.2.2.6 Users and Area Served by the Proposed Utility System

The CSP Project would not provide service to any new users or areas; the existing users and areas served by the infrastructure included under the CSP Project would continue to be served by the replacement infrastructure.

3.2.2.7 Schematic Diagram of the Proposed System Features

Figure 3.2-1, Existing and Proposed System, provides a schematic diagram of the post-construction CSP Project-related system.

3.2.3 System Reliability

The CSP Project will not create a second system tie or loop for reliability. The subtransmission lines and substations included under the CSP Project currently are part of the existing utility system; because the CSP Project will only replace portions of the existing utility system, the infrastructure included under the CSP Project will continue to relate to and support, unchanged, 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 CSP Project. SCE defines a system planning area when considering projects intended to address load growth in the SCE system. As the CSP 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 CSP 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 CSP Project are presented in subsequent sections: the approximate locations of replacement structures to be installed and existing structures to be removed are presented in Appendix A; the dimensions of these structures are presented in Section 3.3.4; and the limits of areas that would be needed to construct the facilities included under the CSP Project are presented graphically in Appendix A and described in Section 3.5.

3.3.1.2 Preliminary Design Drawings

Appendix A includes preliminary design drawings for the replacement structures included as part of the CSP Project; these drawings approximate a 60 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

The CSP Project is divided into the following five Segments:

- Segment 1 consists of portions of the Control-Silver Peak 'A' and 'C' 55 kV circuits. Segment 1 spans from the Control Substation located near the City of Bishop to where the CSP Project alignment intersects U.S. Highway 395 (U.S. 395). Segment 1 is approximately 3.4 miles in length. Segment 1 is located in Inyo County.
- Segment 2 consists of portions of the Control-Silver Peak 'A' and 'C' 55 kV circuits. Segment 2 spans from the point where the CSP Project alignment intersects U.S. 395 located near the City of Bishop to the point where the two pole lines will merge north-northeast of the U.S. 395 crossing. Segment 2 is approximately 1.4 miles in length. Segment 2 is located in Inyo County.
- Segment 3 consists of portions of the Control-Silver Peak 'A' and 'C' 55 kV circuits. Segment 3 spans from the eastern end of Segment 2 to the Fish Lake Valley Metering Station located west of the California-Nevada border, approximately 2 miles east of the community of Oasis. Segment 3 is approximately 37.3 miles in length. The existing 'A' and 'C' circuits generally parallel each other along the length of Segment 3. Metering station CS 542 is located in Segment 3 where Segment 4 intersects the Segment. Segment 3 is located in Inyo County and Mono County.
- Segment 4 consists of that portion of the Control-Silver Peak 'C' 55 kV circuit known as the Zack Tap. Segment 4 spans from Segment 3 north of the City of Bishop to the Zack Substation. Segment 4 is located in Inyo County and Mono County; it is approximately 16.0 miles in length.
- Segment 5 consists of that portion of the Control-Silver Peak 'A' 55 kV circuit known as the Deep Springs Tap. Segment 5 spans from Segment 3 south to the Deep Springs Substation. Segment 5 is located in Inyo County; it is approximately 2.4 miles in length.

3.3.2.2 Components

The CSP Project includes the following components; these are described in greater detail in subsequent sections.

3.3.2.2.1 Subtransmission

The CSP Project would rebuild infrastructure along 57.1 miles of existing 66 kV subtransmission circuits by:

- Removing existing subtransmission wood poles and wood pole H-frames, and replacing them with TSPs, TSP H-frames, and wood pole-equivalents.[13]
- Removing existing conductor and installing new Aluminum Conductor Composite Core (ACCC) or Aluminum Conductor Steel Reinforced (ACSR) subtransmission conductor on replacement structures.
- Installing OPGW, All-Dielectric Self-Supporting (ADSS) fiber optic cable, and OHGW for system protection.

3.3.2.2.2 Distribution

Distribution circuits are installed on existing poles in Segments 3, 4, and 5. This infrastructure will be transferred from existing structures to replacement structures or the existing infrastructure will be left in-

[13] 'Wood pole-equivalents' include wood poles, lightweight steel (LWS) poles, ductile iron (DI), and composite poles.

place and the poles on which the infrastructure is installed would be topped above the distribution circuit and appurtenances, or the poles will be left at their existing height.

3.3.2.2.3 Substations

The CSP Project would include the following substation-related work:

- Disconnect existing conductor from existing positions at the White Mountain Substation and connect new conductor to existing positions.
- Install new OPGW and OHGW and make minor modifications to the existing terminal racks at White Mountain substation to accommodate the new OPGW and OHGW.
- Install telecommunication equipment on existing rack structures, install cable in new or existing underground cable raceways, and install new or replacement telecommunications infrastructure within existing cabinets, control buildings, or Mechanical and Electrical Equipment Rooms (MEERs) within the Control Substation and at the Fish Lake Valley Metering Station.
- Update relay settings at Control, Deep Springs, White Mountain, and Zack substations.
- Install a capacitor bank and circuit breaker at Fish Lake Valley Metering Station.

3.3.2.3 Phases

There is one phase associated with the CSP Project: the construction phase. This PEA addresses the construction phase and its potential impacts. Construction of the CSP Project will not be phased; construction of any one component or all components could be performed at any one time.

3.3.2.4 Overview Map

An overview map showing each segment is provided in Figure 1.1-1.

3.3.3 Existing Facilities

3.3.3.1 Types of Existing Facilities to be Removed or Modified

Existing poles and H-frames, and the conductor and OHGW (where installed) supported by those structures, would be removed under the CSP Project. Existing poles and TSPs would be modified to accommodate OPGW. Existing infrastructure at Control, Deep Springs, White Mountain, and Zack substations modified. Fish Lake Valley Metering Station will be expanded. No other facilities would be removed or modified under the CSP Project.

3.3.3.1.1 Structures to be Removed

Under the CSP Project, existing subtransmission structures (poles and H-frames) would be removed. Existing structures to be removed would be removed completely, except as described below. Diagrams of the existing structures to be removed are presented in Appendix A. The typical dimensions of such structures are presented in Table 3.3-1.

Table 3.3-1: 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			
Pole/H-frame	0	61	NR

Table 3.3-1: 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 2			
TSP	0	2	NR
Pole	49	0	24-63
Segment 3			
Pole	1,505	0	24-63
H-frame	3	0	31-33
Segment 4			
Pole	2	4	35-47
Segment 5			
Pole	8	11	35-47
NR. Modification of poles and TSPs will not materially increase the height of the poles or TSPs.			

3.3.3.1.2 Structures to be Modified

In Segment 1, approximately 61 poles would be modified to accommodate OPGW. In Segment 2, approximately 2 TSPs would be modified to accommodate OPGW. In Segment 4 approximately 4 poles, and in Segment 5 approximately 11 poles, would be modified to accommodate the taller replacement poles to be installed adjacent to the poles to be removed.

3.3.3.1.3 Conductor to be Removed

At present, the existing conductor installed along the CSP Project subtransmission lines is a mix of 2/0-stranded copper conductor, 4/0 all aluminum conductor (AAC), and 4/0 ACSR conductor with diameters of approximately 0.41 inches, 0.52 inches, and 0.56 inches, respectively. Approximately 232 miles of existing conductor would be removed. The hardware associated with the existing conductor, including insulators, clamps, fittings, etc. would also be removed as part of the CSP Project.

3.3.3.2 Description of Existing Facilities by Segment

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

3.3.3.2.1 Segment 1

No poles or conductor would be removed in Segment 1. Approximately 3.4 miles of existing OHGW would be removed.

3.3.3.2.2 Segment 2

Two generally parallel pole lines are present in Segment 2. The existing subtransmission poles in Segment 2 are single-circuit. Approximately 49 existing structures would be removed. Approximately 8.1 miles of existing conductor would be removed.

3.3.3.2.3 Segment 3

Two generally parallel pole lines are present in Segment 3. Existing subtransmission structures in Segment 3 are single-circuit. Approximately 1,508 existing structures would be removed. Approximately 223.8 miles of existing conductor would be removed.

3.3.3.2.4 Segment 4

Existing subtransmission structures in Segment 4 are single-circuit with a distribution circuit underbuild. Approximately 2 existing structures would be removed. No conductor would be removed.

3.3.3.2.5 Segment 5

Existing subtransmission structures in Segment 5 are single-circuit; some poles have a distribution circuit underbuild. Approximate 8 existing poles would be removed; no conductor or distribution circuit would be removed.

3.3.3.3 Above-Ground and Below-Ground Facilities

All facilities to be removed are above-ground facilities; no below-ground facilities (underground conduit, cable, etc.) would be removed under the CSP Project.

Wood poles and H-frames are direct-buried. The entirety of a wood pole identified for removal (both the above-ground and below-ground portions) would be removed unless removal of the below-ground portion presents potential environmental impacts that could be avoided by leaving the below-ground portion in-place.

The embedded depth of wood poles and wood-pole H-frames is not known. The above-ground height of the existing wood poles and wood pole H-frames that would be removed are presented in Table 3.3-1.

3.3.3.4 Replacement, Removal, Modification, or Abandonment of Existing Facilities

The existing poles and H-frames proposed for replacement would be removed completely, including the above- and below-ground portions of the poles and H-frames. These existing facilities would be removed as they will no longer be needed after replacement infrastructure is installed.

3.3.3.5 Names, Types, and Materials of Existing Facilities

The following facilities would be removed or modified under the CSP Project:

- TSPs: TSPs are self-supporting monopole structures.
- Pole: Poles are self-supporting or guyed structures.
- H-frame: H-frames are self-supporting or guyed H-frame structures constructed from two poles and a horizontal member.

There are no capacities or volumes associated with any of the facilities to be removed or modified under the CSP Project; SCE takes this item in the *Guidelines* to be relevant to natural gas projects and not electric infrastructure-related projects.

3.3.3.6 Existing Facility Diagram

Appendix A includes drawings of the existing structure types that would be removed under the CSP Project.

3.3.3.7 Surface Colors, Textures, Light Reflectivity, and Lighting

With only a few exceptions, poles and pole H-frames to be removed are brown in color; the surface texture is grainy and often vertically-striated; the poles and H-frames are generally not light reflective as they are wood; and there is no lighting on the existing poles and H-frames. A small number of existing lightweight steel (LWS) poles would be removed; these galvanized steel poles are grey in color, with a dulled finish and a spangle pattern; there is no lighting on the existing LWS poles. The conductor to be removed is dark in color and is not light-reflective. Appendix A includes drawings of the existing structure types that would be removed under the CSP Project.

3.3.4 Proposed Facilities

3.3.4.1 Facilities to be Installed or Modified

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

Under the CSP Project, new subtransmission structures, new subtransmission conductor, and new OPGW and OHGW would be installed. Existing substations would be modified as addressed below in Section 3.3.8. The locations of these facilities are presented in Appendix A.

3.3.4.1.1 Subtransmission Structures Description

New single TSPs, TSP H-frames, and single wood pole-equivalents, and new conductor, OPGW, and OHGW to be supported on those structures, would be installed under the CSP Project. No other wholly-new facilities would be installed under the CSP Project. Replacement structures would be located proximate to existing structures in the existing alignments.

TSPs are engineered monopole structures constructed from galvanized steel; the design of a given TSP is specific to that given TSP's location and engineering considerations. TSPs would be either installed on a drilled, poured-in-place, concrete footing that would form the structure foundation, would be installed on drilled micro-piles, or would be direct-buried. Wood pole-equivalents are monopole structures constructed from wood, ductile iron, or galvanized steel; wood pole-equivalents are not engineered for a specific location but are rather designed/engineered for a range of applications. Wood pole-equivalents 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. TSP H-frames are constructed from two TSPs supporting a horizontal member between them.

In Segment 3, double-circuit structures would replace the existing single-circuit structures. In all other Segments, the configuration of structures would be unchanged (e.g., an existing single-circuit structure would be replaced with a new single-circuit structure).

Subtransmission 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. Subtransmission 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 CSP Project, new ACCC or ACSR conductor would be installed along the lengths of Segments 2 and 3. These conductors have similar diameters (0.673 inches and 0.72 inches, respectively), and would be non-specular. Approximately 232 miles of new conductor would be installed (accounting for three miles of conductor per mile of single-circuit alignment in Segment 2, and six miles of conductor per mile of double-circuit alignment in Segment 3).

OHGW would be installed on one of the pole lines in Segment 2 and on the new double-circuit structures in Segment 3. The OHGW would be approximately 0.5 inches in diameter and would be non-specular. Approximately 38.7 miles of OPGW would be installed.

OPGW would be installed along the lengths of Segments 1, 2, and 3. The OPGW would be installed for system protection, and would also serve as a communications link between Control Substation and the

Fish Lake Valley Metering Station. The OPGW would be non-specular and would have a diameter of approximately 0.5 inches. Approximately 42 miles of new OPGW would be installed. The OPGW would be installed overhead at the top of structures.

3.3.4.2 Description of Facilities by Segment

An accounting of the numbers and types of facilities 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.

3.3.4.2.1.1 Segment 1

The following components will be installed in Segment 1:

- Install approximately 3.4 miles of OPGW on existing structures.

3.3.4.2.1.2 Segment 2

The following components will be installed in Segment 2:

- Install approximately 25 single-circuit wood pole-equivalents.
- Modify approximately 2 existing single-circuit TSPs.
- Install two circuits of new conductor on new poles along both pole lines in the 1.35-mile length of Segment 2.
- Install approximately 1.4 miles of OPGW on existing and new poles.
- Install approximately 1.4 miles of OHGW on existing and new poles.

3.3.4.2.1.3 Segment 3

The following components will be installed in Segment 3:

- Install approximately 529 double-circuit wood pole-equivalents.
- Install approximately 137 double-circuit TSPs.
- Install approximately 8 single-circuit TSP H-frames.
- Install two circuits of new conductor on new poles along the 37.3-mile length of Segment 3.
- Install approximately 37.3 miles of OPGW on new poles.

3.3.4.2.1.4 Segment 4

The following components will be installed in Segment 4:

- Install approximately 2 single-circuit wood pole-equivalents and transfer existing conductor and third-party infrastructure (if present) to new poles.

3.3.4.2.1.5 Segment 5

The following components will be installed in Segment 5:

- Install approximately 8 single-circuit wood pole-equivalents and transfer existing conductor and third-party infrastructure (if present) to new poles.

Table 3.3-2: Typical Subtransmission Structure Dimensions

Pole Type	Proposed Number of Structures	Approximate Height Above Ground (feet)	Approximate Pole Diameter (feet)	Approximate Foundation Depth (TSPs) or Burial Depth (Wood Pole-Equivalents) (feet)	Approximate Foundation Diameter (TSPs) or Auger Width (Wood Pole-Equivalents) (feet)	Approximate Concrete Volume (cubic yards)
Segment 2						
Wood Pole-Equivalent	25	65 – 93	1.4 – 1.9	8 – 11	2.0 – 2.5	—
Segment 3						
TSP	137	60 – 90	1.9 – 2.5	10 – 40	4.0 – 6.0	5—21
TSP H-Frame	8	50 – 65	1.3	10 – 20	4.0	1.1—4.7
Wood Pole-Equivalent	529	56 – 106	1.3 – 2.5	8 – 13	2.0 – 3.0	—
Segment 4						
Wood Pole-Equivalent	2	40-56	1-3	6-8	2-4	—
Segment 5						
Wood Pole-Equivalent	8	40-56	1-3	6-8	2-4	—

Note:
Subtransmission structure dimensions based upon installation of ACSR conductor; structures would be approximately 5 to 10 feet shorter if ACCC conductor is installed.

3.3.4.3 Above-ground and Below-ground Facilities

All facilities to be installed under the CSP Project, with the exception of those facilities addressed in Section 3.3.7, are considered above-ground facilities. The TSPs and wood pole-equivalents to be installed have both above-ground and below-ground portions; TSPs would be installed on concrete foundations or on micro-piles, or could be direct-buried, and wood pole-equivalents would be direct-buried with a small band of slurry at ground line for corrosion mitigation purposes. The range of burial depth or size of foundations associated with the TSPs and wood pole-equivalents is presented in Table 3.3-2.

3.3.4.4 Different Facilities

No unique poles such as riser poles (overhead conductor-to-underground conductor configuration poles) would be installed under the CSP Project. Dead-end structures, or those installed at high-angle inflection points, would generally be of a larger diameter than adjoining tangent structures (see Table 3.3-2: Typical Subtransmission Structure Dimensions, for the dimensions of all structures, including dead-end structures).

Guys are typically used when wood pole-equivalents are located on angles or corners to provide support to the poles. Guys may also be used on tangent/suspension poles 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 wood pole-equivalents 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 roads are included under the CSP Project.

3.3.4.5.2 Foundations

TSPs, or equivalent structures, would generally 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 21 cubic yards of concrete.

Where necessary, micro-pile foundations may be used. Installation of micro-piles would require the drilling of several smaller diameter holes (approximately 7-10, 8-inch holes) for each footing. Rebar is placed 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.

The foundations necessary to support new equipment at Fish Lake Valley Metering Station is addressed in Section 3.5.7.1.

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 CSP Project.

3.3.4.6 Permanent and Temporary Facilities

No temporary facilities (i.e., poles, shoo-fly lines, mobile substations, mobile compressors, transformers, capacitors, switch racks, compressors, valves, or driveways) are included in the CSP Project.

3.3.4.7 Names, Types, and Materials of Proposed Facilities

The following facilities would be installed under the CSP Project:

- Tubular Steel Pole: TSPs are self-supporting monopole structures constructed from galvanized steel.
- Tubular Steel Pole H-frame: TSP H-frames are self-supporting H-frame structures constructed from two TSPs and a horizontal member attached to two galvanized steel TSPs.
- Wood Pole-Equivalent: Wood pole-equivalents are self-supporting or guyed monopole structures constructed from wood, ductile iron, composite materials, or galvanized steel.

In addition, some existing wood pole-equivalents would be modified under the CSP Project.

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

3.3.4.8 Diagrams of the Proposed Structures

Diagrams of the proposed structures are 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 wood pole-equivalents constructed from galvanized steel installed under the CSP Project would be grey in color, with a dull finish. Because the galvanized steel is dulled, the light reflectivity of the TSPs and these wood pole-equivalents is moderate and lessens over time as the poles weather. Wood pole-equivalents constructed from ductile iron installed under the CSP Project would be dark brown in color and would be non-reflective. No lighting would be installed on any new structures installed under the CSP Project. The conductor, OHGW, and OPGW to be installed would be non-specular.

3.3.5 Other Potentially Required Facilities

3.3.5.1 Unconnected Utilities or Other Types of Infrastructure

The CSP Project would not require the modification or replacement of unconnected utilities or other types of infrastructure. Unconnected, third-party infrastructure is present on poles in Segment 3; where present, this infrastructure (street lights) may be permanently relocated to replacement poles; alternately, these poles would be topped above the height of the street lights, or the poles may be left at their existing height after removal of the subtransmission conductor. The locations of unconnected utilities and other types of infrastructure are displayed on Figure 5.19-1.

3.3.5.2 Aviation Lighting and/or Marking

SCE does not believe that any component of the CSP Project will require aviation lighting or marking.

SCE will file Federal Aviation Administration (FAA) notifications for structures installed under the CSP Project, as required. With respect to structures, the FAA will conduct its own analysis and may recommend no changes to the design of the proposed structures; or may recommend redesigning any proposed structures near an airport to reduce the height of such structures; or marking the structures, including the addition of aviation lighting; or placement of marker balls on wire spans.

SCE will evaluate the FAA recommendations for reasonableness and feasibility, and in accordance with Title 14, Part 77 of the Code of Federal Regulations (CFR), SCE may petition the FAA for a discretionary review of a determination to address any issues with the FAA determination. FAA agency determinations for permanent structures typically are valid for 18 months, and, therefore, such notifications would be filed upon completion of final engineering and before construction commences. The entirety of the CSP Project would be built within a combination of existing SCE fee-owned property, SCE ROWs, and/or properties to be acquired and all construction activities would be performed at a distance from airport activity sufficient to minimize safety concerns to construction personnel.

Subtransmission poles/towers/catenaries at heights greater than or equal to 200 feet are anticipated to require FAA notifications, as are subtransmission structures located in the vicinity of airports. SCE will consult with the FAA and consider recommendations, to the extent feasible. Typical recommendations include, but are not limited to, the following: installation of marker balls on spans (on OPGW) between structures, and/or installation of lighting on structures. Generally, marking or lighting is recommended by the FAA for those spans or structures that exceed 200 feet in height above ground level (AGL); however, marking or lighting may be recommended for spans and structures that are less than 200 feet AGL, but located within close proximity to an airport or other high-density aviation environment. FAA recommendations of guidelines and standards for marking and lighting are included in Advisory Circular AC 70/7460-1L.

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

The need for slope stabilization, including retaining walls, is addressed in sections 3.5.1.1.2, 3.5.2.2.6, and 3.5.4.5.

The CSP Project would not include additional civil engineering requirements to address site conditions or slope stabilization issues. The establishment and use of construction work areas would not require slope stabilization; where structures are located in areas with steep slopes, structures would 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.

If, during the final engineering process, the need for retaining walls is identified, the location, length, height, and type of such walls 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. Local ministerial permits required would also be obtained.

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 CSP Project.

3.3.6.2 Expected Usable Life

The structures, conductor, OPGW, OHGW, and substation equipment to be installed under the CSP 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 CSP Project; the project is designed to remediate line 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 CSP Project.

3.3.7 Below-Ground Conductor/Cable Installations

3.3.7.1 Type of Line to be Installed

No electrical conductor would be installed below-ground under the CSP Project. Fiber optic cable would be installed underground at and in the vicinity of Control Substation and the Fish Lake Valley Metering Station.

3.3.7.2 Type of Casing

The fiber optic cable would be installed in a concrete-encased duct bank system. The dimensions of the duct bank are presented in Figure 3.5-4, Telecommunications Conduit Details.

3.3.7.3 Type of Infrastructure Installed within the Duct Bank

Fiber optic cable only would be installed within the duct banks.

3.3.8 Electric Substations and Switching Stations

Some work at the Fish Lake Valley Metering Station would take place under the CSP Project. No subtransmission-related expansion or major modification of Control Substation, Deep Springs Substation, White Mountain Substation, or Zack Substation is included in the CSP Project.[14]

Subtransmission-related work within White Mountain Substation will include disconnecting existing conductor from existing substation equipment and connecting new conductor to existing substation equipment. Minor modifications to the existing rack at this substation may be required so that OHGW can be installed between the rack and the getaway structure. These minor modifications could include installation of new hardware to which the OHGW would be attached, or structural reinforcement of the existing racks.

Subtransmission-related work at the Fish Lake Valley Metering Station would include installation of a capacitor bank and circuit breaker. Following installation, existing conductor would be disconnected from existing substation equipment and new conductor would be connected to the new substation equipment.

3.3.8.1 Transformer Banks

No transformer banks would be added under the CSP Project.

3.3.8.2 Gas Insulated Switchgear

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

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

No operation and maintenance facilities would be installed under the CSP Project. At Control Substation and the Fish Lake Valley Metering Station, Supervisory Control and Data Acquisition (SCADA) equipment and telecommunications-related modifications would include the installation of equipment on existing rack structures, the installation of cable in new or existing underground cable raceways, and the installation of new or replacement of existing telecommunications infrastructure within existing control buildings or MEERs. Systems protection-related modifications at the three facilities will include reprogramming relays.

3.3.9 Gas Pipelines

No gas pipelines are included in the CSP Project.

3.3.10 Gas Storage Facilities – Background and Resource Information

No gas storage facilities are included in the CSP Project.

3.3.11 Gas Storage Facilities – Well-Head Sites

No gas storage facilities are included in the CSP Project.

3.3.12 Gas Storage Facilities – Production and Injection

No gas storage facilities are included in the CSP Project.

---

14 Modifications to the NV Energy-owned West Tonopah Substation, located in the State of Nevada, would be necessary to enable the backfeed of the SCE-owned Deep Springs Substation and Fish Lake Valley Metering Station from the NV Energy system during construction of the CSP Project. Because the entirety of this work would occur in the State of Nevada, it is not subject to the approval or oversight of the CPUC, and is mentioned here solely for informational purposes only and to maintain consistency between this PEA document and similar documents being developed for the purposes of obtaining Federal authorization for the CSP Project.

3.3.13 Gas Storage Facilities – Electrical Energy

No gas storage facilities are included in the CSP Project.

3.3.14 Telecommunication Lines

3.3.14.1 Type and Length

Two types of telecommunication line will be installed under the CSP Project. The OPGW that would be installed under the CSP Project serves as both system protection (e.g., lightning protection) and as a telecommunication line; OPGW would be installed overhead on replacement structures. Approximately 38.7 miles of OPGW would be installed. The installation location and characteristics of the OPGW to be installed above-ground is addressed in Section 3.3.4.1.2, Conductor/Cable above.

Fiber optic cable would be installed below-ground within and immediately adjacent to the Control Substation and the Fish Lake Valley Metering Station. Fiber optic cable would be routed below-ground from the control building, MEER, or telecommunications cabinet at these substations to a getaway structure, and then would transition to an above-ground configuration. Approximately 1,005 feet of fiber optic cable would be installed underground in these locations.

In Segment 1, where the existing subtransmission lines are crossed overhead by other transmission lines, ADSS fiber optic cable may be installed below the conductor on the existing structures instead of OPGW being installed at the top of the replacement structure; this may be necessary to maintain adequate clearances to the other transmission lines' conductors.

3.3.14.2 Antenna and Node Facilities

No antenna or node facilities are part of the project.

3.3.14.3 Below-Ground Telecommunication Lines

Below-ground telecommunication line would be installed in PVC conduit placed in a trench with a minimum depth greater than 30 inches (Figure 3.5-4, Telecommunications Conduit Details).

3.3.14.4 Above-Ground Telecommunication Lines

Above-ground telecommunication line would be installed on existing poles or on poles installed under the CSP Project. Existing poles would be used in Segment 1 and Segment 2. No guy wire or pole changes are required to support the OPGW on existing poles.

Additional infrastructure such as splice boxes and risers, among other infrastructure, may be installed on existing poles. Risers are small-diameter (2-5 inch) plastic or galvanized steel conduit attached with strapping to poles or other structures through which fiber optic cable is placed to transition from an overhead to an underground configuration. Splice boxes are metal or plastic enclosures, frequently of dimensions approximating 36 x 36 x 10-inch, that are attached to attached to subtransmission structures with strapping.

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

3.4.1 Land Ownership

The CSP Project is located on private lands with the following exceptions:

- Federal Land
    - Approximately 11.1 miles of the CSP Project alignment is located on lands managed by the BLM.

- Approximately 20.1 miles of the CSP Project alignment is located on lands managed by the USFS.
- State Land
  - The CSP Project is located on/over state lands where the alignment crosses state highways.
- County/City Lands
  - Approximately 14.9 miles of the CSP Project alignment is located on lands owned by LADWP
  - The CSP Project alignment is located on county lands where the alignment crosses county-owned or maintained roadways and on county-owned lands.

Work at Control, Deep Springs, White Mountain, and Zack substations, and at Fish Lake Valley Metering Station, would be performed on lands owned by SCE or on lands over which SCE maintains valid rights.

3.4.2 Existing Rights-of-Way or Easements

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

Existing ROWs or easements are found across the length of the CSP Project alignment. The existing rights-of-way on BLM lands are generally 80 feet wide. The existing easements on LADWP lands range from 20 to 150 feet wide. Easements over private lands vary in width from 25 feet to 50 feet. Portions of each Segment are located within or cross over areas within franchise.

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

The CSP Project proposes to replace, modify, and install facilities within or in close proximity to the existing facility alignment and will be able to use portions of the existing rights.

3.4.3 New or Modified Rights-of-Way or Easements

3.4.3.1 New Permanent or Modified ROWs or Easements that are Required

SCE may need to obtain new permanent or modified easements over approximately 13 miles of the CSP alignment where work that will be performed under the CSP Project will be located on BLM-managed lands.

SCE may need to obtain new permanent or modified ROWs or easements over approximately 8.5 miles of the CSP Project alignment located on LADWP-owned lands.

SCE may need to obtain new permanent or modified ROWs or easements over approximately 1.2 miles of the CSP Project alignment located on privately-owned lands where work would occur.

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

New permanent easements over private lands would be obtained by SCE through negotiations with landowners. New permanent or modified ROWs on public lands would be obtained from the relevant public agency through that agency's designated process. The need for land acquisitions will be finalized during Final Engineering.

3.4.3.3 Site Plans

The parcels and the anticipated ROWs or easements are shown in Figure 3.4-1.

3.4.3.4 Properties/Parcels That May Require Acquisition

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

3.4.3.5 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.

3.4.3.6 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 CSP Project.

3.4.4 Temporary Rights-of-Way or Easements

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

No temporary ROWs would be required to access project areas; Temporary Construction Easements (TCEs) would be obtained by SCE prior to construction. Most construction areas would be accessed via existing access roads, which are either currently addressed under existing permanent ROWs or easements, will be addressed under new or modified permanent ROWs or easements, or will be addressed through one or more TCEs.

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

Construction work areas located along the project alignment that may require temporary rights consist of conductor stringing sites, structure installation/removal locations, guard sites, staging areas, construction laydown areas, and helicopter landing zones. Most temporary construction areas would be located partially within SCE's existing ROWs or easements; use of these portions within SCE's existing ROWs or easements would not necessitate the acquisition of a TCE and/or other permit. However, SCE anticipates obtaining TCEs and/or other permits for all construction work areas that extend beyond SCE's existing easements on private lands and LADWP lands, including portions of the staging areas listed in Section 3.5.2 below. For temporary construction work areas on USFS and/or BLM lands, the respective governmental agency will issue Temporary Use Permit (TUP) approvals.

3.4.4.3 Temporary Rights-of-Way or Easements: Acquisition

TUPs on federal lands (if needed) would be applied for as part of the CSP Project's approval by federal agencies. On non-federal and state lands, SCE will work with appropriate landowners to acquire any necessary TCEs and/or other permits. Pursuant to Cal. Pub. Util. Code Section 612, SCE also has the power of eminent domain to acquire any necessary rights of for construction.

3.5 Construction

The following subsections describe the construction activities associated with the CSP Project.

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

Subtransmission line roads are classified into two groups; access roads and spur roads. Access roads are through roads that run between tower sites and serve as the main transportation route along subtransmission 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 CSP Project alignment; this network would be accessed from paved and unpaved public roads.

Approximately 65.2 miles of existing access and spur roads in Segments 2 and 3 would be employed for construction of the CSP Project.[15] The widths of these roads vary across the CSP Project alignment, but are generally 15 to 25 feet wide; these roads account for 128.8 acres of existing permanent disturbance (Table 3.5-1).

Approximately 0.9 miles of the CSP Project alignment are located immediately adjacent to paved public roads from which CSP Project-related infrastructure will be installed or removed. The width of this roadway is approximately 30 feet; this road accounts for approximately 3.6 acres of existing permanent disturbance.

3.5.1.1.2 Existing Access Roads: Modifications

At present, access roads in Segments 2 and 3 are projected to require minor rehabilitation work, including regrading and repair of the existing roadbed. 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 minor rehabilitation, vegetation within the road prism would be removed or trimmed to the width of the prism. In some locations, road base (crushed rock), temporary plating or matting may be placed within the existing road prism. This road base, temporary plating, or matting may be laid to compensate for soft soils. Road base, plating, or matting would be removed at the end of construction. This activity may be repeated as required during the course of the Project.

Prior to the start of construction, some of the existing 65.2 miles of existing access and spur roads may require additional rehabilitation. The extent and scope of this rehabilitation is unknown at this time, as field conditions along the CSP Project alignment are subject to change. The types of rehabilitation that may be required could include:

- Widening of the existing roadbed at curves and other locations.
- Installation of new, or repair of existing, wet crossings, water bars, overside drains and pipe culverts to allow for construction traffic usage, as well as to prevent road damage due to uncontrolled water flow.
- Repair and stabilization of slides, washouts, and other slope failures.

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. In some instances, a temporary bridge may be placed over a culverted or bridged waterway if plating or

[15] The limited scopes of work in Segments 1, 4, and 5 can be accomplished without access road rehabilitation.

matting will not adequately protect the culverts or if an existing bridge is not suitable for 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 CSP Project activities. SCE and construction contractor crews would utilize paved and unpaved public roads to access SCE's network of unpaved access roads; work would 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 will comply with the conditions of the permit(s), including conditions related to the repair of incidental road damage.

Table 3.5-1: Access and Spur Road Land Disturbance Table

Project Feature	Description	Existing Permanent Disturbance (acres)	Acres to be Restored	Additional Permanent Disturbance (acres)
Existing Dirt Access and Spur Roads	Previously-graded. Rehabilitation as described in Section 3.5.1.1.	128.8	0	26.2[1,2]
New Spur Roads	Typically 18 feet wide, bladed. No other preparation required although crushed rock may need to be applied in very limited areas for traction.	0	0	0
Overland Access	No preparation required. Typically grassy areas that are relatively flat. No restoration would be necessary		12.7	0

Notes:

1 The width of existing access and spur roads varies across the CSP Project. SCE's standard design for access and spur roads is that they have a width of 18 feet (a 14-foot drivable surface and 2-foot shoulders on each side of the road). At present, existing access and spur roads account for ~129 acres of disturbance. To determine this disturbance area, SCE performed a photoimagery-based analysis of the existing access road network and assigned an existing width to discrete portions of the access road network. The linear length of each discrete portion was then multiplied by the assigned width to determine the area of each discrete portion. The acreages of each discrete portion were then summed to generate the ~129 acres of disturbance. To bring these access and spur roads up to the SCE standard design, an additional ~26 acres would be permanently disturbed. No disturbance outside the 18-foot width (including vegetation trimming) is included in these calculations.

2 No rehabilitation of the existing access roads in Segments 1, 4, and 5 is necessary due to the limited scopes of work in these Segments

3.5.1.2 New Access Roads

3.5.1.2.1 New Access Roads

No new permanent access or spur roads would be constructed under the CSP Project.

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

No new permanent access or spur roads would be constructed under the CSP Project.

3.5.1.2.3 New Access Roads: Gates

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

3.5.1.2.4 New Access Roads: Restoration

No new permanent access or spur roads would be constructed under the CSP Project.

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 will be trimmed while leaving the root structure intact, or vehicles will drive overland over the extant vegetation. 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 7.5 miles of overland access routes would be used during construction of the CSP Project. No grading or gravel placement would occur in these areas. The overland access routes would be approximately 14 feet wide.

3.5.1.4 Watercourse Crossings

3.5.1.4.1 Temporary Watercourse Crossings

Perennial, intermittent, and ephemeral watercourses are crossed at-grade on USFS, BLM, county, and SCE access roads; no temporary at-grade watercourse crossings would be constructed during construction. Watercourses are generally crossed at-grade or are culverted; larger watercourses crossed by improved roads or man-made watercourses (e.g., canals) are bridged or culverted.

Where existing access or spur roads cross a culverted watercourse, temporary plating or matting may be laid over the roadway to protect the culverts and to support the movement of heavy construction equipment. In some instances, a temporary bridge may be placed over a culverted watercourse if plating or matting will not adequately protect the culverts. Plating or matting may also be placed where access roads cross watercourses at-grade, depending on surface conditions at the time of construction.

3.5.1.4.2 Bridge or Culvert Replacement or Installation

No permanent bridges would be replaced or installed as part of the CSP Project. As described in Section 3.5.1.1 above, installation or repair of culverts may be performed during the rehabilitation of existing access or spur roads. The need for such installation or repair would be determined immediately prior to or during construction based on extant field conditions at that time.

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 CSP Project, these at-grade and culverted crossings would be used by construction equipment.

3.5.1.4.3 Location, Design, and Construction Methods

The locations of temporary plating or matting, or a temporary bridge, and the design and construction of such plating, matting, or bridge, would be determined prior to construction, as the morphologies and physical conditions of the 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 the majority of the length of Segment 3 of the CSP Project alignment. Light and medium helicopters may be used during construction of the CSP Project. The numbers and use of helicopters are estimated as shown in Table 3.6-1 below. SCE would consider IEEE 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 CSP 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, marker ball installation (if applicable), and conductor and OPGW stringing operations.

Medium helicopter (Kaman K-Max or similar) activities may include transportation of construction workers; delivery of equipment and materials to structure sites; installation of replacement wood pole-equivalents, TSPs, and TSP H-frame structures, and removal of existing structures.

3.5.1.5.2 Helicopter Access: Takeoff and Landing Areas

Helicopter takeoff and landing areas typically include helicopter landing zones, staging areas, and construction laydown areas (CLAs), and public and private airports or airstrips. SCE anticipates using the staging areas listed in Table 3.5-2 as helicopter staging areas for the CSP 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 or CLA, then a helicopter landing zone will be designated either along the alignment or off-alignment. In addition, helicopters should be able to land within SCE ROWs, which could include landing on access or spur roads. 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 3.5-2; in some instances, refueling could occur at locations, including CLAs, along the CSP 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

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 OPGW installation, the payload would consist of a lightweight sock line; during structure installation and removal, the payload would comprise wood poles being removed or sections of TSPs and wood pole-equivalents being installed, and human external cargo (i.e., construction workers).

The total duration of helicopter operation over the construction period is not known at this time. When operated, helicopters would generally be flown only during daytime hours (the period from 30 minutes before sunrise to 30 minutes after sunrise).

3.5.1.5.5 Helicopter Access: Safety Procedures or Requirements

As presented in APM TRA-2: Helicopter Operations, prior to construction, SCE shall consult with the FAA regarding helicopter flight plans that will take place during construction.

3.5.2 Staging Areas

3.5.2.1 Staging Area Locations

SCE anticipates using one or more of the possible locations listed in Table 3.5-2: Potential Staging Area Locations, and shown in Figure 3.5-1, Staging Areas as the staging areas for the CSP Project. The size of each of the identified staging areas, and the total acreage associated with staging areas, is presented in Table 3.5-2.

Table 3.5-2: Potential Staging Area and Construction Laydown Area Locations

Yard Name	Type	Location	Condition	Area (Acres)	Project Component
CSP 1-1	SA	Plant 6 Road (East of Control Substation)	Disturbed	1.2	Segments 1, 2
CSP 1-2	SA	Plant 6 Road (East of Control Substation)	Disturbed/Undisturbed	4.5	Segments 1, 2
CSP 1-3	SA	Red Hill Road/Otey Road	Undisturbed	5.1	Segments 1, 2
CSP 1-4	SA	Riverside Road/Brockman Lane	Disturbed/Undisturbed	5.0	Segments 1-4
CSP 1-5	CLA	Silver Canyon Road	Disturbed/Undisturbed	1.6	Segment 3
CSP 1-6	CLA	Silver Canyon Road	Disturbed/Undisturbed	0.2	Segment 3
CSP 1-7	CLA	Silver Canyon Road	Disturbed/Undisturbed	2.1	Segment 3
CSP 1-8	CLA	Silver Canyon Road	Disturbed/Undisturbed	1.3	Segment 3
CSP 1-9	CLA	Silver Canyon Road	Disturbed/Undisturbed	1.4	Segment 3
CSP 1-10	CLA	Silver Canyon Road	Disturbed/Undisturbed	3.3	Segment 3
CSP 1-11	CLA	Silver Canyon Road	Disturbed/Undisturbed	2.7	Segment 3
CSP 1-12	SA	Silver Canyon Road/ White Mountain Road	Disturbed/Undisturbed	2.6	Segment 3
CSP 1-13	SA	Silver Canyon Road/ White Mountain Road	Undisturbed	4.9	Segment 3
CSP 1-14	SA	Silver Canyon Road/ White Mountain Road	Undisturbed	4.9	Segment 3
CSP 1-15	SA	Silver Canyon Road/ White Mountain Road	Undisturbed	4.9	Segment 3
CSP 1-16	CLA	Wyman Creek Road	Disturbed/Undisturbed	0.5	Segment 3
CSP 1-17	CLA	Wyman Creek Road	Disturbed/Undisturbed	0.7	Segment 3
CSP 1-18	CLA	Wyman Creek Road	Disturbed/Undisturbed	0.3	Segment 3
CSP 1-19	CLA	Wyman Creek Road	Disturbed/Undisturbed	0.8	Segment 3
CSP 1-20	CLA	Wyman Creek Road	Disturbed/Undisturbed	1.9	Segment 3
CSP 1-21	CLA	Wyman Creek Road	Disturbed/Undisturbed	2.3	Segment 3
CSP 1-22	CLA	Wyman Creek Road	Disturbed/Undisturbed	4.6	Segment 3

Table 3.5-2: Potential Staging Area and Construction Laydown Area Locations

Yard Name	Type	Location	Condition	Area (Acres)	Project Component
CSP 1-23	CLA	Wyman Creek Road	Disturbed/Undisturbed	2.2	Segment 3
CSP 1-24	CLA	Wyman Creek Road	Disturbed/Undisturbed	1.1	Segment 3
CSP 1-25	CLA	Wyman Creek Road	Disturbed/Undisturbed	0.4	Segment 3
CSP 1-26	CLA	Wyman Creek Road	Disturbed/Undisturbed	0.5	Segment 3
CSP 1-27	CLA	Wyman Creek Road	Disturbed/Undisturbed	0.6	Segment 3
CSP 1-28	CLA	Wyman Creek Road	Disturbed/Undisturbed	0.6	Segment 3
CSP 1-29	CLA	Wyman Creek Road	Disturbed/Undisturbed	0.3	Segment 3
CSP 1-30	CLA	Wyman Creek Road	Disturbed/Undisturbed	1.3	Segment 3
CSP 1-31	CLA	Wyman Creek Road	Disturbed/Undisturbed	0.4	Segment 3
CSP 1-32	CLA	Wyman Creek Road	Disturbed/Undisturbed	0.3	Segment 3
CSP 1-33	CLA	Wyman Creek Road	Disturbed/Undisturbed	1.8	Segment 3
CSP 1-34	SA	Wyman Creek Road	Disturbed/Undisturbed	2.9	Segments 3, 5
CSP 1-35	SA	SR-168/Wyman Creek Road	Disturbed/Undisturbed	4.9	Segments 3, 5
CSP 1-36	SA	SR-168	Disturbed/Undisturbed	5.0	Segment 3
CSP 1-37	SA	SR-168	Undisturbed	5.2	Segment 3
CSP 1-38	SA	Power Line Road/ State Line Road	Disturbed/Undisturbed	5.0	Segment 3
			Total	**89.3**	

Abbreviations:
SA: Staging Area
CLA: Construction Laydown Area

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 plane and dense surface for the application of gravel or crushed rock. No new access roads would be constructed to access any of the staging areas. Any land that may be disturbed at the staging areas would be returned to preconstruction conditions or left in its modified condition as agreed to by the landowner, following the completion of construction for the CSP Project.

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 sanitation facilities, steel bundles, steel/wood poles, conductor/OHGW/OPGW 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) BMPs materials such as straw wattles, gravel rolls, 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 subtransmission 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; 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.

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 yards. 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 areas.

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 will be emplaced at point(s) along the outside of the staging area as necessary to illuminate the staging area. The sources of illumination on the light standards will be shielded, resulting in light being directed downward and inward (toward the staging area). As possible, light standards will be positioned so that illumination is directed away from the nearest residence(s), if residences are present.

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; the identified staging areas are relatively level, and thus grading activities would be focused on leveling the surface. Because generally level areas are selected for staging areas, no slope stabilization issues are anticipated.

3.5.3 Construction Work Areas

3.5.3.1 Construction Work Areas

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

3.5.3.1.1 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
- Deposition of removed poles
- 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

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

In addition to designated helicopter landing zones and staging areas, construction laydown areas are co-designated as helicopter landing zones and touchdown areas.

3.5.3.1.2 Vehicle and Equipment Parking, Passing, or Turnaround Areas

Vehicles and construction equipment will be parked during the day and overnight at staging areas and will be parked during the day (and potentially overnight) at pull-and-tension/stringing sites. During work on a structure, vehicles and construction equipment will be parked during construction hours at structure work areas and guard structures, and on adjacent access or spur roads. Vehicles and construction equipment will 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 CSP Project.

3.5.3.1.3 Railroad, Bridge, or Watercourse Crossings

There are no new railroad crossings included in the CSP Project. The CSP Project alignment does not cross any existing at-grade or elevated railroad crossings.

No new permanent bridges are included in the CSP Project. In some instances, a temporary bridge may be placed to protect existing culverts or if an existing bridge is not suitable for the movement of heavy construction equipment. Watercourse crossings are addressed above in Section 3.5.1.4.

3.5.3.1.4 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 TSP foundation
- Install TSP
- Install TSP H-frame
- Install wood pole-equivalent pole
- Remove existing pole
- Remove conductor from existing pole
- Install conductor and OPGW/OHGW on replacement structure
- Vegetation removal or trimming
- Surface grading, leveling, and/or compaction
- Benching

3.5.3.1.5 Excavations and Associated Equipment Work Areas

No excavations except those associated with the installation of wood pole-equivalents, installation of TSP foundations, removal of existing poles, and installation of underground telecommunication cable are included in the CSP Project; these are addressed in Section 3.5.5 below. Excavations for the installation of underground telecommunication cable would require an equipment work area extending approximately 10 feet on either side of the telecommunication cable route.

3.5.3.1.6 Temporary Guard Structures

Temporary guard structures (described in Section 3.5.5.4) may be installed in temporary guard structure work areas. 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. The guard structures would be removed after the conductor is secured into place.

3.5.3.1.7 Pull-and-Tension/Stringing Sites

Pull-and-tension/stringing sites are those locations where the equipment necessary for removal of existing conductor and OPGW, and equipment necessary for installation of new conductor, OPGW, and OHGW would be set-up and operated. The pull-and-tension/stringing sites associated with the CSP 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 the 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 to 28,000 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/OPGW 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.

3.5.3.1.7.1 Splice Sites, Conductor and Overhead Groundwire Removal

Prior to the removal of existing conductor, the existing permanent splices found on the existing conductor identified for removal may need to be replaced with temporary splices, as permanent 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 splice.

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

The CSP Project does not include the installation of any infrastructure underground that would require the use of jack and bore drilling or horizontal directional drilling.

3.5.3.1.9 Retaining Walls

The CSP Project does not anticipate the installation of retaining walls. However, during rehabilitation of access and spur roads, repair and stabilization of slides, washouts, and other slope failures may include installing retaining walls or other means necessary to prevent future failures. The type of structure to be used would be based on specific site conditions. 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.

3.5.3.2 Work Area Disturbance

The dimensions of each work area described above, including the maximum area that would be disturbed during construction, is shown in Table 3.5-3 below.

Table 3.5-3: Work Area Disturbances

	Number	Preferred Size (feet)	Disturbance, Temporary, Acres	Disturbance, Permanent, Acres
Staging Areas/CLAs	38	Varies	89.3	0
Helicopter Landing Zones and Touchdown Areas	1	200 x 100	0.46	0
Vehicle and Equipment Parking, Passing, or Turnaround Areas	0	--	0	0
Railroad, Bridge, or Watercourse Crossings	0	--	0	0
Temporary Work Pads for Facility Installation, Modification, or Removal				
Install TSP	137	200 x 150	94.4	8.2
Install TSP H-frame	8	200 x 125	4.6	0.8
Install Wood pole-equivalent Pole	564	200 x 100	259.0	28.2
Remove Existing Pole	1,567	200 x 100	719.5	0
Excavations and Associated Equipment Work Areas	0	--	--	--
Temporary Guard Structures	187	75 x 75	24.1	0
Pull-and-Tension/Stringing Sites	542	400 x 150	746.1	0
Jack and Bore Pits, Drilling Areas and Pull-Back Areas for Horizontal Directional Drills	0	--	0	--
Retaining walls	0	--	0	--
Total Temporary/Permanent Disturbance Area			**Approximately 1,933 acres**	**Approximately 37 acres**

Table 3.5-4: Permanent Disturbance Associated with Structures, presents the approximate permanent disturbance associated with each structure type, and presents the approximate total permanent footprint associated with structures (in acres).

Table 3.5-4: Permanent Disturbance Associated with Structures

	Proposed Project (approximate metrics)
Pole Diameter:	
• Wood pole-equivalent	12-36 inches
• TSP	48-60 inches
• TSP H-frame	16 inches

Table 3.5-4: Permanent Disturbance Associated with Structures

	Proposed Project (approximate metrics)
Auger Hole Depth: • Wood pole-equivalent • TSP • TSP H-frame	 6 to 13 feet 10 to 40 feet 10 to 20 feet
Permanent Footprint per Pole/Tower: • Wood pole-equivalent • TSP • TSP H-frame	 0.05 acres 0.06 acres 0.10 acres
Number of Poles/Towers: • Wood pole-equivalent • TSP • TSP H-frame	 564 137 8
Total Permanent Footprint for Poles/Towers	Approximately 37 acres

3.5.3.3 Temporary Power

No temporary electrical power would be required at any construction work area. Temporary power and other utility lines may be installed at one or more staging area(s) as part of the CSP Project. 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 (this was discussed previously in Section 3.5.2.2.4).

3.5.4 Site Preparation

3.5.4.1 Surveying and Staking

Prior to the start of structure installation activities, the location of each 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 CSP 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 underground utilities would be relocated as part of the CSP Project. Existing third-party overhead utilities, that are not directly connected to the project system, and that are installed on poles to be replaced in Segment 3 would be addressed as described in Section 3.3.5.1.

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 CSP 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; vegetation and trees would be trimmed and/or removed to facilitate the safe construction of the CSP Project, and to reduce the fire hazard associated with construction. 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. During road rehabilitation activities, vegetation would be trimmed and/or removed within the 18-foot wide access or spur road prism as necessary.

3.5.4.3.2 Vegetation Clearing: Temporary and Permanent Disturbance

The area of temporary and permanent disturbance of each sensitive vegetation community found along the CSP 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 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. Vegetation growing on the road surface would be removed by a motor grader during the blade-grading of roads to remove potholes, ruts, and other surface irregularities.

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 as required under GO 95-D would be performed as part of the construction of the CSP Project; such tree trimming (as necessary) is currently performed along the CSP Project alignment as part of the O&M activities associated with the subtransmission lines. Any tree removal performed under the CSP Project would be conducted to facilitate the safe construction of the CSP Project, and to reduce the fire hazard associated with construction.

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

Trees or portions of trees that encroach upon the 18-foot wide access and spur road prism or on an overland travel route may be removed to facilitate the safe movement of construction equipment. Similarly, trees or portions of trees within or adjacent to staging areas, CLAs, and temporary work pads may be trimmed and/or removed; staging areas have been preferentially selected to minimize the trimming or removal of trees. The types, specific locations, approximate numbers, and size of trees that may need to be removed or trimmed substantially has not been determined at this time; additional information is available in Section 5.4.

SCE has recently performed tree and vegetation trimming and removal activities along portions of the CSP Project alignment as part of the implementation of its Wildfire Mitigation Plan. 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 has not been determined at this time; the potentially-protected trees found along the CSP Project alignment are addressed in Section 5.4.

3.5.4.4.4 Tree Removal and Trimming: Types of Equipment

Tree removal or trimming, if necessary, would be accomplished utilizing equipment such as a dump truck, pick-up truck, chipper, stump grinder, and a bucket truck. 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 CSP Project; typical BMPs that may be used for work area stabilization are presented in Section 3.5.11, Dust, Erosion, and Runoff Controls.

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 to stabilize the soils.

During rehabilitation of access and spur roads, repair and stabilization of slides, washouts, and other slope failures may include installing retaining walls or other means necessary to prevent future failures. The type of structure to be used would be based on specific site conditions. 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.

SCE does not foresee the need for benching as part of the CSP Project; however, the physical environment in which the CSP Project would be constructed is dynamic, and thus this description of benching is included should the need for benching arise during construction.

Benching of temporary work pads and pull-and-tension/stringing sites may be required to provide access for footing construction, assembly, 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. SCE does not foresee the need for benching as part of the CSP Project; however, the physical environment in which the CSP Project would be constructed is dynamic, and thus this description of benching is included should the need for benching arise during construction.

3.5.4.6 Grading

Staging yards and construction work areas could 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.

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

Where existing work pads are not extant, SCE would delineate temporary work pads adjacent to each structure at which work would occur under the CSP 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 footings 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 CSP 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 CSP 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

3.5.5.1.1.1 Pole Removal

Wood pole-equivalents and the wood pole-equivalent poles that comprise the vertical members of an H-frame structure would generally be removed utilizing a line truck or similar equipment with an attached boom. The above-ground and below-ground portions of each pole would be removed. Ground crew would hand excavate at the base of the wood pole and hydraulic jacks would then be placed around the base of the pole; a boom would be attached to the pole, and the pole would then be jacked and lifted out and placed within the temporary work pad area or on a trailer. The wood pole-equivalent would be transported by truck to a staging area, and then transported for reuse or recycling.

If overland access to a given pole or H-frame structure is not present or the topography is not amenable to surface vehicle-supported construction, that pole or H-frame structure may be removed by helicopter. The removal would consist of the above-ground and below-ground portions of the pole. Crews would cut a wood pole approximately 4 feet above ground and fell this portion to the ground within the temporary work pad area in a controlled manner. The remaining above-ground and below-ground portions of the pole would be removed using hydraulic pole jacks and/or by hand-digging. The two portions of the pole would then be removed by helicopter; each portion would be placed on the ground within a previously-disturbed area or on a trailer, or flown to a helicopter landing zone. LWS poles would be removed whole. The hole left from removing the pole would be backfilled and compacted with soils that may be available as a result of the excavation for a new structure at that location, with excess soil from the area, or using imported fill as needed.

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

3.5.5.1.2.1 TSP/TSP H-Frame Installation

TSP structures typically consist of multiple sections. The TSP sections would be placed at temporary work pads at each pole location. Depending on conditions at the time of construction, the top sections may come pre-configured, may be configured on the ground, or configured after pole installation with the necessary cross arms, insulators, and wire stringing hardware. A crane would then be used to set each TSP base section on top of the previously prepared concrete pier or micro-pile foundation. Direct-buried TSPs would be installed similarly to wood pole-equivalents as described below. 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 Wood Pole-Equivalent Installation

Wood pole-equivalents would be installed using a direct-buried approach. Direct-buried wood pole-equivalents would require a hole to be excavated using either an auger or excavated with a backhoe. In some locations, corrugated steel 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, Waste Generation and Management. Wood pole-equivalents consist of separate base and top sections and may be placed on the temporary work pad at each pole location. Depending on conditions at the time of construction, the top sections may come preconfigured, may be configured on the ground, or configured after pole installation with the necessary cross arms, insulators, and wire-stringing hardware. The wood pole-equivalent pole would then be installed in the hole, typically by a line truck with an attached boom. 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. Wood pole-equivalent poles may also be installed by helicopter depending upon existing field conditions at the time of construction.

3.5.5.1.2.3 Existing Pole Modification

Existing poles in Segment 1 would be modified to accommodate the installation of OPGW. This modification would include the installation of new hardware and fittings at the top of a given pole to accommodate the OPGW.

3.5.5.1.3 Foundation Installation

TSPs would be either installed on a drilled, poured-in-place, concrete footing that would form the structure foundation, installed on drilled micro-piles, or direct-buried. If a single concrete footing is used, the hole would be drilled using a truck or track-mounted drill/auger. Excavated material would be used as described in Section 3.5.14, Waste Generation and Management.

Following excavation of the foundation footings, 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 5 feet to 7 feet in diameter and approximately 10 feet to 40 feet deep. TSPs would require approximately 5 to 21 cubic yards of concrete delivered to each structure location.

Where necessary, micro-pile foundations may be used. Installation of micro-piles would require the drilling of several smaller diameter holes (approximately 7-10, 8-inch holes) for each footing. 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. Micro-piles would then be installed by placing rebar in each hole with cement grout injected through grout tubes at the lowest point of each micro-pile, and the hole filled until viscous grout reaches the top of the casing. The micro-piles 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, requiring a reduced amount of concrete required and associated transportation requirements and limitations (delivery within 90 minutes to 2 hours).

In some locations, TSPs may be direct-buried. In these locations, a hole would be excavated using either an auger or excavated with a backhoe. Excavated material would be used as described in Section 3.5.14, Waste Generation and Management.

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 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

TSPs and wood pole-equivalents 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 the overland delivery, TSP and wood pole-equivalents 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 yard), 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

The top portion of three existing poles in Segment 3 may be removed at a point above the existing distribution infrastructure or above existing streetlights. In these instances, after the removal of the existing subtransmission conductor, the pole would be cut using a chainsaw or other device at a place above the existing distribution infrastructure and/or streetlight. The removed portion of the pole would then be transported to a staging area, and then to an SCE facility for reuse or recycling.

3.5.5.2 Aboveground and Underground Conductor/Cable

3.5.5.2.1 Process-Based Description

The process that may be employed for the removal and installation of aboveground conductor, OHGW, and OPGW would vary depending on the Segment in which work is being performed. Wire stringing activities would be in accordance with SCE common practices and similar to process methods detailed in the IEEE Standard 524-2003, Guide to the Installation of Overhead Transmission Line Conductors.

Wire stringing activities would be in accordance with SCE common practices and similar to process methods detailed in the IEEE Standard 524-2003, Guide to the Installation of Overhead Transmission Line Conductors. To ensure the safety of workers and the public, safety devices such as traveling grounds, guard structures, radio-equipped public safety roving vehicles and linemen would be in place prior to the initiation of wire stringing activities. Advanced planning is required to determine circuit outages, pulling times, and safety protocols to ensure that the safe installation of wire is accomplished.

Wire stringing includes all activities associated with the installation of the primary conductors onto subtransmission line structures. These activities include the installation of conductor, OHGW, OPGW/ADSS telecommunication cable, insulators, stringing sheaves (rollers or travelers), vibration dampeners, weights, suspension and dead-end hardware assemblies for the entire length of the route.

The following five steps describe typical wire stringing activities:

Step 1 – Planning: Develop a wire stringing plan to determine the sequence of wire pulls and the set-up locations for the wire pull/tensioning/splicing equipment.

Step 2 – Sock Line Threading: A bucket truck is typically used to install a lightweight sock line from structure to structure. The sock line would be threaded through the wire rollers in order to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the rollers of a particular set of spans selected for a conductor pull.

In areas where a bucket truck is unable to install a lightweight sock line, a helicopter would fly the lightweight sock line from structure to structure. The sock line would be threaded through the wire rollers in order to engage a camlock device that would secure the pulling sock in the roller. This threading process would continue between all structures through the roller of a particular set of spans selected for a conductor pull.

Step 3 – Pulling: The sock line would be used to pull in the conductor pulling rope and/or cable. The pulling rope or cable would be attached to the conductor using a special swivel joint to prevent damage to the wire and to allow the wire to rotate freely to prevent complications from twisting as the conductor unwinds off the reel.

Step 4 – Splicing, Sagging, and Dead-Ending: Once the conductor is pulled in, if necessary, all mid-span splicing would be performed. Once the splicing has been completed, the conductor would be sagged to proper tension and dead-ended to structures.

Step 5 – Clipping-In: After the conductor is dead-ended, the conductors would be secured to all tangent structures; a process called clipping in.

3.5.5.2.1.1 Segment 1

The potential work sequence for the pole line in Segment 1 on which OPGW would be installed may be as follows:

1. Telecommunication cable-pulling locations – OPGW pulling sites would be located along the existing utility corridor, and would include locations at dead-end structures and inflection points.
2. Telecommunication cable installation – Along one pole line, OPGW would be installed on the existing structures as described in Section 3.5.5.2.1.

3.5.5.2.1.2 Segment 2, 'A' and 'C' Circuits Energized During Construction

The potential work sequence for each pole line in Segment 2 may be as follows:

1. Road work – Existing access roads and spur roads would be used to reach installation and removal locations where possible; some rehabilitation and grading may be necessary before removal activities would begin to establish temporary construction work areas for pole removal, etc. Where existing access roads and/or spur roads are not present, and where the topography and soil conditions are suitable for overland travel, vegetation would be trimmed to define a route between the nearest access and/or spur road and a construction work area to permit the safe transit of construction vehicles. In some locations where surface conditions are not suitable for overland travel (soft soils, wetland areas, etc.), temporary matting may be placed on the surface from an existing access or spur road to the construction work area, and additional matting laid to form a construction work area.
2. Wire-pulling locations – Wire pulling sites would be located approximately every 13,000 to 28,000 feet along the existing utility corridor, and would include locations at dead-end structures and inflection points.
3. Wood pole-equivalent pole installation – Replacement structures would be installed as described in Section 3.5.5.1.2.2. Replacement structures would be installed proximate and adjacent to each existing pole line alignment.
4. Conductor installation – Replacement conductor would be installed on the replacement structures as described in Section 3.5.5.2.1.
5. OPGW installation – Along one pole line, OPGW would be installed on the replacement structures as described in Section 3.5.5.2.1.
6. OHGW installation – Along one pole line, OHGW would be installed on the replacement structures as described in Section 3.5.5.2.1.
7. Energize replacement circuits and deenergize existing circuits.
8. Conductor removal – Upon placement of the wire pulling equipment, the de-energized subtransmission conductor would be pulled out with a pulling rope and/or cable attached to the trailing end of the conductor; guard structures or the equivalent might be used during the removal process. The old conductor would be transported to a staging area where it would be prepared for recycling.
9. Wood pole-equivalent pole removal, surface construction – Wood pole-equivalent poles in that portion of the Segment where the subtransmission conductor has been removed would then be

removed utilizing a line truck or similar equipment with an attached boom. The removal would consist of the above and below-ground portions of the pole. Ground crew would hand excavate around the wood pole and hydraulic jacks placed around the base on the pole; a boom would be attached to the pole, and the pole would then be jacked and lifted out and placed on the ground or on a trailer. The pole would be transported by truck to a staging area, and then to an SCE facility for reuse or recycling. The holes left from removing the poles would be backfilled and compacted with soils that may be available as a result of the excavation for new poles, with excess soil from the area, or using imported fill as needed. Existing poles may be cut into pieces using a chainsaw or other equipment to facilitate removal.

3.5.5.2.1.3 Segment 3, 'A' and 'C' Circuits Energized During Construction

The potential work sequence for that portion of Segment 3 in the Owens River Valley and in Silver Creek Canyon west of White Mountain Substation may be as follows:

1. Road work – Existing access roads and spur roads would be used to reach installation and removal locations where possible; some rehabilitation and grading may be necessary before removal activities would begin to establish temporary construction work areas for pole removal, etc. Where existing access roads and/or spur roads are not present, and where the topography and soil conditions are suitable for overland travel, vegetation would be trimmed to define a route between the nearest access and/or spur road and a construction work area to permit the safe transit of construction vehicles. In some locations where surface conditions are not suitable for overland travel (soft soils, wetland areas, etc.), temporary matting may be placed on the surface from an existing access or spur road to the construction work area, and additional matting laid to form a construction work area.
2. Wire-pulling locations – Wire pulling sites would be located approximately every 13,000 to 28,000 feet along the existing utility corridor, and would include locations at dead-end structures and inflection points.
3. TSP/TSP H-frame/Wood pole-equivalent pole installation – Replacement structures would be installed as described in Section 3.5.5.1. Replacement structures would be installed proximate to the southerly pole line alignment. Arms and insulator posts would be installed on the north or south side of the replacement structures.
4. Conductor installation – Replacement 'C' circuit conductor would be installed on one side of the replacement structures as described in Section 3.5.5.2.1.
5. OPGW installation – OPGW would be installed on the replacement structures as described in Section 3.5.5.2.1.
6. Cutover and energize the replacement 'C' circuit and de-energize the existing 'C' circuit.
7. Conductor removal – Upon placement of the wire pulling equipment, the de-energized 'C' circuit subtransmission conductor would be pulled out with a pulling rope and/or cable attached to the trailing end of the conductor; guard structures or the equivalent might be used during the removal process. The old conductor would be transported to a staging area where it would be prepared for recycling.
8. Wood pole-equivalent pole removal, 'C' circuit, surface construction – Poles and H-frames in that portion of the Segment where the subtransmission conductor has been removed would then be removed utilizing a line truck or similar equipment with an attached boom. The removal would

consist of the above and below-ground portions of the pole. Ground crew would hand excavate around the wood pole and hydraulic jacks placed around the base on the pole; a boom would be attached to the pole, and the pole would then be jacked and lifted out and placed on the ground or on a trailer. The wood pole would be transported by truck to a staging area, and then to an SCE facility for reuse or recycling. The holes left from removing the poles would be backfilled and compacted with soils that may be available as a result of the excavation for new poles, with excess soil from the area, or using imported fill as needed. Existing poles may be cut into pieces using a chainsaw or other equipment to facilitate removal.

9. Wood pole-equivalent pole removal, 'C' circuit, helicopter construction – Poles and H-frames in that portion of the Segment where the subtransmission conductor has been removed would then be removed utilizing a helicopter and sling. The removal would consist of the above and below-ground portions of the pole. Ground crew would access the pole location overland by vehicle or would walk to the location. The ground crew would hand excavate around the wood pole; a sling would be attached to the pole, and the pole would then be lifted out by the helicopter and placed on the ground or on a trailer, or flown to a helicopter landing zone. The wood pole would then be transported by truck or helicopter to a staging area, and then to an SCE facility for reuse or recycling. The holes left from removing the poles would be backfilled and compacted with soils that may be available as a result of the excavation for new poles, with excess soil from the area, or using imported fill as needed. Existing poles may be cut into pieces using a chainsaw or other equipment to facilitate removal.
10. Install arms and insulator posts on other side of replacement structures.
11. Install replacement 'A' circuit conductor.
12. Transfer existing distribution lines and telecommunication lines (where applicable) to replacement TSPs, TSP H-frames, or wood pole-equivalent poles or install new distribution and telecommunication lines.
13. Energize new 'A' circuit and de-energize existing 'A' circuit.
14. Remove existing 'A' circuit conductor.
15. Remove existing 'A' circuit structures as described above.

3.5.5.2.1.4 Segment 3, 'A' and 'C' Circuit De-Energized During Construction

The potential work sequence for that portion of Segment 3 in Wyman Canyon east of White Mountain Substation may be as follows:

1. Road work – Existing access roads and spur roads would be used to reach installation and removal locations where possible; some rehabilitation and grading may be necessary before removal activities would begin to establish temporary construction work areas for pole removal, etc. Where existing access roads and/or spur roads are not present, and where the topography and soil conditions are suitable for overland travel, vegetation would be trimmed to define a route between the nearest access and/or spur road and a construction work area to permit the safe transit of construction vehicles. In some locations where surface conditions are not suitable for overland travel (soft soils, wetland areas, etc.), temporary matting may be placed on the surface from an existing access or spur road to the construction work area, and additional matting laid to form a construction work area.

2. Wire-pulling locations – Wire pulling sites would be located approximately every 13,000 to 28,000 feet along the existing utility corridor, and would include locations at dead-end structures and inflection points.
3. De-energize existing 'A' and 'C' circuits. Note that the 'A' circuit infrastructure would be kept intact to be able to provide emergency electrical service if needed.
4. Remove conductor from the de-energized portions of the 'C' circuit.
5. Remove poles supporting the de-energized portion of the 'C' circuit.
6. Install replacement structures as described previously with arms or post insulators on both sides of the replacement structure.
7. Install replacement conductor on both sides of replacement structures.
8. Install telecommunication cable on the replacement structures.
9. Energize the new 'A' and 'C' circuits.
10. Remove conductor from the de-energized portions of the legacy 'A' circuit.
11. Remove poles supporting the de-energized portion of the legacy 'A' circuit.

3.5.5.2.1.5 Segments 4 and 5

The potential work sequence for Segments 4 and 5 may be as follows:

1. Road work – Existing access roads would be used to reach structures; the limited scope of work in Segments 4 and 5 can be accomplished without access road rehabilitation.
2. Pole installation – New wood pole-equivalent poles would be installed as described in Section 3.5.5.1.2.2.
3. De-energize existing subtransmission and/or distribution circuit.
4. Conductor transfer – Existing subtransmission and distribution conductor would be transferred from the existing pole to the replacement wood pole-equivalent pole.
5. Conductor removal – If needed, the existing subtransmission and distribution conductor would be removed from the forward and back spans on either side of the pole to be replaced. The old conductor would be transported to a staging area where it would be prepared for recycling.
6. Conductor installation – If needed, new subtransmission and distribution conductor would be installed as described in Section 3.5.5.2.1.
7. Existing structure removal – The existing poles would be removed as described for Segment 2 above.
8. Re-energize subtransmission and/or distribution circuit.

3.5.5.2.2 Conductor, Overhead Groundwire, and Optical Groundwire Installation: Activity Locations

Conductor, OHGW, and OPGW installation activities would occur in those portions of the CSP Project alignment so-identified in Figure 3.1-1. Conductor, OHGW, and OPGW stringing and installation activities would occur at every pull-and-tension/stringing site, at every existing structure that would be removed, and at every newly-installed structure.

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

Figure 3.5-2 provides a diagram of a typical pull-and-tension/stringing site.

3.5.5.2.4 Conductor Installation: Splicing

The conductor splicing process involves wrapping material called sub-sets around the ends of broken or cut conductor. A sub-set is a helix-shaped length of aluminum or steel that is comprised of individual rods of aluminum or steel assembled together. The sub-sets are wrapped around both ends of the broken or cut conductor to form a cylindrical, helically-wound braid. The tension applied to each end of the broken or cut conductor pulls the braid, lengthening and narrowing it, reducing the circumference of the braid and tightening it. The tightening of the braid around both ends of the broken or cut conductor holds (splices) the two ends together.

OPGW splicing includes the splicing of the inner optic fibers within the OPGW. The splice between two lengths of OPGW is contained within a splice box mounted on a subtransmission structure.

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

The distance between pull-and-tension/stringing sites along the CSP Project alignment varies widely; there is no distance that can be characterized as the general distance between such sites. The dimensions of each pull-and-tension site would be approximately 150’ by 400’. Pull-and-tension/stringing sites may be located at existing dead-end structures, at points of inflection in the CSP Project 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 and OPGW installation.

3.5.5.2.6 Conductor, Overhead Groundwire, and Optical Groundwire Installation: Underground Installation

No conductor, OHGW, or OPGW would be installed underground under the CSP Project. Fiber optic cable would be installed underground at and in the vicinity of Control Substation and the Fish Lake Valley Metering Station, and where the CSP Project subtransmission lines are crossed overhead by other transmission lines as described in Section 5.19.1.2.4.

3.5.5.2.7 Conductor and Optical Groundwire Installation: Safety Precautions

Where conductor, OHGW, or OPGW are to be removed or installed across a public roadway, SCE would install guard structures on either side of the roadway, or would make alternate arrangements as described in Section 3.5.5.4.

3.5.5.3 Telecommunications

OPGW would be installed along Segments 1, 2, and 3 and at Control Substation and the Fish Lake Valley Metering Station. Overhead OPGW on replacement and reused structures would be installed simultaneously with conductor and as described above.

Short sections of telecommunication cable would be installed underground in the vicinity of Control Substation and the Fish Lake Valley Metering Station (Figureset 3.5-3, Telecommunications Underground Routes). In these areas, telecommunication cable would transition from an overhead configuration to an underground configuration through risers installed on TSPs or wood pole-equivalents (known as getaway poles). The approximate length of undergrounding at each of the substations is shown in Table 3.5-5: Substation Surface Disturbance.

Where existing conduit or cable raceways within Control Substation are available, underground fiber optic cable would be installed in these structures. If existing conduit or raceways are not available within the substation, new conduit would be installed in trenches. New conduit would be installed in trenches between the getaway pole(s) and the MEERs/telecommunications rooms/telecommunications cabinets within or adjacent to Control Substation and the Fish Lake Valley Metering Station. Conduit trenches would be approximately 12 inches wide and 36 inches deep. New underground conduit and structures would typically be installed with a backhoe. Polyvinylchloride (PVC) conduit would be placed in the trench and covered with a minimum of approximately 30 inches of concrete slurry, then backfilled and compacted. (Figure 3.5-4, Telecommunications Conduit Details) The fiber optic cable would be installed in an innerduct that protects and identifies the cable within the underground conduit and structures. To install the innerduct, it would first be pulled in the conduit using a pull rope and pulling machine or truck-mounted hydraulic capstan. Then the fiber optic cable would be pulled inside the innerduct using the same procedure.

Undergrounding would require excavation for installation of vaults/pull boxes at each end of the underground conduit. For each vault/pull box, a hole is excavated approximately 8 feet deep by approximately 6 feet long by approximately 6 feet wide. (Figure 3.5-5, Vault/Pull Box Detail) The vault/pull box would be lowered into place, connected to the conduits, and the hole would be backfilled with concrete slurry. One or more splice boxes would also be required on each getaway pole. SCE would install the fiber optic cable at the vaults/pull boxes and splice the cable segments, where it would transition from underground to overhead.

Approximately eleven vaults/pull boxes would be installed under the CSP Project, resulting in the excavation of approximately 54 cubic yards of material. An additional approximately 48 cubic yards of material may be excavated for installation of underground fiber optic cable at or in the vicinity of Control Substation and the Fish Lake Valley Metering Station. Excavated material would be managed as described in Section 3.5.14, Waste Generation and Management.

Table 3.5-5: Substation Surface Disturbance

Substation	Underground Length (feet)		Number of Pull Boxes		Area Disturbed (acres)	
	Inside Substation	Outside Substation	Inside Substation	Outside Substation	Inside Substation	Outside Substation
Control	500	140	0	1	0.23	0.06
Fish Lake Valley Metering Station	300	65	0	4	0.14	0.03
Substation Total	**800**	**205**	**0**	**5**	**0.37**	**0.09**

Notes:
Assume 20' wide disturbance area along trench length to accommodate vehicle and equipment operation.

3.5.5.4 Guard Structures

Guard structures are temporary facilities that would typically be installed at transportation, flood control, and utility crossings prior to conductor, OHGW/OPGW removal or installation activities. These structures are designed to stop the movement of a conductor or OHGW/OPGW should it momentarily drop below a conventional stringing height. SCE estimates that guard structures may need to be installed at 187 locations along the CSP 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; the process for installing guard structures is the same as the process for installing wood pole-equivalents. 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. The guard structures would be removed after the conductor is secured into place.

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.

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 CSP Project.

3.5.6 Transmission Line Construction (Below Ground)

No subtransmission infrastructure would be installed below ground as part of the CSP Project.

3.5.6.1 Trenching

No below ground subtransmission line construction is included under the CSP Project.

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

No below ground subtransmission line construction is included under the CSP Project.

3.5.7 Substation, Switching Stations, Gas Compressor Stations

No switching stations or gas compressor stations are included as part of the CSP Project. Work at substations included under the CSP Project are addressed immediately below.

3.5.7.1 Installation or Facility Modification

3.5.7.1.1 Transformers/Electric Components

3.5.7.1.1.1 Fish Lake Valley Metering Station

The following sections describe the expansion of the Fish Lake Valley Metering Station.

3.5.7.1.1.1.1 <u>Ground Surface Improvements</u>

The Fish Lake Valley Metering Station expansion would be constructed on a newly-constructed gravel pad; the pad would be located on a level, previously-disturbed area. The expansion would cover 1,000 square feet, measuring 50 feet by 20 feet. No additional surface area is anticipated to be needed for construction of the proposed Fish Lake Valley Metering Station expansion. The expansion area would be prepared for the installation of the new substation equipment; this would include compacting and leveling the gravel placed for the expansion area.

3.5.7.1.1.1.2 Below-Grade Construction

After the expansion pad is prepared, below-grade facilities would be installed. Below-grade facilities may include, for example, cable trenches, equipment foundations, conduits, duct banks, and vaults. As described previously in Section 3.5.5.1.3, existing concrete supply facilities would be used where feasible and a temporary concrete batch plant may be set up in an established staging area.

3.5.7.1.1.1.3 Above-Grade Construction

Above-grade installation of substation facilities (e.g., the capacitor bank, transformers, circuit breaker, steel support structures, and perimeter fence) would commence after the below-grade structures are in place.

3.5.7.1.1.2 White Mountain Substation

At White Mountain Substation, existing conductor would be removed from the existing subtransmission racks, and new conductor would be connected to the existing racks. Minor modifications to the existing racks at the substation may be required so that OHGW can be installed between the rack and the getaway structures. These minor modifications could include installation of new fittings to which the OHGW would be attached, or structural reinforcement of the existing racks.

3.5.7.1.2 Gas Components

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

3.5.7.1.3 Control and Operation Buildings

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

3.5.7.1.4 Driveways

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

3.5.7.1.5 Fences

A perimeter fences would be installed at the Fish Lake Valley Metering Station. The fence would be constructed of chain-link and have barbed wire of other intruder-prevention measures installed at the top of the chain-link.

3.5.7.1.6 Gates

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

3.5.7.1.7 Communication Systems (SCADA)

SCE would install new terminal equipment, channel multiplexer equipment, equipment cabling, and other telecommunication equipment devices within the existing MEERs, telecommunications buildings, telecommunications rooms, or control building, or within existing communications cabinets at the Control Substation and at the Fish Lake Valley Metering Station. This work would not require the use of heavy construction equipment.

SCE would also install cabling between existing breakers to the existing MEER/communication room/telecommunications cabinet at Control Substation and the Fish Lake Valley Metering Station and install new relay and protection racks in those facilities. This work may require the use of a manlift or similar equipment to gain access to the connection points on the breakers.

3.5.7.1.8 Grounding Systems

A grounding system would be installed at Fish Lake Valley Metering Station.

3.5.7.2 Civil Works

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

3.5.8 Gas Pipelines

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

3.5.9 Gas Storage Facilities

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

3.5.10 Public Safety and Traffic Control

3.5.10.1 Public Safety

3.5.10.1.1 Public Safety Considerations

Construction of the CSP Project will pose few public safety considerations; this is a function of the routine construction activities proposed under the Project, that much of the CSP Project alignment traverses lands that are remote and rural; and that the population density along the CSP Project is very 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 persons or property during wire stringing activities. A number of measures will be implemented during the CSP Project to address these public safety considerations; these are described throughout Chapter 5, but will include:

- Development and implementation of a SWPPP 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 as spill prevention, control, and countermeasures plan to ensure that fuels are stored appropriately and to ensure efficient and effective response to spills
- Development and implementation of a Hazardous Materials Management Plan to ensure that materials are managed according to applicable regulations
- Development and implementation of a Traffic Control/Management Plan to mitigate public safety impacts from construction along public roadways and to ameliorate potential impacts from the movement of construction equipment along public roadways
- Development and implementation of a Helicopter Use and Safety Plan to address use of helicopters in areas where the public
- Development and implementation of a Construction Fire Prevention Plan to mitigate the risk of construction activities triggering a wildfire
- Installation of guard structures or use of specially-equipped trucks during wire stringing activities where public roadways are crossed by the Project alignment

3.5.10.1.2 Procedures for Managing Work Sites in Urban Areas

No portion of the CSP Project is located in an urban area.

3.5.10.1.3 Public Access Restrictions

To ensure public safety during construction of the CSP 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 conductor or OHGW/OPGW removal or installation activities are underway. Public access restrictions would be maintained during the duration of construction activities at a given location or along a given section of the CSP Project alignment.

3.5.10.2 Traffic Control

During construction, SCE will implement APM TRA-1 (see Section 3.11). As directed in APM TRA-1, construction activities completed within public street rights-of-way would require the use of a traffic control service, and all road or lane closures would be conducted in accordance with APM TRA-1. SCE shall 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.

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. Conductor and OHGW/OPGW removal and installation activities would require the temporary closures of roads, lanes of roads (if the entire road does not need to be closed), and associated sidewalks or pedestrian paths. SCE would obtain encroachment permits from the local jurisdictions and Caltrans, as appropriate, for lane or roadway closures. Closures of private driveways would be coordinated with the individual landowners.

The CSP 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 closure of paths and trails.

No temporary detour routes or locations have been identified for the CSP Project.

A Traffic Control Plan for the CSP Project would be developed in support of ministerial encroachment permit applications, if any such permits are required and if such a Plan is required by the permitting jurisdiction.

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 CSP 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 Great Basin Unified Air Pollution Control District. In addition, SCE will, at the direction of the CPUC, implement the dust control measures 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.
- All trucks and equipment, including their tires, shall be washed off prior to leaving project sites.
- Apply gravel or non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at project sites.
- Water and/or cover soil stockpiles daily.
- Vegetative ground cover shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- All vehicle speeds shall be limited to fifteen (15) miles per hour 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 best management practices would be implemented to manage erosion:

- EC-1, Scheduling
- EC-2, Preservation of Existing Vegetation
- EC-3, Hydraulic Mulch
- EC-4, Hydroseeding
- EC-5, Soil Binders
- EC-6, Straw Mulch
- EC-7, Geotextiles and Mats
- EC-8, Wood Mulch
- EC-15, Soil Preparation and Roughening
- EC-16, Non-Vegetative Stabilization As needed along access roads.
- WE-1, Wind Erosion Control

3.5.11.3 Runoff

The following best management practices would be implemented to manage stormwater runoff and sediment:

- SE-4, Check Dam
- SE-5, Fiber Rolls
- SE-6, Gravel Bag Berm
- SE-7, Street Sweeping and Vacuuming
- SE-10, Storm Drain Inlet Protection
- TC-1, Stabilized Construction
- TC-2, Stabilized Construction Roadway
- WM-3, Stockpile Management

3.5.12 Water Use and Dewatering

3.5.12.1 Water Use

Construction of the CSP Project would require on the order of 1,200 acre-feet of water; this water would be consumed over the 3 year construction phase. 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 CSP Project is available for purchase at competitive rates, SCE would solely utilize recycled or reclaimed water for the CSP Project. Any recycled or reclaimed water would be used per Code of Regulations Title 22, Division 4, Environmental Health, Article 3, Uses of Recycled Water.

If recycled or reclaimed water is not available in sufficient quantities to supply the entirety of the CSP 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 CSP Project area, water purchased from commercial purveyors could be sourced from either surface water or groundwater resources.

3.5.12.2 Dewatering

During installation of TSPs or wood pole-equivalent poles, 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 new structure installation. Dewatering water may also be used for dust control.

3.5.13 Hazardous Materials and Management

3.5.13.1 Hazardous Materials

Construction of the CSP Project would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents (see Table 3.5-6). 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 volumes of these materials that would be consumed or used during construction are not known at this time. However, based on the anticipated volume of hazardous liquid materials, such as fuel, that would be stored and dispensed at one or more staging areas, a Spill Prevention, Control, and Countermeasure (SPCC) Plan could be required (in accordance with 40 C.F.R. Parts 112.1-112.7) depending on contractor requirements.

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

Hazardous Material Type	Use	Approximate Volume (gallons)
Diesel	Engine fuel	397,315
Gasoline	Engine fuel	59,926
Jet A	Engine fuel	413,256
Lubricants/Hydraulic Fluids	Engine and equipment lubrication/ Powering hydraulic equipment	18,000
Miscellaneous Construction Fluids (solvents, etc.)	Cleaning/lubricating hardware, etc.	900

Notes:
Diesel and gasoline volumes developed through CalEEMod.
Lubricants/hydraulic fluids consumption assumed at 5 percent of non-aviation fuel consumption.
Miscellaneous construction fluid volumes assumed at 5 percent of Lubricants/Hydraulic Fluids volume.

No herbicides or pesticides are planned to be used during construction.

If pre-existing hazardous waste is encountered during construction, it would be removed, managed, and disposed as described in the Hazardous Materials Management Plan (HMMP) developed and implemented per APM HAZ-1 or as described in the Soil Management Plan developed and implemented per APM HAZ-2.

3.5.13.2 Hazardous Materials Management

The following best management practices would be followed for transporting, storing, and handling hazardous materials:

- NS-9, Vehicle and Equipment Fueling
- WM-1, Material Delivery and Storage
- WM-2, Material Use
- WM-4, Spill Prevention and Control

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

- WM-4, Spill Prevention and Control
- WM-6, Hazardous Waste Management
- WM-7, Contaminated Soil Management

Hazardous materials management during construction of the CSP Project would be guided by a HMMP, which would be developed prior to construction as specified in APM HAZ-1 (see Section 3.11).

3.5.14 Waste Generation and Management

3.5.14.1 Solid Waste

3.5.14.1.1 Solid Waste Streams

Construction of the CSP Project would result in generation of various solid wastes including metals (from the removed conductor and associated fittings), wood poles, wood pallets, cardboards/papers (e.g., from material packaging), and worker-generated solid waste (e.g., food and food packaging).

3.5.14.1.2 Solid Waste Management

Solid waste generated during construction of the CSP 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 CSP 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.

3.5.14.1.3 Estimated Mass of Solid Waste

SCE takes the construction of the CSP Project to be a single construction activity. Given the physical characteristics of the solid waste to be generated by the CSP Project, estimates of mass and not volume are presented throughout this PEA document.

Between 123 and 254 tons of metal, consisting of metals from removed subtransmission conductor and associated hardware, would be removed as part of the CSP Project. The mass of miscellaneous solid waste (such as pallets, packaging, etc.) would be approximately 10 tons.[16]

The existing wood poles or portions of wood poles removed for the CSP Project would be returned to a staging area, and either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, and/or disposed of in the lined portion of a RWQCB-certified landfill. Approximately 3,134 tons of wood poles would be removed and disposed under the CSP Project.

3.5.14.1.4 Solid Waste Recycling Potential

SCE estimates that the entire mass of the removed conductor would be recycled. SCE further estimates that, at a minimum, three-quarters of the mass of metallic hardware and fittings and miscellaneous solid waste would be recycled.

3.5.14.1.5 Solid Waste Disposal and Recycling Facilities

Given the very large mass and recyclable content of the waste streams that would be generated during construction of the CSP Project, it is anticipated that the steel from the conductor and steel hardware and fittings would be transported to industrial-scale 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 available at the Benton Crossing Landfill located northeast of the Mammoth-Yosemite airport and at the Bishop-Sunland Landfill south of the City of Bishop.

---

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

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 CSP Project. No other liquid wastes (e.g., drilling muds, contaminated waters) are expected to be generated by the CSP 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 Liquid Waste Volume

The volumes of liquid waste generated across the CSP Project alignment would be commensurate with the number of workers on site during construction (i.e., a maximum of approximately 100 workers). It is estimated that approximately 41,200 gallons of liquid waste would be generated during construction of the CSP Project.[17]

3.5.14.2.4 Liquid Waste Disposal Facilities

It is anticipated that sanitary waste would be transported to, and treated at, the City of Bishop wastewater treatment plant.

3.5.14.3 Hazardous Waste

The wood poles removed as part of the CSP Project may be handled as a hazardous waste depending on the original chemical treatment; wood poles removed would be returned to a staging area and either reused by SCE, returned to the manufacturer, disposed of in a Class I hazardous waste landfill, or disposed of in a RWQCB-approved Class III landfill or equivalent facility.

Only small volume of hazardous wastes are anticipated to be generated during construction of the CSP Project. These hazardous wastes would generally include empty fuel, lubricant, or cleaning solvent 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 materials would be stored, handled, and used in accordance with applicable regulations. SCE crews and/or SCE's construction contractor would implement proper hazardous materials management activities, which would include preparation and implementation of a CSP Project-specific HMMP, as specified in APM HAZ-1. The plan would include safety information regarding the transport, use, and disposal of hazardous materials. In addition, all transport, use, and disposal of hazardous materials would be in compliance with applicable laws, rules, and regulations.

To address contaminated soil or groundwater, SCE would develop and implement a Soil Management Plan per APM HAZ-2. The Plan would direct that, if encountered, contaminated soil would be segregated, sampled, and tested to determine appropriate treatment and disposal options. If the soil is classified as hazardous, it would 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. If potentially-contaminated groundwater is encountered, then groundwater samples would be collected and tested to determine

---

[17] Assume 2 liters (0.52 gallons) per construction worker per day; 100 workers; 6 day workweek; 24 month construction schedule.

appropriate treatment and disposal. Hazardous materials would be transported, used, and disposed of in accordance with applicable rules, regulations, and SCE standard protocols designed to protect the environment, workers, and the public.

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

- Clean Harbors, Buttonwillow, LLC, 2500 West Lokern Road, Buttonwillow, CA 93206
- Kettleman Hills, 35251 Old Skyline Rd, Kettleman City, CA 93239
- U.S. Ecology, Nevada Highway 95, 12 Miles South of Beatty, NV

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. SCE will develop and implement a single Fire Prevention and Emergency Response Plan per the CPUC Draft Environment Measure: Construction Fire Prevention Plan, and per APM HAZ-3.

Construction areas would be grubbed/trimmed of vegetation and graded 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.

3.5.15.2 Fire Breaks

No new permanent fire breaks (i.e., areas cleared of vegetation) would be developed under the CSP Project. Areas around new structures would be maintained per the applicable standards. No areas would be cleared of vegetation solely for the purposes of creating a temporary fire break.

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 100 construction personnel working on any given day.

3.6.1.2 Crew Deployment

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 CSP 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 CSP 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: Construction Equipment and Workforce Estimate.

3.6.2 Construction Equipment

A tabular list of the types of equipment expected to be used during construction of the CSP Project, including the horsepower of each type of equipment, is presented in Table 3.6-1: Construction Equipment and Workforce Estimate.

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

Along the CSP Project alignment, construction equipment may be left in the field 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: Construction Equipment and Workforce Estimate.

Table 3.6-1: Construction Equipment and Workforce Estimates

Work Activity				Activity Production			
Primary Equipment Description	**Estimated Horse-Power**	**Probable Fuel Type**	**Primary Equipment Quantity**	**Estimated Workforce**	**Estimated Schedule (Days)**	**Duration of Use (Hrs/Day)**	**Estimated Production Per Day**
Survey				**4**	**DOP**		**42 Miles**
1-Ton Truck, 4x4	300	Diesel	2		Duration of Project	10	1 Mile
Staging Area				**5**	**DOP**		
1-Ton Truck, 4x4	300	Diesel	1		Duration of Project	4	
R/T Forklift	350	Diesel	1			5	
Boom/Crane Truck	350	Diesel	1			5	
Water Truck	300	Diesel	2			10	
Truck, Semi-Tractor	500	Diesel	1			6	
Tree Trimming & Removal				**5**	**30**		**30 Miles**
Dump Truck, 4x4	350	Diesel	1		30	8	1 Mile
1-Ton Truck	300	Diesel	1		30	8	
Chipper	50	Gas	1		30	4	
Stump Grinder	25	Gas	1		30	6	
Manlift/Bucket Truck	250	Diesel	1		30	8	
Roads & Landing Work				**5**	**33**		**65 Miles**
1-Ton Truck, 4x4	300	Diesel	2		33	8	Existing Roads: 2 Miles
Backhoe/Front Loader	350	Diesel	1		33	4	
Track Type Dozer	350	Diesel	1		33	4	
Motor Grader	350	Diesel	1		33	6	

Table 3.6-1: Construction Equipment and Workforce Estimates

Work Activity				Activity Production			
Primary Equipment Description	**Estimated Horse-Power**	**Probable Fuel Type**	**Primary Equipment Quantity**	**Estimated Workforce**	**Estimated Schedule (Days)**	**Duration of Use (Hrs/Day)**	**Estimated Production Per Day**
Water Truck	300	Diesel	2		33	8	
Drum Type Compactor	250	Diesel	1		33	6	
Excavator	300	Diesel	1		33	4	
Lowboy Truck/Trailer	500	Diesel	1		8	4	
Wet Crossing Installation				**6**	**12**		**6 Crossings**
1-Ton Truck, 4x4	300	Diesel	1		12	8	0.5 crossings
Tracked Excavator	250	Diesel	1		12	8	
Rubber Tire Backhoe	125	Diesel	1		12	8	
Wheel Loader	250	Diesel	1		12	8	
Dump Truck	350	Diesel	2		12	8	
Water Truck	300	Diesel	1		12	10	
Concrete Truck	350	Diesel	3		12	4	
Flatbed Trailer	--	--	1		12	8	
TSP Foundation Install				**5**	**274**		**137 TSPs**
3/4-Ton Truck, 4x4	275	Gas	2		274	5	0.5 Foundations
Boom/Crane Truck	350	Diesel	1		274	7	
Backhoe/Front Loader	200	Diesel	1		274	10	
Auger Truck	500	Diesel	1		274	10	
Water Truck	350	Diesel	1		274	10	
Dump Truck	350	Diesel	1		274	10	
Concrete Mixer Truck	425	Diesel	2		274	6	
TSP Haul				**5**	**35**		**137 TSPs**
3/4-Ton Truck, 4x4	275	Diesel	2		35	8	4 TSPs
Boom/Crane Truck	350	Diesel	1		35	8	
Flat Bed Pole Truck	400	Diesel	2		35	10	
Water Truck	350	Diesel	1		35	10	
TSP Assembly				**5**	**137**		**137 TSPs**
3/4-Ton Truck, 4x4	275	Gas	2		137	6	1 TSP
1-Ton Truck, 4x4	300	Diesel	2		137	6	
Water Truck	350	Diesel	1		137	10	
Compressor Trailer	60	Diesel	1		137	6	
Boom/Crane Truck	350	Diesel	1		137	7	
TSP Erection				**5**	**137**		**137 TSPs**
3/4-Ton Truck, 4x4	275	Gas	1		137	6	1 TSP
1-Ton Truck, 4x4	300	Diesel	1		137	6	
Water Truck	350	Diesel	1		137	10	
Compressor Trailer	60	Diesel	1		137	6	
R/T Crane	350	Diesel	1		137	7	
Jet A Fuel Truck	300	Diesel	1		70	4	
Helicopter Support Truck	300	Diesel	1		70	8	
Medium/Heavy-duty Helicopter		Jet A	1		70	6	
TSP H-Frame Foundation Install				**5**	**32**		**8 TSP H-Frames**
3/4-Ton Truck, 4x4	275	Gas	2		32	5	0.25 Foundations
Boom/Crane Truck	350	Diesel	1		32	7	
Backhoe/Front Loader	350	Diesel	1		32	10	
Auger Truck	500	Diesel	1		32	10	
Water Truck	350	Diesel	1		32	10	
Dump Truck	350	Diesel	1		32	10	
Concrete Mixer Truck	425	Diesel	2		32	6	
TSP H-Frame Haul				**5**	**4**		**8 TSP H-Frames**

Table 3.6-1: Construction Equipment and Workforce Estimates

Work Activity				Activity Production			
Primary Equipment Description	**Estimated Horse-Power**	**Probable Fuel Type**	**Primary Equipment Quantity**	**Estimated Workforce**	**Estimated Schedule (Days)**	**Duration of Use (Hrs/Day)**	**Estimated Production Per Day**
3/4-Ton Truck, 4x4	275	Gas	2		4	8	2 TSP H-Frames
Boom/Crane Truck	350	Diesel	1		4	8	
Flat Bed Pole Truck	400	Diesel	2		4	10	
Water Truck	350	Diesel	1		4	10	
TSP H-Frame Assembly				**5**	**16**		**8 TSP H-Frames**
3/4-Ton Truck, 4x4	275	Gas	2		16	6	0.5 TSP H-Frame
1-Ton Truck, 4x4	300	Diesel	2		16	6	
Water Truck	350	Diesel	1		16	10	
Compressor Trailer	60	Diesel	1		16	6	
Boom/Crane Truck	350	Diesel	1		16	7	
TSP H-Frame Erection				**5**	**16**		**8 TSP H-Frames**
3/4-Ton Truck, 4x4	275	Gas	1		16	6	0.5 TSP H-Frame
1-Ton Truck, 4x4	300	Diesel	1		16	6	
Water Truck	350	Diesel	1		16	10	
Compressor Trailer	60	Diesel	1		16	6	
R/T Crane	350	Diesel	1		16	7	
Jet A Fuel Truck	300	Diesel	1		4	4	
Helicopter Support Truck	300	Diesel	1		4	8	
Medium/Heavy-duty Helicopter		Jet A	1		4	6	
Wood Pole-Equivalent / H-Frame Removal				**5**	**174**		**1,567 Poles**
1-Ton Truck, 4x4	300	Diesel	2		174	10	9 Poles
Compressor Trailer	60	Diesel	1		174	5	
Manlift/Bucket Truck	250	Diesel	1		174	8	
Boom/Crane Truck	350	Diesel	1		174	8	
Flat Bed Pole Truck	400	Diesel	1		174	10	
Water Truck	300	Diesel	1		174	10	
Jet A Fuel Truck	300	Diesel	1		87	4	
Helicopter Support Truck	300	Diesel	1		87	8	
Medium/Heavy-duty Helicopter		Jet A	1		87	6	
Wood Pole-Equivalent Haul				**5**	**141**		**564 Poles**
3/4-Ton Truck, 4x4	275	Gas	1		141	10	4 Poles
Boom/Crane Truck	350	Diesel	1		141	8	
Water Truck	300	Diesel	1		141	10	
Flat Bed Pole Truck	400	Diesel	1		141	10	
Wood Pole-Equivalent Assembly				**5**	**141**		**564 Poles**
3/4-Ton Truck, 4x4	275	Gas	2		141	6	4 Poles
1-Ton Truck, 4x4	300	Diesel	2		141	10	
Compressor Trailer	60	Diesel	1		141	6	
Boom/Crane Truck	350	Diesel	1		141	10	
Water Truck	350	Diesel	1		141	8	
Wood Pole-Equivalent Install				**5**	**141**		**564 Poles**
1-Ton Truck, 4x4	300	Diesel	1		141	6	4 Poles
Manlift/Bucket Truck	350	Diesel	1		141	10	
Boom/Crane Truck	350	Diesel	1		141	7	
Auger Truck	210	Diesel	1		141	8	
Water Truck	300	Diesel	1		141	10	
Backhoe/Front Loader	125	Diesel	1		141	10	
Extendable Flat Bed Pole Truck	400	Diesel	1		141	6	

Table 3.6-1: Construction Equipment and Workforce Estimates

Work Activity				Activity Production			
Primary Equipment Description	Estimated Horse-Power	Probable Fuel Type	Primary Equipment Quantity	Estimated Workforce	Estimated Schedule (Days)	Duration of Use (Hrs/Day)	Estimated Production Per Day
Jet A Fuel Truck	300	Diesel	1		141	4	
Helicopter Support Truck	300	Diesel	1		141	8	
Medium/Heavy-duty Helicopter		Jet A	1		141	6	
Guard Structure Installation / Removal				**6**	**38**		**187 Locations**
3/4-Ton Truck, 4x4	275	Gas	2		38	8	5 Locations
1-Ton Truck, 4x4	300	Diesel	2		38	8	
Compressor Trailer	60	Diesel	2		38	7	
Manlift/Bucket Truck	250	Diesel	1		38	8	
Boom/Crane Truck	350	Diesel	1		38	10	
Backhoe/Front Loader	125	Diesel	1		38	10	
Water Truck	300	Diesel	1		38	5	
Auger Truck	500	Diesel	1		38	8	
Extendable Flat Bed Pole Truck	400	Diesel	1		38	8	
Remove/Install Conductor and OPGW/OHGW					**168**		**42 Linear Miles**
¾-Ton Truck, 4x4	275	Gas	1		168	10	0.25 Miles
1-Ton Truck, 4x4	300	Diesel	2		168	4	
Manlift/Bucket Truck	250	Diesel	1		168	10	
Boom/Crane Truck	350	Diesel	1		168	10	
Dump Truck	350	Diesel	1		168	10	
Wire Truck/Trailer	350	Diesel	2		168	10	
Sock Line Puller	300	Diesel	1		168	10	
Bull Wheel Puller	350	Diesel	1		168	10	
Hydraulic Rewind Puller	350	Diesel	1		168	10	
Static Truck/Tensioner	350	Diesel	1		168	10	
Backhoe/Front Loader	125	Diesel	1		17	10	
Truck, Semi-Tractor	400	Diesel	2		168	10	
Lowboy Truck/Trailer	450	Diesel	2		168	10	
Water Truck	300	Diesel	1		168	10	
Jet A Fuel Truck	300	Diesel	1		135	4	
Helicopter Support Truck	300	Diesel	1		135	8	
Light Helicopter		Jet A	1		135	10	
Conductor Splicing Rig	350	Diesel	1		17	10	
Fiber Splicing Lab	300	Diesel	1		17	10	
Telecommunications Underground Installation				**6**	**12**		**2,205 Feet**
1-Ton Truck, 4x4	300	Diesel	2		12	4	185 Feet/Day
Compressor Trailer	60	Diesel	1		12	4	
Backhoe/Front Loader	125	Diesel	1		12	6	
Dump Truck	350	Diesel	2		12	6	
Pipe Truck/Trailer	275	Diesel	1		12	8	
Water Truck	300	Diesel	1		12	6	
Concrete Mixer Truck	350	Diesel	3		12	2	
Lowboy Truck/Trailer	450	Diesel	1		12	4	
Fish Lake Valley Metering Station, Civil/Structural Work				**5**	**40**		
Excavator	300	Diesel	1		10	8	
Dump Truck	350	Diesel	1		10	6	
R/T Forklift	350	Diesel	2		10	6	
Crane	300	Diesel	2		5	4	
Concrete Pump Truck	350	Diesel	1		10	4	
Drill Rig	300	Diesel	2		5	8	

Table 3.6-1: Construction Equipment and Workforce Estimates

Work Activity				Activity Production			
Primary Equipment Description	**Estimated Horse-Power**	**Probable Fuel Type**	**Primary Equipment Quantity**	**Estimated Workforce**	**Estimated Schedule (Days)**	**Duration of Use (Hrs/Day)**	**Estimated Production Per Day**
Bobcat	75	Gas	3		10	8	
Backhoe	125	Diesel	2		20	8	
1-Ton Truck, 4x4	300	Diesel	2		40	4	
¾-Ton Truck, 4x4	275	Gas	2		40	4	
Water Truck	300	Diesel	2		20	4	
Fish Lake Valley Metering Station, Electrical				**5**	**40**		
Scissor Lift	NA	Electric	2		20	8	
R/T Crane	350	Diesel	3		10	4	
Flatbed Truck	180	Gas	1		10	4	
Manlift	75	Diesel	3		20	8	
R/T Forklift	350	Diesel	2		20	4	
1-Ton Truck, 4x4	300	Diesel	3		40	4	
¾-Ton Truck, 4x4	275	Gas	2		40	4	
Fish Lake Valley Metering Station, Wiring				**5**	**30**		
Manlift	75	Diesel	1		30	8	
Fish Lake Valley Metering Station, Testing				**5**	**20**		
¾-Ton Truck, 4x4	275	Gas	2		20	4	
Fish Lake Valley Metering Station, Commissioning				**5**	**20**		
¾-Ton Truck, 4x4	275	Gas	2		20	4	
Restoration				**7**	**42**		**42 Miles**
1-Ton Truck, 4x4	300	Diesel	2		42	4	1 Mile
Backhoe/Front Loader	125	Diesel	1		42	4	
Motor Grader	250	Diesel	1		42	6	
Water Truck	300	Diesel	1		42	8	
Drum Type Compactor	100	Diesel	1		42	4	
Lowboy Truck/Trailer	450	Diesel	1		40	4	

3.6.3.3 Vehicle Miles Traveled

The estimated number of vehicle trips and vehicles miles traveled (VMT) for each construction activity is presented in Section 5.17.

3.6.4 Construction Schedule

3.6.4.1 Proposed Construction Schedule

SCE anticipates that construction of the CSP Project would take approximately 33 months.[18] Construction would commence following CPUC approval, final engineering, procurement activities, land rights acquisition, and receipt of all applicable permits.

Table 3.6-2: Proposed Construction Schedule

Project Activity	Approximate Duration (Months)	Approximate Start Date
PTC	22	August 2021
Final Engineering	8	January 2024
Right-of-Way/ Property Acquisition	18	July 2023

[18] The proposed construction schedule may exceed 33 months due to delays including but not limited to those associated with inclement weather and stoppages necessary to protect biological resources (e.g., nesting birds).

Table 3.6-2: Proposed Construction Schedule

Project Activity	Approximate Duration (Months)	Approximate Start Date
Acquisition of Required Permits	16	August 2022
Subtransmission Line Construction	33	May 2024
Cleanup	8	June 2026
Project Operational	N/A	February 2027

The proposed construction schedule (e.g., month and year) for each CSP Project component is presented in Table 3.6-2: Proposed Construction Schedule.

3.6.4.2 Construction Sequencing

The potential sequencing of construction activities by Segment is presented in Section 3.5.5.2.1; 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: Construction Equipment and Workforce Estimate.

3.6.4.4 Seasonal Considerations

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

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 (see Section 5.13). However, at limited times some construction along the CSP 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 for the duration of the project.

A given helicopter touchdown area within a given wire pull would be used during the duration of the conductor/OPGW installation activities in that given wire pull. 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

Removing conductor from a given existing pole could occur in a single day, or could occur over two non-consecutive days. If removing conductor from a given existing pole cannot be accomplished in a single day, then on one 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 are so-prepared, the conductor would then be removed, which would require crews visiting the work pad; this would be performed on another day.

3.6.5.2.4 Structure Removal

Removal of an existing pole or H-frame would generally be completed in one day.

3.6.5.2.5 Tubular Steel Pole Installation

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

3.6.5.2.6 Ductile Iron or Lightweight Steel Pole Installation

Wood pole-equivalents would generally be installed over a period of one to two consecutive days at any given location.

3.6.5.2.7 Conductor Installation

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

3.6.5.2.8 Structure Modification

Modifications to an existing pole would generally be performed in a single day.

3.6.5.2.9 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.

3.6.5.2.10 Pull-and-Tension/Stringing Sites Duration

The construction duration at a pull-and-tension/stringing site located at the end of a portion of subtransmission 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 subtransmission 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.

3.6.5.2.11 Splice Sites, Conductor and Overhead Groundwire Removal Duration

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

3.6.5.2.12 Splice Sites, Conductor and Optical 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.

3.6.5.2.13 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 to 33 months, depending upon final construction sequencing.

3.7 Post-Construction

3.7.1 Configuring and Testing

Energizing the rebuilt lines is the final step in completing the subtransmission construction. Portions of the existing lines would be de-energized during the construction period in order to connect the new conductor in that portion to the existing system. To reduce the need for electric service interruption, de-energizing and re-energizing the existing lines may occur at night when electrical demand is low.

3.7.2 Landscaping

No landscaping will be installed as part of the CSP 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 would be removed from the construction work area, any and all construction-related materials (packaging, trash, etc.) would be removed, and construction-related BMPs would be removed if they are not necessary for planned restoration work. The construction work area would then be subject to restoration as described below.

At staging areas, all stationary equipment (office trailers, generators, fencing, etc.) and remaining construction-related material would be removed, as would all mobile equipment not needed for demobilization of the staging area. If located on private land, the staging area would then be returned to the conditions agreed upon between the landowner and SCE; for instance, if the landowner desires that surface treatment such as rock or that fencing be left in-place, it will be left in-place. If located on public land, the staging area would be subject to restoration as described below.

3.7.3.2 Site Restoration

Site restoration activities would vary across the CSP Project alignment. Site restoration activities would be guided by federal, state, and local requirements and by the conditions attached to project approvals from federal, state, and local regulators. These requirements and conditions would be reflected in the CSP Project's SWPPPs, in the Habitat Restoration and Revegetation Plan (HRRP) developed per APM BIO-RES-1, and in the Invasive Plant Management Plan (IPMP) developed per APM BIO-RES-2.

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

3.7.3.2.1 Restoring Natural Drainage Patterns

Natural drainages, if impacted during construction of the CSP Project, would be returned to pre-existing contours upon completion of the work as described in APM WET-1. 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 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 pre-project contours.

3.7.3.2.3 Removing Construction Debris

Construction debris (e.g., removed conductor, packaging materials, etc.) would be removed from CSP Project construction work areas and staging areas throughout the duration of the CSP 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 described in the CSP Project's SWPPPs, construction work areas and staging areas would be stabilized following construction; such stabilization could include seeding disturbed areas.

Where construction of the CSP Project disturbs sensitive habitats, restoration and/or revegetation would be performed in those areas as described in the HRRP developed per APM BIO-RES-1. This Plan would be developed by SCE with the appropriate resource agencies and implemented after construction is complete. 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 CSP Project. Temporary 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 described in the CSP Project's SWPPPs, construction work areas and staging areas would be stabilized following construction; such stabilization could include seeding disturbed areas.

Where construction of the CSP Project disturbs sensitive habitats, restoration and/or revegetation would be performed in those areas as described in the HRRP developed per APM BIO-RES-1. This Plan would be developed by SCE with the appropriate resource agencies and implemented after construction is complete. 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 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. Any temporary bridges utilized during construction of the CSP Project would be removed.

No damage to sidewalks is anticipated under the CSP Project as no sidewalks are crossed by the CSP Project alignment.

No damage to agricultural infrastructure is anticipated under the CSP Project. Agricultural land uses are found in portions of Segments 3, 4, and 5. SCE will coordinate with landowners to either avoid agricultural infrastructure or to have such infrastructure relocated by the landowner to avoid damage.

Landscaping located on 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 CSP Project. Any landscaping located outside of SCE's easements that is damaged during construction of the CSP 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 motorized access during construction of the CSP Project; pedestrian use of public trails would not result in disturbance that would require restoration. 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 CSP Project.

3.8 Operation and Maintenance

SCE currently performs O&M activities as described below along the subtransmission lines that are included under the CSP Project. No material changes in the O&M activities described below, or the locations of these activities, are anticipated with implementation of the CSP 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 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 general public and the utility worker, as mandated by the CPUC. SCE facilities are subject to FERC jurisdiction. SCE transmission facilities are under operational control of the CAISO.

3.8.1 Regulations and Standards

The subtransmission lines included under the CSP Project are, and would continue to be, maintained in a manner consistent with GO 95; these GOs contain the ruling standards for the operation and maintenance of transmission lines in California. O&M activities are, and would continue to be, performed in compliance with applicable federal, state, and local regulations.

SCE's 2020-2022 Wildfire Mitigation Plan is provided in Appendix I. No special procedures for wildfire management, beyond those addressed in the Plan or required by regulation, are included under the CSP Project.

3.8.2 System Controls and Operation Staff

The systems and methods used for monitoring and control of the subtransmission lines included under the CSP Project would not be materially changed as a result of the CSP Project. Normal operation of the lines would be controlled remotely through SCE control systems, and manually in the field as required. No additional personnel would be required for O&M activities.

3.8.3 Inspection Programs

The existing inspection programs implemented for the subtransmission lines included under the CSP Project would not be changed as a result of the CSP Project. SCE inspects the subtransmission overhead facilities in a manner consistent with GO 165 a minimum of once per year via ground and/or aerial observation, but inspections usually occur more frequently based on system reliability. No new access would be required for future inspections; ground-based inspections would be performed using the existing network of access and spur roads.

Portions of the CSP Project alignment are located in a High Fire Threat District. Enhanced inspections as described in Section 5.3.4, Asset Management and Inspections of SCE's 2020-2022 Wildfire Mitigation Plan (Appendix I) would be performed as applicable in these areas.

3.8.4 Maintenance Programs

3.8.4.1 Existing Maintenance Programs

The existing maintenance activities performed along the subtransmission lines included under the CSP Project would be unchanged as a result of the construction of the CSP Project. Maintenance would 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, 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. Operation and maintenance-related helicopter activities could include transportation of transmission line workers, delivery of equipment and materials to structure sites, structure placement, hardware installation, and conductor and OPGW stringing operations. Helicopter landing areas could occur where access by road is infeasible. In addition, helicopters must be able to land within SCE ROWs, which could include landing on access or spur roads.

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 subtransmission lines included under the CSP Project. Replacement of the conductor to be installed under the CSP 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 CSP 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 along the CSP Project alignment is currently conducted on an annual and/or as-needed basis. This currently-performed routine access 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 shrubs) approximately 2 to 5 feet beyond berms of 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 CSP Project alignment have surface or color treatments, and no new structures installed under the CSP 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 CSP Project alignment, and no new cathodic protection system would be installed under the CSP 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 CSP Project, and therefore no new landscaping maintenance would result from construction of the CSP Project. Any existing landscape maintenance activities would continue.

3.8.5 Vegetation Management Programs

SCE currently performs O&M activities, including vegetation management, along the subtransmission lines that are included under the CSP Project. No material changes in the O&M activities, or the locations of these activities, are anticipated with implementation of the CSP Project.

Regular tree pruning must be performed to comply 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), California Public Resource Code (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).

In addition to maintaining vegetation-free access roads, helipads and clearances around electrical lines, clearance of brush and weeds around structures, and as may be required by applicable regulations on fee owned 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.

Among the vegetation management-related O&M activities that would continue after construction of the CSP 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 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 subtransmission lines included under the CSP Project, and there are no reasonably foreseeable plans for the disposal, recycling, or future abandonment of any of the facilities included under the CSP 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 CSP Project are listed in Table 3.10-1: Anticipated Permits and Approvals. 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

Application for new permanent ROWs over federal lands will be submitted by SCE following submittal of its Permit to Construct Application to the CPUC.

SCE would apply for and obtain temporary rights-of-way or easements over public lands for construction work areas located outside its existing ROWs and easements; such temporary rights-of-way or easements would be applied for and obtained prior to construction.

3.11 Applicant Proposed Measures

SCE will implement the APMs listed in Table 3.11-1 during construction of the CSP Project. Within Chapter 5, the basis for selecting a particular APM and how the APM would reduce the impacts of the project are described. SCE has carefully considered each CPUC Draft Environmental Measure identified in Chapter 5 of this PEA Checklist, and has indicated that CPUC Draft Environmental Measures will be applied where applicable.

3.12 Project Description Graphics, Mapbook, and GIS Requirements

3.12.1 Graphics

Diagrams as detailed in the *Guidelines* are presented in figures included in Chapter 3, Chapter 5, and in Appendix A.

3.12.2 Mapbook

A mapbook as detailed in the *Guidelines* is presented in Appendix A.

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.

Table 3.10-1: Anticipated Permits and Approvals

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
Army Corps of Engineers	404 Permit	Clean Water Act	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.
USFWS	Section 7 Consultation	Federal Endangered Species Act	Federally Listed Species	Potential impact to a federally listed threatened or endangered species	Biological Assessment (BA) prepared and submitted to Corps. BA contains information on each species and describes potential for "take" of species and/or habitat.	The timeline for processing and receiving a formal Biological Opinion (BO) from USFWS can be six months to a year from when the Corps has initiated consultation and depending on the level of impact to listed species. The typical timeline for issuance of a BO is no less than

Table 3.10-1: Anticipated Permits and Approvals

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
						135 days after acceptance of the BA as complete.
U.S. Department of Agriculture, Forest Service	Special Use Authorization	National Forest Management Act/NEPA	National Forest lands	Use of federal lands managed by the USDA Forest Service for a transmission line. Typically constitutes a Major Federal Action which in turn triggers NEPA analysis.	Special Use Authorization Application: prepare a special use application for consideration by the Forest Service. Prior to submitting a proposal, applicant is required to arrange a preapplication meeting at the local Forest Service office. Application typically includes project plan, operating plans, liability insurance, licenses/registrations and other documents. 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.	Review of Special Use Authorization applications 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.
U.S. Department of the Interior, Bureau of Land Management	Right-of-Way Grant	Federal Land Policy and Management Act/NEPA	Federal Lands	Use of federal lands managed by the BLM for a transmission line. Typically constitutes a Major Federal Action which in turn triggers NEPA analysis.	Right-of-Way Application: Contact the BLM office with management responsibility. Obtain an application form "Application for Transportation and Utility Systems and Facilities on Federal Lands". Arrange a pre-application meeting with a BLM Realty Specialist or appropriate staff member. Submit completed application to the appropriate BLM office. If it is determined that NEPA is required either an EA or EIS would be prepared. The NEPA document may be	BLM 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.

Table 3.10-1: Anticipated Permits and Approvals

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
					prepared jointly with the CEQA document.	
State Water Resources Control Board (SWRCB)/ Regional Water Quality Control Board (RWQCB)	Section 401 Water Quality Certification (WQC), and 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. NPDES permits require the submission of a Storm Water Pollution Prevention Plan.	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 consistency, permits cannot be issued until Notice of Determination (NOD) is filed.
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 an 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, CDFW 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

Table 3.10-1: Anticipated Permits and Approvals

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
						issued, the project applicant must review, sign and return it 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.
	California Fish and Game Code 2080.1 Consistency Determination	California Fish and Game Code (CFGC)	State Listed Species	Required if project may result in take of species that are both federal and state-listed	Applicant requests that CDFW review the BO issued by the USFWS to determine if conservation measures listed in the BO also meet state policies for the protection of state-listed species.	CDFW has 30 days from receipt of the request to review the BO and issue a determination.
California Department of Fish and Wildlife (CDFW)	California Fish and Game Code Section 2080 Take Permit	California Fish and Game Code (CFGC)	State Listed Species	Required if the project has potential to result in take of a state-only listed endangered or threatened species.	Submit application to CDFW and identify mitigation measures to reduce avoid and minimize the potential for take.	Timeline for authorization is approximately 30 to 90 days depending on the species involved and the complexity of the project.
State Historic Preservation Officer (SHPO)	Section 106 National Historic Preservation Act (NHPA)	National Historic Preservation Act	Cultural and/or historical resources	Required if there are potential impacts to cultural and/or historical resources that are listed or eligible for listing on the National Register of Historic Places.	Information on cultural and historical resources gathered during the draft CEQA document preparation is included in a 106 Technical Report and submitted to the Corps along with the Area of Potential Effect (APE) map. The information is then evaluated by the Corps' cultural resources evaluator for potential adverse effects within the APE. Depending upon the level of potential adverse effect, the Corps then forwards its finding to SHPO for concurrence or	Once SHPO has received the Corps' determination, it has approximately 60 days to agree or request additional information. However, SHPO has recently become more involved in projects and this timeframe is only an estimate and if a potential adverse effect to cultural or historical resources could occur, the SHPO process can take up to a year or more. Depending on the level of impacts to cultural resources, the Corps may determine no

Table 3.10-1: Anticipated Permits and Approvals

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
					begins the process for a Memorandum of Agreement (MOA). Native American consultation is also mandatory for the 106 process but can begin during preparation of the environmental document. All letters and correspondence for the Native American consultation must be provided to the Corps. Consultation with federally-recognized tribes may require a more extensive consultation.	effect and issue the permit before receiving concurrence from SHPO.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
AES-1	**Glare and Color Contrast Reduction for Subtransmission/Transmission Structures and Conductors.** To reduce potential significant impacts associated with glare and color contrast for components of the proposed project, the finish on all new subtransmission/transmission structures will be non-reflective, such as steel that has been galvanized and treated to create a dulled finish or color treated or other functionally equivalent product/process. These types of finishes are designed to reduce light reflection and color contrast and help blend the structures into the landscape setting. All new subtransmission/transmission conductors shall be non-specular and non-reflective and the insulators shall be non-reflective and non-refractive to help reduce glare and minimize contrast with the surrounding environment.	Reduce aesthetics impacts.
AIR-1	**Tier 4 Construction Equipment.** All construction equipment with rating between 100 and 750 horsepower (hp) will be required to use engines compliant with U.S. Environmental Protection Agency (USEPA 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.	Reduce air emissions.
WEAP	**Worker's Environmental Awareness Training Program.** 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. The WEAP training will include, at a minimum, the following topics so crews will understand their obligations: • Environmentally Sensitive Area boundaries • Housekeeping (Trash and equipment cleaning) • Safety • Work stoppage • Communication Protocol • Consequences of non-compliance	Reduce impacts to natural and cultural resources generally.
BIO-GEN-1	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), which may be chosen from a previously approved CPUC approved biologist, 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 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 significant 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.	Reduce impacts to biological resources generally.

Table 3.11-1: Applicant Proposed Measures

<table>
<tr><th>APM Number</th><th>Description</th><th>Justification</th></tr>
<tr><td>BIO-AVI-1</td><td>Nesting Bird Management Plan

Prepare Nesting Bird Management Plan. SCE will prepare and implement a Nesting Bird Management Plan to address nesting birds undertaken in collaboration with California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS). The Plan will be an adaptive management plan that may be updated as needed if improvements are identified or conditions in the field change. The Plan will include the following:

• nest management and avoidance;
• field approach (survey methodology, reporting, and monitoring);
• communication protocols; and
• the Project's avian biologist qualifications.

SCE has developed the NBMP template in consultation with the CPUC, their consultant Aspen, CDFW and USFWS. However, we understand the CPUC prefers greater specificity in their measures. Therefore, SCE will adopt the language based on the West of Devers WIL-C. SCE acknowledges the CPUC's request for additional reporting timeframes and formats, however SCE has been providing as requested and as needed reports through our Field Reporting Environmental Database (FRED). This electronic reporting format was developed, in part, to maintain compliance to the reporting timeframes. Weekly and monthly reports were difficult to develop given the frequency and volume of information coming in on a daily basis.

Prepare and implement a Nesting Bird Management Plan.
SCE shall prepare a Nesting Bird Management Plan (NBMP) in coordination with CPUC, BLM, , CDFW, and USFWS. The NBMP shall describe methods to minimize potential project effects to nesting birds and avoid any potential for unauthorized take. Project-related disturbance including construction and pre-construction activities shall not proceed within 300 feet of active nests of common bird species or 500 feet of active nests of raptors or special-status bird species (except for golden eagle as described in APM BIO-AVI-4) until approval of the NBMP by CPUC and BLM in consultation with CDFW and USFWS.

NBMP Content. The NBMP shall include: (1) definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species; (2) a notification procedure for buffer distance reductions should they become necessary; (4) a rigorous monitoring protocol, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any project-related effects to nesting birds will be minimized; and (5) a protocol for documenting and reporting any inadvertent contact or effects to birds or nests.

The paragraphs below describe the NBMP requirements in further detail.

Background. The NBMP shall include the following:
• A summary of applicable state and federal laws and regulations, including definition of what constitutes a nest or active nest under state and federal law.
• A procedure for amendment of the NBMP, should there be changes in applicable state or federal regulations.
• A list of bird species potentially nesting on or near the ROW or other work areas, indicating approximate nesting seasons, nesting habitat, typical nest locations (e.g., ground, vegetation, structures, etc.), tolerance to disturbance (if known) and any conservation status for each species. This section will also note any species that do not require avoidance measures (e.g., rock pigeons).
• A list of the types of project activities (construction, operations, and maintenance) that may occur during nesting season, with a short description of the noise and physical disturbance resulting from each activity.</td><td>Reduce impacts to nesting birds.</td></tr>
</table>

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
	• Clearing of any vegetation, site preparation in open or barren areas, or other project related activities that may adversely affect breeding birds shall be scheduled outside the nesting season, as feasible. **Pre-construction Nest Surveys** Pre-construction nest surveys will be conducted prior to any construction activities scheduled during the breeding period. For this project, the breeding period will be defined as January 1 through August 31. The NBMP shall describe the proposed field methods, survey timing, and qualifications of field biologists. Field biologist qualifications will be subject to review by CPUC and BLM. The avian biologists conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). Nest surveys will focus on visual searches for nest locations and observations of bird activities and movement to detect nesting activity (e.g., carrying nest materials or food, territorial displays, courtship behavior). Surveys shall be conducted in accordance with the following guidelines. • Surveys shall cover all potential nesting habitat within the ROW or other work areas within 500 feet of these areas for raptors and 300 feet for non-raptors. • Pre-construction surveys shall be conducted for each work area, no longer than 10 days prior to the start of construction activity. On the first day of construction at any given site, a qualified Avian Biologist will perform a pre-construction “sweep” to identify any bird nests or other resources that may have appeared since the 10-day survey. • SCE shall provide the CPUC and BLM a report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity of the surveyor(s); a list of species observed; and electronic data identifying nest locations and the boundaries of buffer zones. The electronic dataset will be updated following each preconstruction nest survey throughout the nesting season. The format and contents of this report will be described in the draft NBMP and will be subject to review and approval by CPUC and BLM. **Nest Buffers and Acceptable Activities** The NBMP shall specify measures to delineate buffers on the work site, to consist of clearly visible marking and signage. Buffer locations shall be communicated to the construction contractor and shall remain in effect until formally discontinued (when each nest is no longer active). In addition, the NBMP shall specify measures to ensure the buffers are observed, including a direct communication and decision protocol to stop work within buffer areas. In some cases, active nests may be found while work is underway. Therefore, the NBMP shall include a protocol for stopping ongoing work within the buffer area, securing the work site, and removing personnel and equipment from the buffer. The NBMP shall describe proposed measures to avoid take or adverse effects to nests, such as buffer distances from active nests. These measures shall be based on the specific nature of the bird species and conservation status, and other pertinent factors. The NBMP will identify bird species (or groups of species) that are relatively tolerant or intolerant of human activities and specify smaller or larger buffer distances as appropriate for each species. If no information is available to specify a buffer distance for a species, then the NBMP shall specify 300 feet as a standard buffer distance, and 500 feet for raptors and, special-status species. Nest management for listed threatened or endangered species will be prescribed in a USFWS Biological Opinion, CDFW Incidental Take Permit, or both. All applicable avoidance measures, including buffer distances, must be continued until nest monitoring (below) confirms that the nestlings have fledged and dispersed, or the nest is no longer active. For each special-status species potentially nesting within or near project work areas, the NBMP shall specify applicable buffers and any additional nest protection measures, specialty monitoring, or restrictions on work activities, if needed. The NBMP shall identify acceptable work activities within nest buffers (e.g., pedestrian access for inspection or BMP repair) including conditions and restrictions, and any monitoring required. The NBMP shall include pictorial representation showing buffer distances for ground buffers, vertical helicopter buffers, and horizontal helicopter buffers for nests near the ground and nests in towers.	

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
	Nest Buffer Modification or Reduction At times, SCE or its contractor may propose buffer distances different from those approved in the NBMP. Buffer adjustments shall be reviewed and recommended by a qualified avian biologist, who has been approved by CPUC and BLM in consultation with the CDFW and USFWS. The NBMP shall provide a procedure and timing requirements for notifying CPUC, BLM, CDFW, and USFWS of any planned adjustments to nest buffers. Separate and distinct procedures will be provided for special-status birds. The NBMP will list the information to be included in buffer reduction notifications in a standardized format. **Nest Deterrents** The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on project equipment or facilities, such as buoys, visual or auditory hazing devices, bird repellents, securing of materials, and netting of materials, vehicles, and equipment. It shall also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury or entrapment of birds or other animals. In the event that an active nest is located on project facilities, materials or equipment, SCE will avoid disturbance or use of the facilities, materials or equipment (e.g., by red-tag) until the nest is no longer active. **Communication** The NBMP shall specify the responsibilities of construction monitors in regards to nests and nest issues, and specify a direct communication protocol to ensure that nest information and potential adverse impacts to nesting birds can be promptly communicated from nest monitors to construction monitors, so that any needed actions can be taken immediately. The NBMP shall specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. It also shall describe any proposed measures, and applicable circumstances, to prevent take of precocial young of ground-nesting birds such as killdeer or quail. For example, chick fences may be used to prevent them from entering work areas and access roads. Finally, the NBMP will specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval and approval process prior to removal. **Monitoring** SCE shall be responsible for monitoring the implementation, conformance, and efficacy of the avoidance measures (above). The NBMP shall include specific monitoring measures to track any active bird nest within or adjacent to project work areas, bird nesting activity, project-related disturbance, and outcome of each nest. For nests with reduced buffers, SCE shall monitor each nest until nestlings have fledged and dispersed or until the nest becomes inactive. Nests with default buffers do not require further monitoring once construction work is completed in the area. New nests discovered after work completion in an area will not require monitoring. In addition, monitoring shall include pre-construction surveys, daily sweeps of work areas and equipment, and any special monitoring requirements for particular activities (tree trimming, vegetation removal, etc.) or particular species (noise monitoring, etc.). Nest monitoring shall continue throughout the breeding season during each year of the project's construction activities. **Reporting** Throughout the construction phase of the project, nest locations, project activities in the vicinity of nests (including helicopter traces), and any adjustments to buffer areas shall be updated and available to CPUC monitors on a daily basis in the Field Reporting Environmental Database (FRED). All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions will be made via email to CPUC monitors. In addition, the NBMP shall specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, SCE will submit an annual NBMP report to the CPUC, BLM, CDFW, and USFWS. **Implementation locations:** Project-wide	

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
BIO-AVI-2	***Listed Riparian Bird Species*** **Avoid and minimize impacts.** SCE will avoid ground-disturbing activities within habitat for yellow-billed cuckoo during the nesting season. In the event that activities within yellow-billed cuckoo nesting habitat are unavoidable, a USFWS approved biologist will conduct pre-construction surveys for yellow-billed cuckoo no more than 7 days prior to initial start of construction, if work will occur between March 15 and September 30. Surveys for yellow-billed cuckoo will be conducted in nesting habitat within approximately 500 feet of the Proposed Project area. Responsible agencies and lead agencies will be notified before implementing pre-construction surveys, and that the methods and results (including the name of the surveyor and dates, time, and locations of all surveys) will be provided promptly to the responsible agencies and lead agencies, before project activities begin. If a breeding territory or nest is confirmed, the USFWS and CDFW will be notified, and an exclusion buffer will be established around the nest in coordination with the USFWS and CDFW. Unless otherwise authorized by the USFWS and CDFW, no Proposed Project activities will occur within the established buffer until it is determined by the biologist that the young have left the nest. Construction activities in occupied yellow-billed cuckoo habitat will be monitored by a full-time USFWS- and CDFW-approved biologist.	Reduce impacts to yellow-billed cuckoo during nesting season.
BIO-AVI-3	***Golden Eagle*** **Conduct surveys and avoidance for golden eagle.** SCE shall implement the following measures to document golden eagle occurrence in the project area and surrounding mountains. Survey schedule and requirements will be as identified below unless otherwise authorized by the CPUC, BLM, and USFS in consultation with the USFWS and CDFW. • **Annual Nesting Season Surveys.** Beginning at least one year prior to the start of construction, and continuing throughout the construction phase of the project, SCE shall contract with a qualified biologist to conduct nesting season surveys of golden eagle habitat use within a 2-mile radius of the portions of the project area where work will occur during the breeding season (December 1 through July 31). Nesting season surveys will determine occupancy, productivity, and chronology of known or newly discovered nesting territories within the 2-mile radius. Survey methods for the inventory shall be either ground-based or helicopter-based, as described in the Golden Eagle Technical Guidance (Pagel et al., 2010) or more current guidance from the USFWS. • **Nesting Season Inventory Data.** At a minimum, data collected during the nesting season surveys shall include the following: territory status (unknown, vacant, occupied, breeding successful, breeding unsuccessful); nest location, nest elevation; age class of golden eagles observed; nesting chronology; number of young at each visit; photographs; and substrate upon which nest is placed. • **Determination of Unoccupied Territory Status.** A nesting territory or inventoried habitat shall be considered unoccupied by golden eagles only after completing at least two full surveys in a single breeding season. • **Nest Buffer.** If an occupied nest (as defined by Pagel et al., 2010) is detected within 2 miles of the project, SCE shall implement a one mile line-of-sight and one-half mile no line-of-sight buffer to ensure that project construction activities do not result in injury or disturbance to golden eagles. Triggers for adaptive management shall include any evidence of project-related disturbance to nesting golden eagles, including but not limited to: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior, or nest site abandonment. Adaptive management actions include, but are not limited to, cessation of construction activities that are deemed by a qualified biologist to be the source of golden eagle disturbance. • **Reporting.** Golden eagle survey data and, if applicable, nest activity monitoring results and any adaptive management actions taken, will be provided to CPUC, BLM, USFS, CDFW, and USFWS in monthly monitoring reports, as seasonal data becomes available and if specific nest monitoring or any adaptive management actions are taken, and summarized in annual project monitoring reports.	Avoid impacts to golden eagle.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
BIO-AVI-4	***Swainson's Hawk*** **Pre-construction surveys.** SCE and/or its contractors shall implement the following measures for construction and maintenance areas: • Pre-construction raptor surveys will be conducted. The CDFW's May 31, 2000 Recommended Timing and Methodology for Swainson's hawk Nesting Surveys in California's Central Valley would inform the surveys. • 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.	Avoid and minimize impacts to Swainson's hawk.
BIO-AVI-5	***Burrowing Owl*** **Pre-construction survey.** A pre-construction, focused burrowing owl survey will be conducted no more than 30 days prior to initial start of construction within habitat to determine if any occupied burrows are present. If occupied burrows are found, adequate buffers shall be established around burrows. Adequate buffers will be determined by a Project Avian Biologist based upon field conditions and resource agency guidelines for wintering burrows and breeding season burrows. **Prepare Burrowing Owl Management Plan.** SCE will develop a Burrowing Owl Management Plan for the Project. The Plan will include information related to: • assessment of burrow suitability; • replacement burrows; • methods for relocation; • monitoring and reporting; • implementation locations. **Conduct Surveys and Avoidance for Burrowing Owl** Burrowing owl 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 Nesting Bird Management Plan 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 Passive Relocation Plan, as described below. SCE shall prepare a draft Burrowing Owl Passive Relocation Plan for review and approval by CPUC and BLM in consultation with CDFW and USFWS prior to the start of any ground-disturbing activities. No passive relocation of burrowing owls shall be permitted during breeding season, unless a qualified biologist verifies through noninvasive methods that an occupied burrow is not occupied by a mated pair, and only upon authorization by CDFW. The Plan shall include, but not be limited to, the following elements:	Reduce impacts to burrowing owl individuals and habitat.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
	Assessment of Suitable Burrow Availability. The Plan shall include an inventory of existing, suitable, and unoccupied burrow sites within 300 feet of the affected project work site. Suitable burrows will include inactive desert kit fox, ground squirrel, or desert tortoise burrows that are deep enough to provide suitable burrowing owl nesting sites, as determined by a qualified biologist. If two or more suitable and unoccupied burrows are present in the area for each burrowing owl that will be passively relocated, then no replacement burrows will need to be built. **Replacement Burrows.** For each burrowing owl that will be passively relocated, if fewer than two suitable unoccupied burrows are available within 300 feet of the affected project work site, then SCE shall construct at least two replacement burrows within 300 feet of the affected project work site, or in suitable locations within ¼ mile when suitable locations within 300 feet are not available. Burrow replacement sites shall be in areas of suitable habitat for burrowing owl nesting, and subject to minimal human disturbance and access. The Plan shall describe measures to ensure that burrow installation or improvements will not affect sensitive species habitat or any burrowing owls already present in the relocation area. The Plan shall provide guidelines for creation or enhancement of at least two natural or artificial burrows for each active burrow within the project disturbance area, including a discussion of timing of burrow improvements, specific location of burrow installation, and burrow design. Design of the artificial burrows shall be consistent with CDFW guidelines (CDFG, 2012; or more current guidance as it becomes available) and shall be approved by the CPUC, BLM, CDFW, and USFWS. **Methods.** Provide detailed methods and guidance for passive relocation of burrowing owls, outside the breeding season. An occupied burrow may not be disturbed during the nesting season (generally, but not limited to, February 1 to August 31), unless a qualified biologist determines, by non-invasive methods, that it is not occupied by a mated pair. Passive relocation will include installation of one-way doors on burrow entrances that will let owls out of the burrow but will not let them back in. Once owls have been passively relocated, burrows will be carefully excavated by hand and collapsed by, or under the direct supervision, of a qualified biologist. **Monitoring and Reporting.** Describe monitoring and management of the replacement burrow site(s), and provide a reporting plan. The objective shall be to manage the relocation area for the benefit of burrowing owls, with the specific goal of maintaining the functionality of the burrows for a minimum of two years. Monitoring reports shall be available to the CPUC and BLM on a weekly basis. **Implementation locations:** Suitable burrowing owl habitat.	
BIO-AVI-6	**Avian-Safe Design.** All transmission and substation facilities for the project will be designed to be avian-safe, following the intent of Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006 (APLIC 2006). All transmission facilities will be evaluated for potential collision risk and, where determined to be high risk, lines will be marked with collision reduction devices in accordance with Reducing Avian Collisions with Power Lines: The State of the Art in 2012 (APLIC 2012).	
BIO-MAM-1	***Desert Bighorn Sheep*** **Pre-construction survey/Construction monitoring.** Prior to initial ground-disturbing activities, a qualified biologist will conduct surveys within 2 miles from construction work areas identified as habitat for bighorn sheep during the peak lambing period Feb-May (63 FR 13135 and USFWS BHS Recovery Plan in the Peninsular Ranges, California 2000). 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 consult with USFWS, CDFW, and USFS prior to conducting construction activities if work is planned within bighorn sheep (BHS) habitat. **Avoid and minimize impacts.** All project activities located within areas identified as BHS habitat shall implement the following avoidance and minimization measures:	Avoid and minimize impacts to desert bighorn sheep.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
	• 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 – Sept 30, in specific project areas (63 FR 13135 and USFWS 2000). This measure does not apply to emergencies. • Pets Prohibited. Employees will not bring pets or other animals to the Proposed Project area, unless the animal is ADA compliant. • Vehicle Travel. During construction-related activities, motor vehicles will be limited to maintained roads, designated routes, and areas identified as being permanently or temporarily affected by construction within the Project footprint. • 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.	
BIO-MAM-2	***Bats, Common and Sensitive Species*** **Pre-construction Surveys.** A qualified bat biologist will conduct surveys before the start of construction to identify active bat roosting or maternity colonies within or adjacent to project impact areas. Trees, rock outcrops, and man-made structures 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, 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 should 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 will 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 will include branches and limbs with no cavities removed by hand (e.g., using chainsaws). This will create a disturbance (noise and vibration) and physically alter the tree. Bats roosting in the tree will either abandon the roost immediately (rarely) or, after emergence, will avoid returning to the roost. • On Day 2, Step 2 of the tree removal may occur, which will be removal of the remainder of the tree. Trees that are only to be trimmed and not removed will be processed in the same manner; if a branch with a potential roost must be removed, all surrounding branches will be trimmed on Day 1 under supervision of a qualified bat biologist and then the limb with the potential roost will be removed on Day 2. **Construction Monitoring.** If a colonial or solitary maternity roost was located, tree 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	Avoid and minimize impacts to special-status bats and habitat.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
	bat biologist. The qualified biological monitor will observe and document implementation of appropriate buffer areas around active roosts(s) during project activities	
BIO-RES-1	***Develop and Implement Habitat Restoration and Revegetation Plan (HRRP)*** Temporary impacts to regulated species' habitats, plant species, and vegetation communities shall be restored or revegetated. 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 and revegetation will be determined by the resource agencies through the permitting process. SCE shall develop and implement a Habitat Restoration and Revegetation Plan (HRRP). SCE will consult with appropriate agencies during development of the HRRP and implement the HRRP in conjunction with applicable permit conditions and mitigation measures. The HRRP shall be submitted to CPUC and BLM for review and approval prior to the start of construction. Invasive plant management will be performed in conjunction with the HRRP per the Invasive Plant Management Plan (BIO-RES-2). **Habitat Restoration and Revegetation Plan** For all revegetation or restoration sites, the HRRP shall include: • Revegetation and restoration goals and objectives based on vegetation type and jurisdictional status of each site. • Quantitative restoration success criteria. • Implementation details as applicable. Details may include topsoil stockpiling and handling, postconstruction site preparation, soil decompaction and recontouring, planting and seeding palettes to include only native, locally sourced materials with confirmed ability to produce from suppliers, fall or other suitable season-season planting or seeding dates. • Maintenance details, which may include irrigation or hand-watering schedule and equipment, and erosion control. • Monitoring and Reporting, specifying monitoring schedule and data collection methods throughout establishment of vegetation with key indicators of successful or unsuccessful progress, and quantitative criteria values to objectively determine success or failure at the conclusion of the monitoring period. • Adaptive management procedures such as reseeding, re-planting, drainage repairs, adjustments to irrigation schedule, and repair or remediation of sites to meet success criteria on schedule. For temporary disturbance in common vegetation or habitat (e.g., creosote bush scrub) or in disturbed areas such as roads or agricultural lands, the goal of the HRRP will be revegetation to minimize spread of invasive plants, dust generation, and soil erosion. For revegetation sites the goals, objectives, and success criteria specified in the HRRP will be limited to requirements of the Storm Water Pollution Prevention Plan (SWPPP) and the Invasive Plant Management Plan (IPMP, APM BIO-RES-2). No additional goals, objectives, or success criteria regarding habitat condition are required for revegetation sites. For species and vegetation communities with permit requirements including wetlands and riparian habitats, the goal of the HRRP will be to restore plant species, habitat values, or vegetation communities. For restoration sites the goals, objectives, and success criteria specified in the HRRP will include native species cover and species richness compatible with the specific vegetation and habitat type. For all revegetation or restoration areas, if a fire, flood, or other disturbance beyond the control of SCE, CPUC, and BLM damages the area within the monitoring period, SCE will be responsible for one reseeding or replanting event, as applicable. If a second event occurs, no replacement is required.	Restore native habitat.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
	For all revegetation (per SWPPP requirements) or restoration (per the HRRP) areas, seed and/or potted nursery stock of locally native species will be used. The list of plants observed during botanical surveys of the project area will be used as a guide to site-specific plant selection, additional appropriate species may be included. Monitoring of the revegetation sites will be conducted according to requirements of the SWPPP, and the IPMP. Monitoring of the restoration sites will continue annually until HRRP success criteria are achieved. SCE will be responsible for implementing adaptive management as needed. Reporting of revegetation will be according to requirements of the SWPPP and the IPMP. For all restoration areas, SCE will provide annual reports to the CPUC and BLM to verify the total vegetation acreage subject to restoration, areas that have been completed, and areas still outstanding. The annual reports will also include a summary of the restoration and adaptive management activities for the previous year, success criteria progress and completion, and any adjustments to planned activities, for the upcoming year.	
BIO-RES-2	***Develop Invasive Plant Management Plan*** SCE shall prepare and implement an Invasive Plant Management Plan (IPMP). This plan shall include measures designed to avoid the introduction and spread of new nonnative invasive plant species (invasive plants) and minimize the spread of existing invasive plants resulting from project activities. The IPMP 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 and BLM for review and approval prior to the start of construction. For the purpose of the IPMP, invasive plants shall include plants that (1) are invasive and rated high or moderate for negative ecological impact in the California Invasive Plant Inventory Database (Cal-IPC 2020), or (2) aid and promote the spread of wildfires (such as Bromus tectorum (cheatgrass), Brassica tournefortii (Sahara mustard), and Bromus madritensis spp. Rubens (red brome)) or (3) identified by [applicable lead federal agency] as special concern. The IPMP will be implemented throughout project pre-construction, construction, and restoration phases. **Invasive Plant Management Plan.** The IPMP will include the information defined in the following sections: **Assessment.** An assessment of the Proposed Project's potential to cause spread or introduction of invasive plants into new areas, or to introduce new invasive plants into the ROW. This section will list known and potential invasive plants occurring on the ROW and in the project region and identify threat rankings and potential for project-related occurrence or spread for each species. This section will identify control goals (e.g., eradication, suppression, or containment) for invasive plants of concern with potential to occur on the ROW. **Pre-construction invasive plant inventory.** SCE shall inventory of all invasive plants of concern in areas (both within and outside the ROW) subject to project-related vegetation removal/disturbance, "drive and crush," and ground-disturbing activity. The invasive plants inventory area shall also include vehicle and equipment access routes within the ROW and all project staging and storage yards. Invasive plants of concern shall be mapped by area of occurrence and percent cover. The map will be updated with new occurrences at least once a year. **Pre-construction invasive plants treatment.** Invasive plant infestations identified in the pre-construction invasive plants inventory shall be evaluated to identify potential for project-related spread and potential benefits (if any) of pre-construction treatment. Pre-construction treatment will consider the specific invasive plants, potential seed banks, or other issues. The IPMP will identify any infestations to be controlled or eradicated prior to project construction. Control and follow-up monitoring of pre-construction invasive plants treatment sites will follow methods identified in appropriate sections of the IPMP.	Avoid and minimize introduction of noxious and invasive weeds.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
	Prevention. The IPMP will specify methods to minimize potential transport of new invasive plant seeds onto the ROW, or from one section of the ROW to another. The ROW may be divided into "weed zones," based on invasive plants of concern in the ROW. The IPMP will specify inspection procedures for construction equipment entering the Proposed Project area. Vehicles and equipment may be inspected and cleaned at entry points to specified sections of the ROW, and before leaving work sites where invasive plants of concern must be contained locally. Construction equipment shall be inspected to ensure it is free of any dirt or mud that could contain invasive plant seeds, roots, or rhizomes, and the tracks, outriggers, tires, and undercarriage will be carefully washed, with special attention being paid to axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Other construction vehicles (e.g., pick-up trucks) that will be frequently entering and exiting the site will be inspected and washed on an as-needed basis. Tools such as chainsaws, hand clippers, pruners, etc., shall be cleaned of dirt and mud before entering project work areas. All vehicles will be washed off-site when possible. If off-site washing is infeasible, on-site cleaning stations (including air washing) will be set up at specified locations to clean equipment before it enters the work area. Wash stations will be located away from native habitat or special-status species occurrences. Wastewater from cleaning stations will not be allowed to run off the cleaning station site. When vehicles and equipment are washed, a daily log must be kept stating the location, date and time, types of equipment, methods used, and personnel present. The log shall contain the signature of the responsible crewmember. Written or electronic logs shall be available to BLM and CPUC monitors on request. Erosion control materials (e.g., straw bales) must be certified free of invasive plant seed ("weed-free") before they are brought onto the site. The IPMP must prohibit on-site storage or disposal of mulch or green waste that may contain invasive plant material. Mulch or green waste will be removed from the site in a covered vehicle to prevent seed dispersal and transported to a licensed landfill or composting facility. The IPMP will specify guidelines for any soil, gravel, mulch, or fill material to be imported into the Proposed Project area, transported from site to site within the Proposed Project area, or transported from the Proposed Project area to an off-site location, to prevent the introduction or spread of invasive plants to or from the Proposed Project area. **Monitoring.** The IPMP shall specify methods to survey for invasive plants of concern during pre-construction, construction, and restoration phases; and shall specify qualifications of specialists responsible for invasive plant monitoring and identification. It must include a monitoring schedule to ensure timely detection and immediate control of new invasive plant infestations to prevent further spread. Surveying and monitoring for invasive plant infestations shall occur at least two times per year, to coincide with the early detection period for early season and late season invasive plants. The monitoring section shall also describe methods for post-eradication monitoring to evaluate success of control efforts and any need for follow-up control. **Control.** The IPMP must specify manual and chemical invasive plant control methods to be employed. The IPMP shall include only invasive plant control measures with a demonstrated record of success for target invasive plants, based on the best available information. The plan shall describe proposed methods for promptly scheduling and implementing control activity when any project-related invasive plant infestation is located (e.g., located on a project disturbance site), to ensure effective and timely invasive plant control. Invasive plant infestations must be controlled or eradicated as soon as possible upon discovery, and before they go to seed, or when appropriate with the goal to prevent further spread. All proposed invasive plant control methods must minimize disturbance to native vegetation, limit ingress and egress to defined routes, and avoid damage to any Environmentally Sensitive Areas (ESAs) identified within or adjacent to the ROW. New infestations by invasive plants of concern will be treated at a minimum of once annually until eradication, suppression, or containment goals are met. Invasive plant occurrences can be considered eradicated when no new seedlings or resprouts are observed for three consecutive years, or a single season where new seedlings or resprouts are observed in reference populations but not at the control site. Invasive plant control efforts may cease when eradication is complete.	

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
	Manual control shall specify well-timed removal of invasive plants or their seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Inyo and Mono county Agricultural Commissioners if such guidelines are available. The chemical control section must include specific and detailed plans for any herbicide use. It must indicate where herbicides will be used, which herbicides will be used, and specify techniques to be used to avoid drift or residual toxicity to native vegetation or special-status plants, consistent with BLM's Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM, 2007) and National Invasive Species Management Plan (NISC, 2008). All herbicide applications will follow U.S. Environmental Protection Agency label instructions and will be in accordance with federal, state, and local laws and regulations. Only state and BLM-approved herbicides may be used. Herbicide treatment will be implemented by a Licensed Qualified Applicator. Herbicides shall be applied in accordance with product labels and applicator licenses. Herbicides shall not be applied during or within 24 hours of high confidence predicted rain. Only water-safe herbicides shall be used in riparian areas or within channels (engineered or not) where they could run off into downstream areas. Herbicides shall not be applied in high wind conditions. **Reporting schedule and contents.** The IPMP shall specify reporting schedule and contents of each report.	
BIO-BOT-1	***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. **Pre-construction survey.** 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), 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 (defined by the California Natural Diversity Database (CNDDB) as all individuals within a ¼ mile of each other) will be flagged, avoided, and monitored as discussed above and the CPUC, BLM, USFS, 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 shall be restored or mitigated. • **Habitat Restoration and Revegetation.** A Habitat Restoration and Revegetation Plan (HRRP) shall address topsoil, plant or propagules salvage, and restoration. A Habitat Mitigation and Management Plan (HMMP) shall address mitigation. Approval of the HRRP by appropriate agencies is required before impacts to special-status plant occurrences are allowed. A draft HMMP will be submitted to the appropriate agencies prior to impacts to special-status plants. For more information see APM BIO-RES-1. • **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 HRRP. For special-status plants, the goal shall be to preserve existing populations or establish new populations.	Avoid and minimize impacts to special-status plants.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
	The HRRP will include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether a species is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting plants or propagules, to retain intact soil conditions and maximize success; (e) details regarding storage of plants or propagules for each species; (f) location of the proposed recipient site, and detailed site preparation and plant introduction techniques, as applicable; (g) a description of the irrigation, and other maintenance activities, as applicable; (h) success criteria, including specific timeframe for survivorship of each species; and (i) a detailed monitoring program, commensurate with the HRRP goals. Invasive plant control for special-status plants will be addressed in the Invasive Plant Management Plant (IPMP, APM BIO-RES-2). • **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 a 1:1 ratio of acreage 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 and BLM. 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 HRRP annual report.	
BIO-BOT-2	***Special-status Perennial Plants and Other Species*** SCE shall avoid, minimize, or mitigate impacts to special-status perennial plants and other species that may be located on the project disturbance areas or surrounding buffer areas. **Pre-construction survey.** Pre-construction surveys will 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 will be consistent with the protocol outlined by CDFW Protocols for Surveying and Evaluating Impacts to Species Status Native Plant Populations and Sensitive Nature Communities (May 2018). Pre-construction surveys will focus on identifying new individuals or occurrences not captured in focused surveys. Where special-status perennial plants or other 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. If avoidance of listed species is not feasible, SCE will consult with USFWS/CDFW and implement additional measures pursuant to FESA/CESA, required after consultation. 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, BLM, USFS, CDFW, and/or USFWS will be notified. **Restoration and Mitigation** • **Coordinate with Agencies.** Agencies shall approve any impacts to special-status perennial plants and other species. • **Habitat Restoration and Revegetation.** If individuals of special-status species cannot be avoided, a Habitat Restoration and Revegetation Plan (HRRP) shall address removal or salvage methods, number of individuals to be impacted, and restoration (see BIO-RES-1). A Habitat Mitigation and Management Plan (HMMP) shall address mitigation. Approval of the HRRP by appropriate agencies is required before impacts to the given species is allowed. A draft HMMP will be submitted to the appropriate agencies prior to impacts to the given species.	Avoid and minimize impacts to special-status plants.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
	• **Tree Removal.** Tree removal and trimming will be designed to minimize the total number of individual trees removed or significantly trimmed. A qualified arborist will be onsite to make recommendations on trimming and removal. Protection and replacement of trees impacted by project activities will be mitigated consistent with applicable jurisdiction and agency requirements, and included in the HRRP. • **Offsite Compensation.** If restoration is not feasible, SCE shall provide compensation lands consisting of habitat occupied by the impacted [add names of the sensitive tree, cactus, shrub, or yucca species] at a 1:1 ratio of individuals or acreage, 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 and BLM. 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 HRRP annual report.	
CUL-1	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, INF, and CPUC for review and approval at least 30 days prior to the start of construction. The CRMP shall include, but not be limited to, the following sections: • Cultural Resources Protection Plan: The CRMP shall define and map all known NRHP- and CRHR-eligible properties in or within 100 feet of the Project Area of Potential Effects (APE)/Area of Potential Impacts (API). The CRMP shall include how NRHP- and CRHR-eligible properties will be avoided and protected during construction. Measures shall include, at a minimum, designation and marking of 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, and how avoidance measures and enforcement of ESAs will be coordinated with construction personnel. The CRMP would also define any additional areas that are considered to be of high sensitivity for the discovery of buried NRHP- and CRHR-eligible cultural resources, including burials, cremations, or sacred features. The CRMP would detail provisions for monitoring construction in these high-sensitivity areas. It would also detail procedures for halting construction; making appropriate notifications to agencies, officials, and Native Americans; and assessing NRHP and CRHR eligibility in the event that unknown cultural resources are discovered during construction. For all unanticipated cultural resource discoveries, the CRMP would detail the methods, the consultation procedures, and the timelines for assessing NRHP and CRHR eligibility, formulating a mitigation plan, and implementing treatment. Mitigation and treatment plans for unanticipated discoveries would be reviewed by the appropriate Native Americans and approved by the BLM, and the Office of Historic Preservation (OHP) prior to implementation. The CRMP would include provisions for analysis of data in a regional context, reporting of results within one year of the completion of field studies, curation of artifacts (except from private land) and data (e.g., maps, field notes, archival materials, recordings, reports, photographs, and analysts' data) at a facility that is approved by the BLM, and dissemination of reports to local and State repositories, libraries, and interested professionals. The BLM would retain ownership of artifacts collected from BLM-managed lands. The INF would retain ownership of artifacts collected from INF-managed lands. SCE would attempt to gain permission for artifacts from privately held land to be curated with the other project collections. The CRMP would specify	Reduce impacts to cultural resources generally.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
	that archaeologists and other discipline specialists conducting the studies must meet the Professional Qualifications Standards mandated by the OHP. • Cultural Resource Monitoring and Field Reporting: Detail procedures for archaeological and Native American monitoring, as appropriate, reporting matrix, and 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, tribal cultural resources, or sacred sites. • Unanticipated Discovery Protocol: An Inadvertent Discovery Plan for cultural resources shall be prepared and implemented. Detail procedures for halting construction, defining work stoppage zones, notifying stakeholders (e.g., agencies, Native Americans, SCE), and assessing NRHP and/or CRHR eligibility in the event unanticipated discoveries (historic or prehistoric site or object) 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, INF, 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, and analysts' data) at a facility that is approved by BLM, INF, and CPUC, and dissemination of reports to appropriate repositories.	
CUL-2	Prior to initiating construction, all construction personnel shall be trained by a qualified archaeologist regarding the recognition of possible buried cultural resources (i.e., prehistoric and/or historical artifacts, objects, or features) and protection of all archaeological resources during construction. Training shall inform all construction personnel of the procedures to be followed upon the discovery of cultural materials. All personnel shall be instructed that unauthorized removal or collection of artifacts is a violation of federal and state laws. Any excavation contract (or contracts for other activities that may have subsurface soil impacts) shall include clauses that require construction personnel to attend a WEAP. The WEAP will include the Project's potential for inadvertently exposing buried archaeological deposits, how to operate adjacent to and avoid any potential ESA, and procedures to treat unanticipated discoveries.	Reduce impacts to potentially eligible cultural resources.
CUL-3	Fourteen potentially eligible resources are located within Project area (CSP-Site-36; FS# 05045302547 [CSP-Site-318]; FS# 05045302557 [CSP-Site-337]; CSP-Site-55; CSP-Site-57; CSP-Site-102; CSP-Site-173; FS# 05045302548 [CSP-Site-322]; 14-005662 [CA-INY-5309]; 14-009042/CA-INY-7108H [FS# 05045302082]; CSP-Site-39; CSP-Site-40; 14-012314/CA-INY-9451 [FS# 05045302284]; 14-012315/CA-INY-9452 [FS# 05045302285]). To ensure the Project does not result in significant impacts to these resources, an archaeological monitor shall be present for all construction activities within 50 feet of the resources.	Reduce impacts to eligible or potentially eligible cultural resources.
CUL-4	Eight potentially eligible resources are located within Project area and may be impacted by Project Construction (FS# 05045302505 [CSP-Site-02], CSP-Site-07, CSP-Site-62, CSP-Site-107, CSP-Site-108, CSP-Site-183, FS# 05045302556 [CSP-Site-335], and 14-003717 [CA-INY-3717/H]/FS# 05045300512). It is recommended that the Project be redesigned to avoid the resources. If redesign is possible, an archaeological monitor shall be present for all construction activities within 50 feet of the resources to ensure the Project does not result in significant impacts. If avoidance is not feasible, a Historic Properties Treatment Plan (HPTP) to outline the treatment for any cultural resources that cannot be avoided will be required, as detailed in CUL-6.	Reduce impacts to eligible or potentially eligible cultural resources.
CUL-5	For five resources (CSP-Site-10, CSP-Site-38, 14-000259 [CA-INY-259]/P-14-002771 [CA-INY-2771], 14-001384 [CA-INY-1384/H], 26-004493 [CA-MNO-3970]) additional work (i.e., Phase II testing) is recommended to determine if Project construction has the potential to impact the archaeological deposits of the site. If the Phase II testing determines that there are no archaeological deposits that may be impacted by Project construction, an archaeological monitor shall be present for all construction activities within 50 feet of the resources to ensure the Project does not result in significant impacts. If the Phase II testing determines the Project will impact archaeological deposits and avoidance is not possible, a HPTP to outline the treatment for any cultural resources that cannot be avoided will be required, as detailed in CUL-6.	Mitigate impacts to cultural resources.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
CUL-6	If avoidance of NRHP- or CRHR-eligible resources is not feasible, SCE would prepare and submit a Historic Properties Treatment Plan (HPTP) to outline the treatment of cultural resources that cannot be avoided. The HPTP would be submitted to the appropriate agencies for review and approval. All treatment measures outlined in the HPTP would be implemented at least 30 days before the start of construction.	Document impacts to eligible cultural resources.
CUL-7	The Control- Silver Peak 'A' (Survey ID No. 33) and Control- Silver Peak 'C' (Survey ID No. 34) transmission lines, will be affected by construction of the Project. Prior to construction, the lines should be documented according to HAER Level II standards, consistent with SCE's Historic-Era Electrical Infrastructure Management Program.	Reduce impacts to cultural resources generally.
CUL-8	SCE would perform surveys prior to construction for any Project areas not yet surveyed (e.g., new or modified staging areas, pull sites, or other work areas). Resources discovered during the surveys would be subject to CUL-1 through CUL-6, above, and CUL-9, below, as appropriate.	Reduce impacts to cultural resources generally.
CUL-9	If cultural resources are encountered during construction activity, SCE and/or its contractors shall halt work in the immediate vicinity of the find. The find shall be evaluated by a qualified archaeologist before construction activity may resume. If the qualified archaeologist determines that the find may be significant, and if avoidance of the find is determined to be infeasible, the archaeologist shall notify the lead agencies and shall follow the procedures established for the treatment and mitigation of unanticipated discoveries in the CRMP, in consultation with the lead federal and state agencies. SCE shall be responsible for the resultant mitigation costs	Reduce impacts to cultural resources generally.
HAZ-1	SCE will prepare and implement a Hazardous Materials Management Plan (HMMP)/Hazardous Materials Business Plan (HMBP), during project construction. The program will outline proper hazardous materials handling, use, storage and disposal requirements, as well as hazardous waste management procedures. This plan will be developed to ensure that all hazardous materials and wastes will be handled and disposed of according to applicable rules and regulations. If on site refueling is necessary, BMPs should be implemented in accordance with the project SWPPP. Refueling stations and fuel tanks will be located, maintained and operated during construction in accordance with applicable laws and regulations pertaining to hazardous materials. If more than 1320 gallons of petroleum products in containers greater than 55-gallons, a SPCC plan must be created prior to products being brought on-site	Reduce hazardous materials-related impacts.
HAZ-2	A Soil Management Plan will be developed and implemented for the proposed project. The Soil Management Plan will provide guidance for the proper handling, on-site management, and disposal of impacted soil that -may be encountered during construction activities.	Reduce hazardous materials-related impacts.
HAZ-3	A Fire Prevention and Emergency Response Plan will be developed to ensure the health and safety of construction workers, SCE personnel, and the public during Project construction. The Plan shall cover: • The purpose and applicability of the plan • Responsibilities and duties • Project areas where the plan applies • Procedures for incorporating Red Flag Warnings, Fire Potential Index (FPI), Project Activity Level (PAL), and equivalent indicators in determining fire weather related work restrictions. Procedures for fire reporting, response, prevention, and evacuation routes • Coordination procedures with federal and local fire officials • Crew training, including fire safety practices and restrictions • Fire suppression and communication equipment required to be on hand during construction • Method for verification that Plan protocols and requirements are being followed • Post-construction fire prevention and response measures The Project-specific Fire Prevention and Emergency Response Plan for construction of the project shall be prepared by SCE and submitted to the CPUC and federal and county fire agencies for review at least 30-days prior to the initiation of construction. SCE shall	Reduce hazardous materials-related impacts.

Table 3.11-1: Applicant Proposed Measures

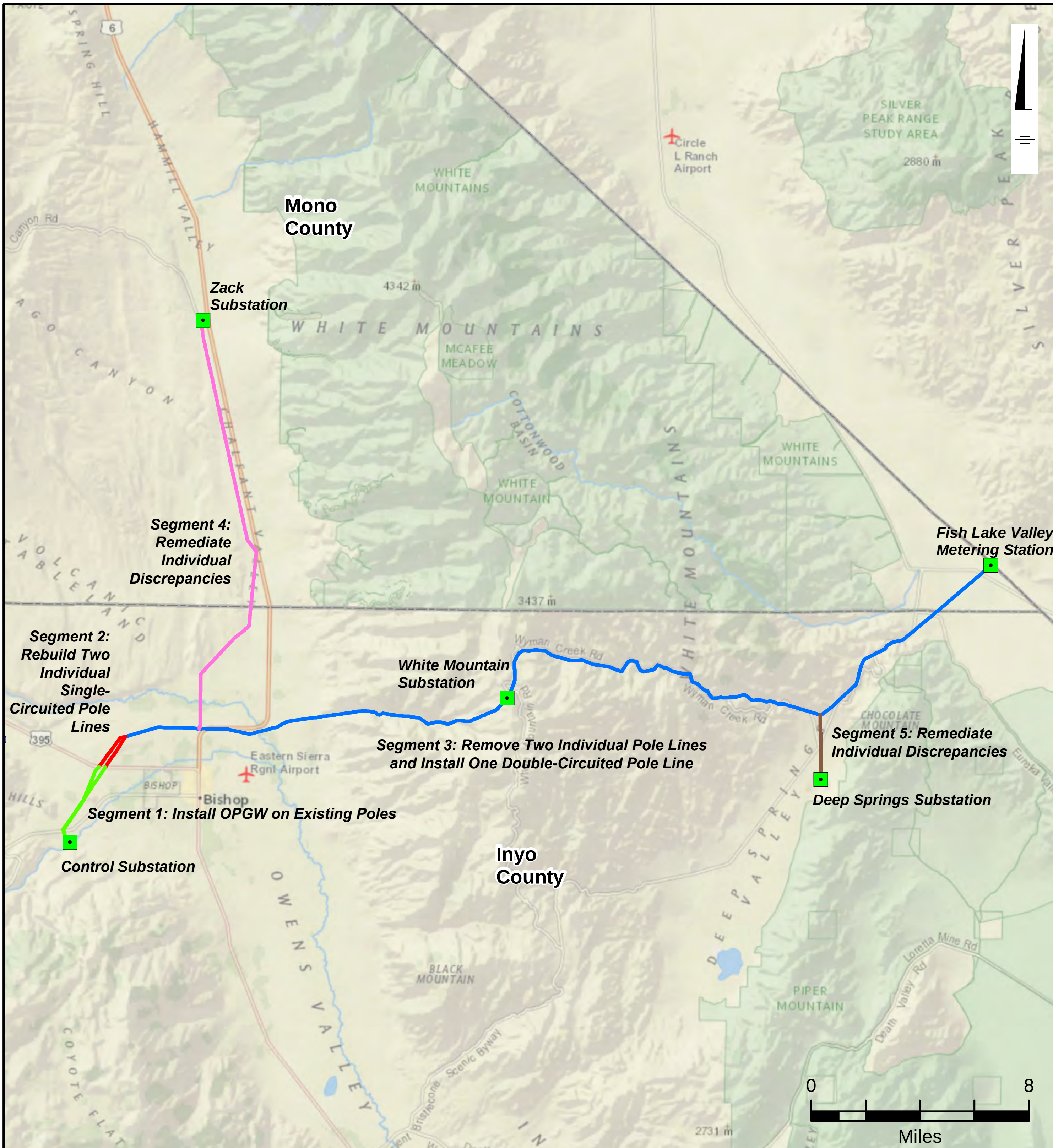
APM Number	Description	Justification
	address all comments received from reviewing agencies and provide the final Fire Prevention and Emergency Response Plan to reviewing agencies for approval prior to initiating construction activities.	
NOI-1	SCE shall employ the following noise-control techniques, at a minimum, to reduce construction noise exposure at noise-sensitive receptors during construction: • Construction activities shall 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 shall use noise reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. • Stationary noise sources (e.g., generators, pumps) and staging areas shall be shielded by an enclosure, temporary sound walls, acoustic blankets, or other barrier where noise levels are above 80 dBA at sensitive receptor locations. Heights and specifications of noise barriers will be designed to reduce construction noise to below 80 dBA (FTA, 2006). • Construction traffic and helicopter flight shall be routed away from residences and schools. • Unnecessary construction vehicle use and idling time shall be minimized. If a vehicle is not required for use immediately or continuously for construction activities, its engine shall be shut off.	Reduce noise-related impacts.
PAL-1	**Develop Paleontological Resource Mitigation and Monitoring Plan.** SCE shall prepare a Paleontological Resources Mitigation and Monitoring Plan (PRMMP) to guide all paleontological management activities during project construction. The PRMMP shall be submitted to the BLM, USFS, and CPUC for review and approval at least 90 days prior to the start of construction. The PRMMP shall be prepared by a qualified paleontologist, based on Society of Vertebrate Paleontology (SVP) 2010 guidelines, and meet all regulatory requirements. The qualified paleontologist shall have a Master's Degree or Ph.D. in paleontology, have local paleontology knowledge, and shall be familiar with paleontological procedures and techniques. The PRMMP will include, but not be limited to, the following sections: **Paleontological Resource Monitoring and Reporting**: Detail monitoring procedures and methodologies, which shall require a qualified paleontological monitor for all construction-related ground disturbance that reach approximate depths for significant paleontological resources in sediments with moderate (PFYC 3a) to very high (PFYC 5) sensitivity. Sediments of undetermined sensitivity shall be monitored on a part-time basis as outlined in the PRMMP. Sediments with very low or low sensitivity will not require monitoring. Paleontological monitors shall meet standard qualifications per the SVP (2010). **Unanticipated Discovery Protocol**: Detail procedures for temporarily halting construction, defining work stoppage zones, notifying stakeholders, and assessing the paleontological find for scientific significance. If indicators of potential microvertebrate fossils are found, screening of a test sample shall be carried out as outlined in SVP 2010. **Data Analysis and Reporting**: Detail methods for data recovery, analysis in a regional context, reporting of results within one year of completion of field studies, curation of all fossil specimens in an accredited museum repository approved by the BLM, USFS, or CPUC, and dissemination of reports to appropriate repositories.	Reduce or avoid impacts to paleontological resources.
PAL-2	**Train Construction Personnel.** Prior to the initiation of construction, all construction personnel shall be trained, regarding the recognition of possible buried paleontological resources (i.e. fossils) and protection of all paleontological resources during construction. Training shall inform all construction personnel of the procedures to be followed upon the discovery of paleontological materials. All personnel shall be instructed that unauthorized removal or collection of fossils is a violation of Federal and State laws. Any excavation contract (or contracts for other activities that may have subsurface soil impacts) shall include clauses that require construction personnel to attend a Worker's Environmental Awareness Training Program (WEAP). The WEAP will include the project's potential for	Reduce or avoid impacts to paleontological resources.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
	inadvertently exposing buried paleontological resources, how to operate adjacent to and avoid any potential Environmentally Sensitive Area, and procedures to treat unanticipated discoveries.	
PAL-3	**Conduct Paleontology Resources Construction Monitoring**. Paleontological monitoring shall be conducted by a qualified paleontologist familiar with the types of resources that could occur within the project area. The qualifications of the principal paleontologist and monitors shall be approved by the BLM, USFS, and CPUC. Monitoring reports shall be submitted to the BLM, USFS, and CPUC on a monthly basis.	Reduce or avoid impacts to paleontological resources.
REC-1	When temporary closures to recreational areas are necessary for construction activities, SCE will coordinate those closures with recreational facility owners.	Reduce recreation-related impacts
TRA-1	SCE shall prepare and implement a Traffic Management Plan subject to approval of the appropriate state agency and/or local government(s). The approved Traffic Management Plan and documentation of agency approvals shall be submitted to the CPUC prior to the commencement of construction activities. The plan shall: • Include a discussion of work hours, haul routes, work area delineation, traffic control and flagging; • Identify all access and parking restriction and signage requirements; • Require workers to park personal vehicles at the approved staging area and take only necessary Project vehicles to the work sites; • Lay out plans for notifications and a process for communication with affected residents and landowners prior to the start of construction. Advance public notification shall include posting of notices and appropriate signage of construction activities. The written notification shall include the construction schedule, the exact location and duration of activities within each street (i.e., which road/lanes and access point/driveways will be blocked on which days and for how long), and a toll-free telephone number for receiving questions or complaints; • Include plans to coordinate all construction activities with emergency service providers in the area. Emergency service providers will be notified of the timing, location, and duration of construction activities. All roads will remain passable to emergency service vehicles at all times; and • Identify all roadway locations where special construction techniques (e.g., night construction) will be used to minimize impacts to traffic flow. Construction activities completed within public street rights-of-way will require the use of a traffic control service, and all lane closures will be conducted in accordance with applicable requirements. These traffic control measures will be 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) as applicable.	Reduce traffic flow-related impacts.
TRA-2	Prior to construction, SCE shall consult 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. The results of this coordination will be provided to the CPUC.	Reduce impacts from helicopter activities.

Table 3.11-1: Applicant Proposed Measures

APM Number	Description	Justification
WET-1	**Avoid and/or Minimize Impacts to Jurisdictional Waters, Wetlands, and Riparian Habitats.** The project shall 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, fill, staging of equipment, infrastructure construction or removal, and all other construction activities shall be designed, sited, and conducted outside of state and federally jurisdictional waters, wetlands, and riparian habitat to the maximum extent feasible. The implementation of appropriate Best Management Practices (BMPs) (e.g., silt fencing, straw wattles, secondary containment, avoiding fueling in close proximity to waters, etc.) shall be utilized to ensure that indirect impacts to jurisdictional waters, wetlands and riparian areas are avoided or minimized to the maximum extent feasible. BMPs are also necessary to reduce the risk of an unintended release of sediment or other material into jurisdictional waters. New and upgraded roadways will use at-grade type stream crossings, where possible. Stockpiled and bermed sediment will be redistributed or removed from the site so as not to alter flows. New poles will be sited outside stream channels to the extent possible. If permanent impacts to waters, wetlands, and riparian habitats are unavoidable, they shall be mitigated for at a minimum of a 1:1 ratio, or at a ratio determined by the applicable Resource Agencies (i.e., USACE, the State Water Resources Control Board/Regional Water Quality Control Boards, and CDFW). Temporary impacts to jurisdictional waters shall be returned to pre-existing contours upon completion of the work.	Reduce impacts to jurisdictional waters, wetlands, and riparian habitats.



Legend

- Substation
- County
- Segment 1
- Segment 2
- Segment 3
- Segment 4 (Zack Tap)
- Segment 5 (Deep Springs Tap)

CONTROL-SILVER PEAK PROJECT

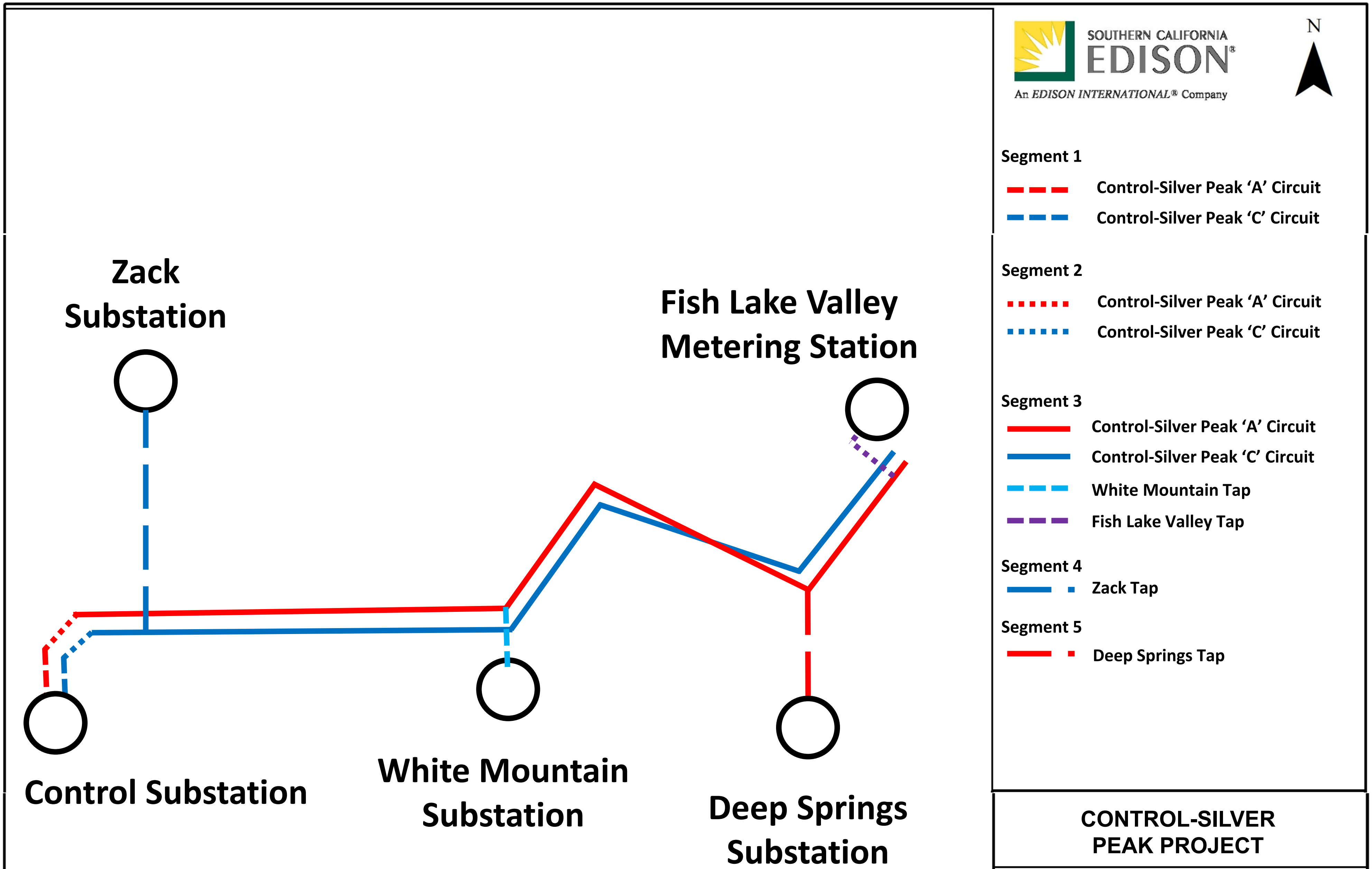
DISCREPANCY REMEDIATION APPROACHES

ARCADIS | SOUTHERN CALIFORNIA EDISON

FIGURE 3.1-1

City: Div/Group: Created By: Last Saved By: avi00976
Project (Project #)
Z:\GISProjects_ENV\SCE\SCE_TLLRVArcGIS_Desktop\PEA_Figures\CSP\Figure4-12-1_Mines_CSP.mxd 9/26/2019 2:36:52 AM

Page left intentionally blank.

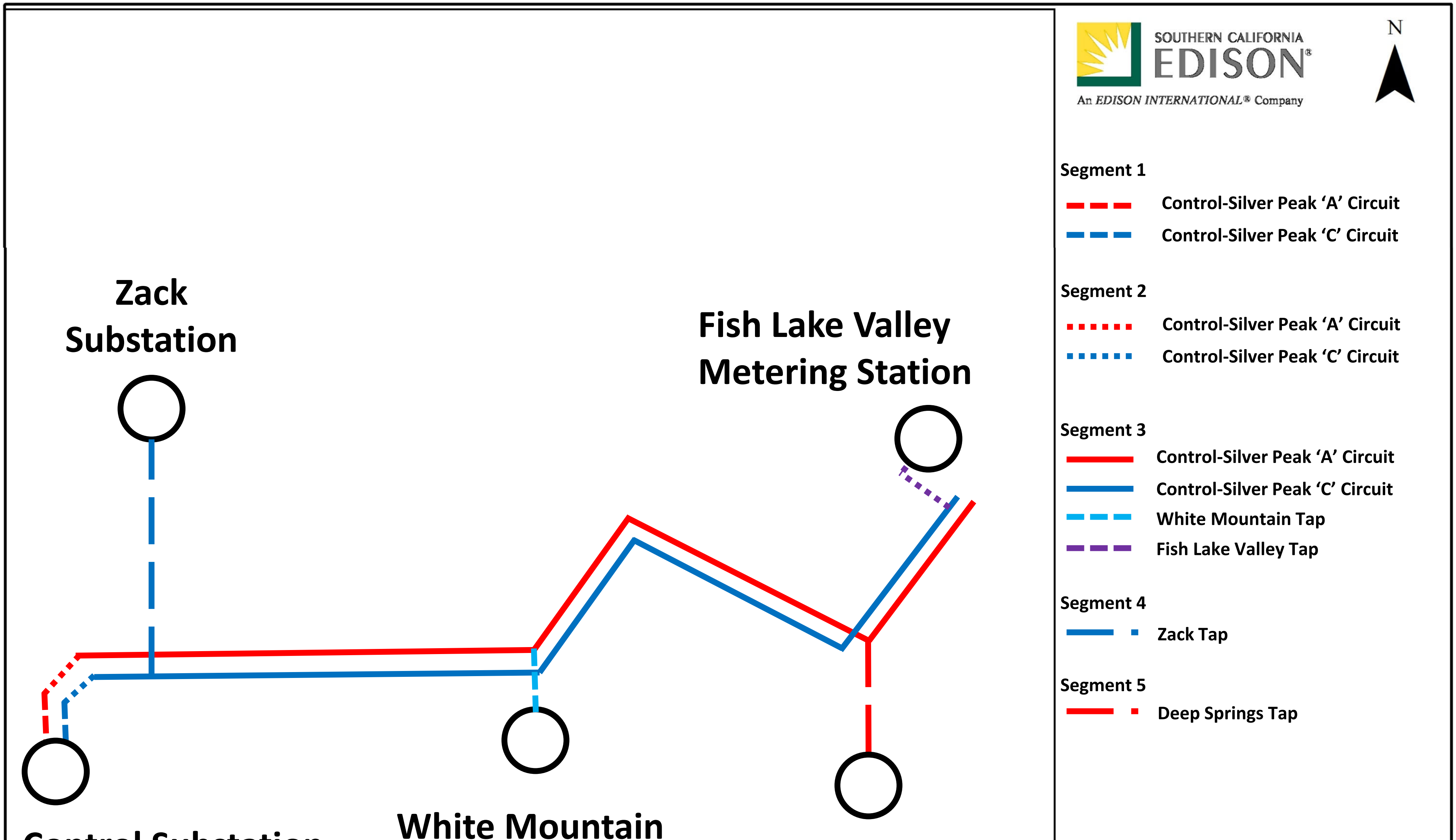


CONTROL-SILVER PEAK PROJECT

EXISTING SYSTEM

ARCADIS

FIGURESET 3.2-1

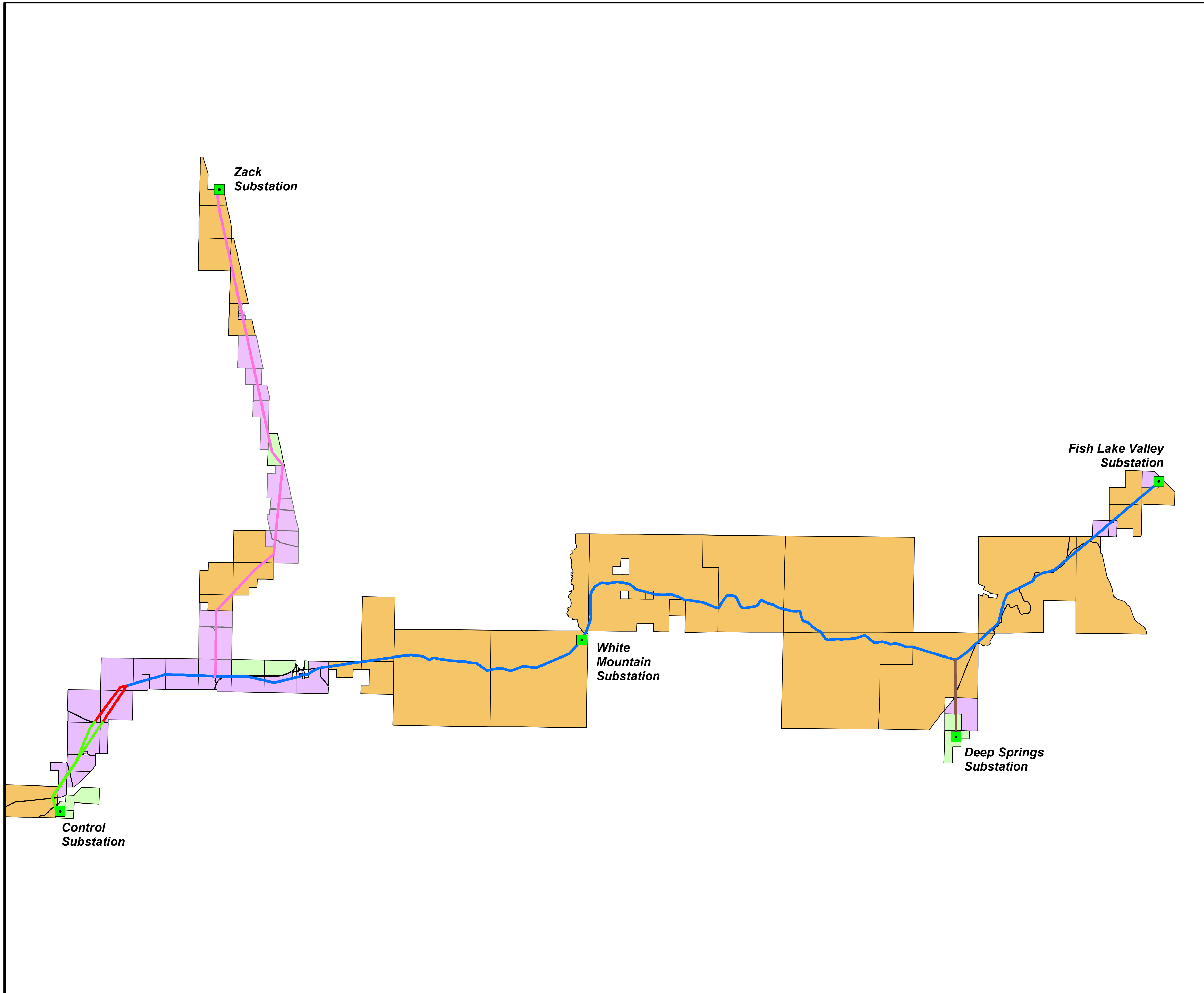


CONTROL-SILVER PEAK PROJECT

REVISED SYSTEM

ARCADIS

FIGURESET 3.2-1



[redacted]

Legend

- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4 (Zack Tap)
- Segment 5 (Deep Springs Tap)
- Government Lands
- Easement
- TCE
- TCE and Easement

0 1.5 3 6
Miles

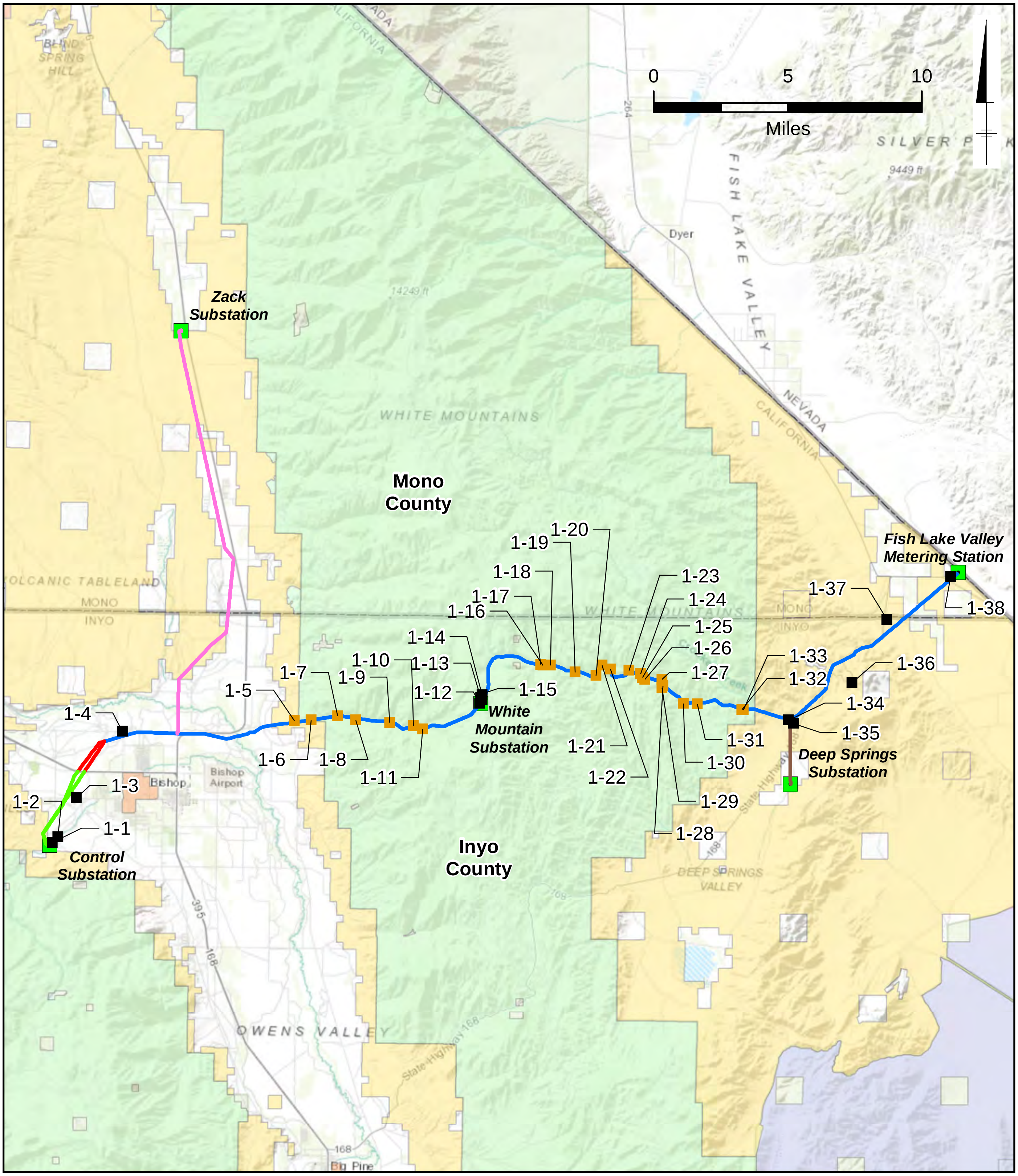
CONTROL-SILVER PEAK PROJECT

ACQUISITION PLAN

[redacted]

FIGURE
3.4-1

City: Div/Group: Created By: Last Saved By: mgi01044
Project (Project #)
T:\ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\CSP\Figure3-4-1_Acquisition Plan.mxd 05/24/2021 10:56:09 AM



Legend

- Staging Area
- Construction Laydown Area
- Segment 1
- Segment 2
- Segment 3
- Segment 4 (Zack Tap)
- Segment 5 (Deep Springs Tap)
- Substation
- Bureau of Land Management
- Bureau of Indian Affairs
- U.S. Forest Service
- National Park Service
- Counties

CONTROL-SILVER PEAK PROJECT

STAGING AREAS

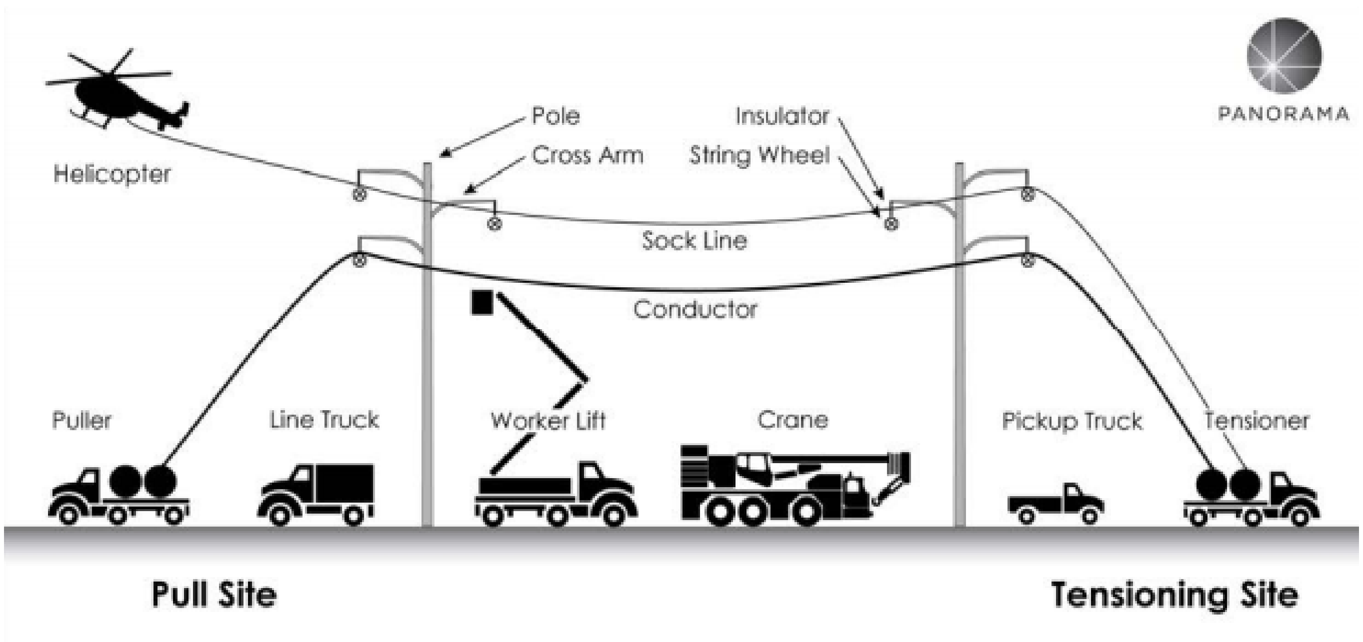
ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

FIGURE 3.5-1

City: Div/Group: Created By: Last Saved By: MGI01044
Project (Project #)
Z:\GISProjects_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\CSP\Figure3-7-1_MaterialYards_CSP.mxd 2/26/2020 2:39:26 AM

Page left intentionally blank.



Source: CPUC 2017

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

CONTROL-SILVER PEAK PROJECT

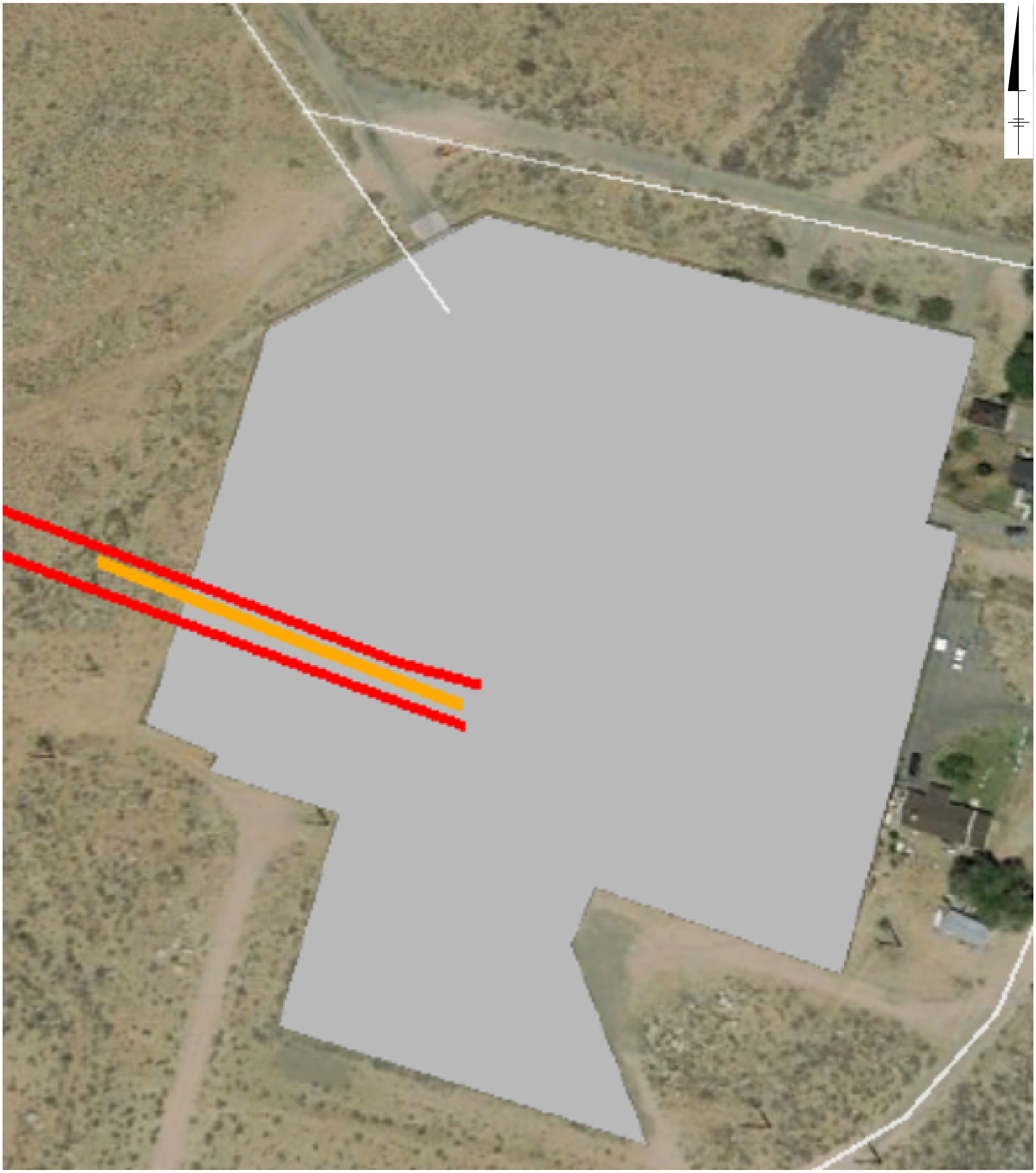
TYPICAL PULL-AND-TENSION/ STRINGING SITE SET-UP

ARCADIS

FIGURE 3.5-2

Page intentionally left blank.

City: Div/Group: Created By: Last Saved By: MGI01044
Project (Project #)
Z:\GISProjects_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\CSP\Figure3-7-2_TelecommunicationsUndergroundRoutes_CSP.mxd 2/13/2019 1:48:56 PM



Control Substation

Legend

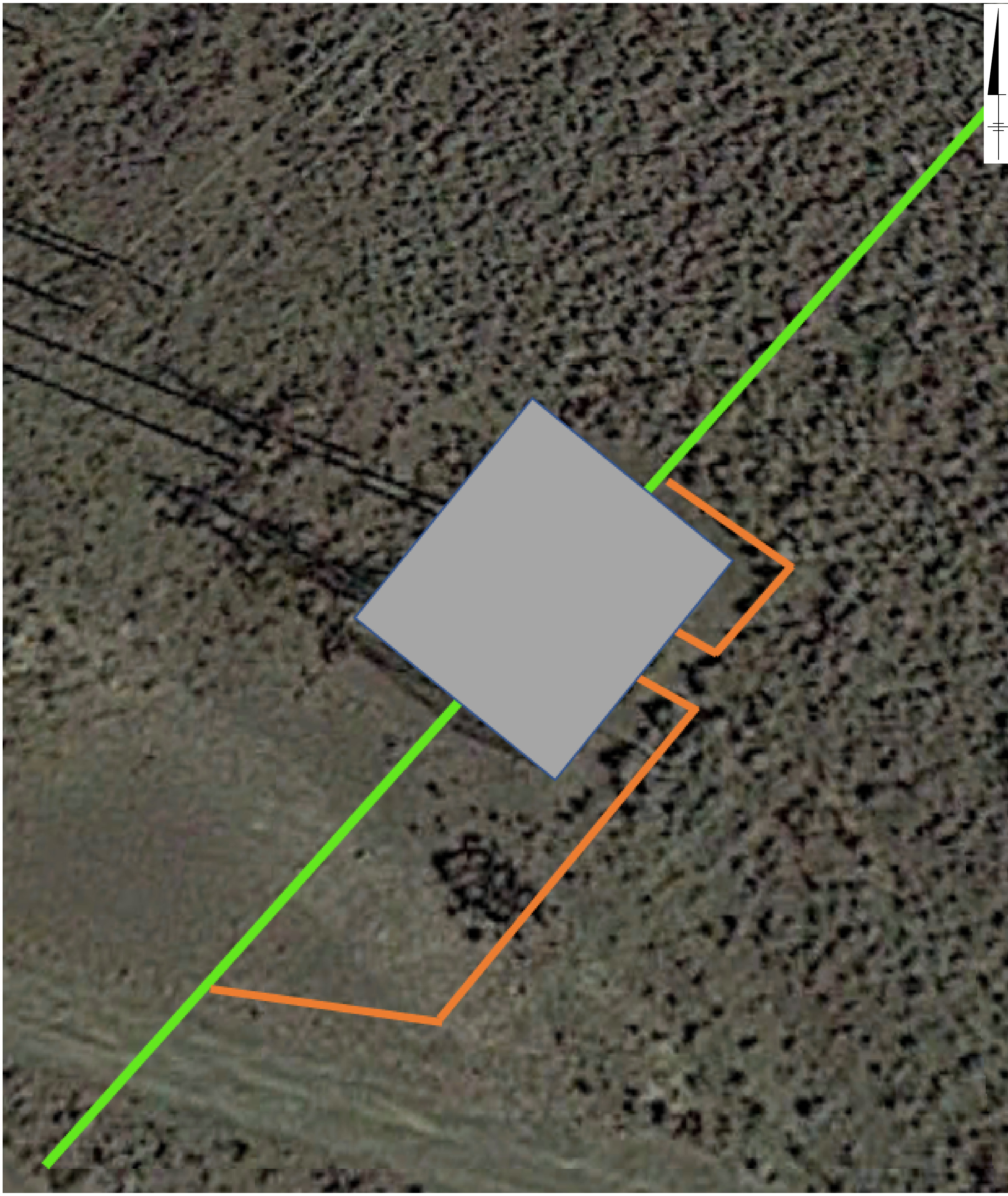
- Telecom Underground Segment
- Segment 1
- Area Within Substation Fence Line

CONTROL-SILVER PEAK PROJECT

TELECOMMUNICATIONS UNDERGROUND ROUTES

ARCADIS | SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURESET 3.5-3



White Mountain Substation

Legend

- Telecom Underground Segments
- Segment 3
- Area Within Substation Fence Line

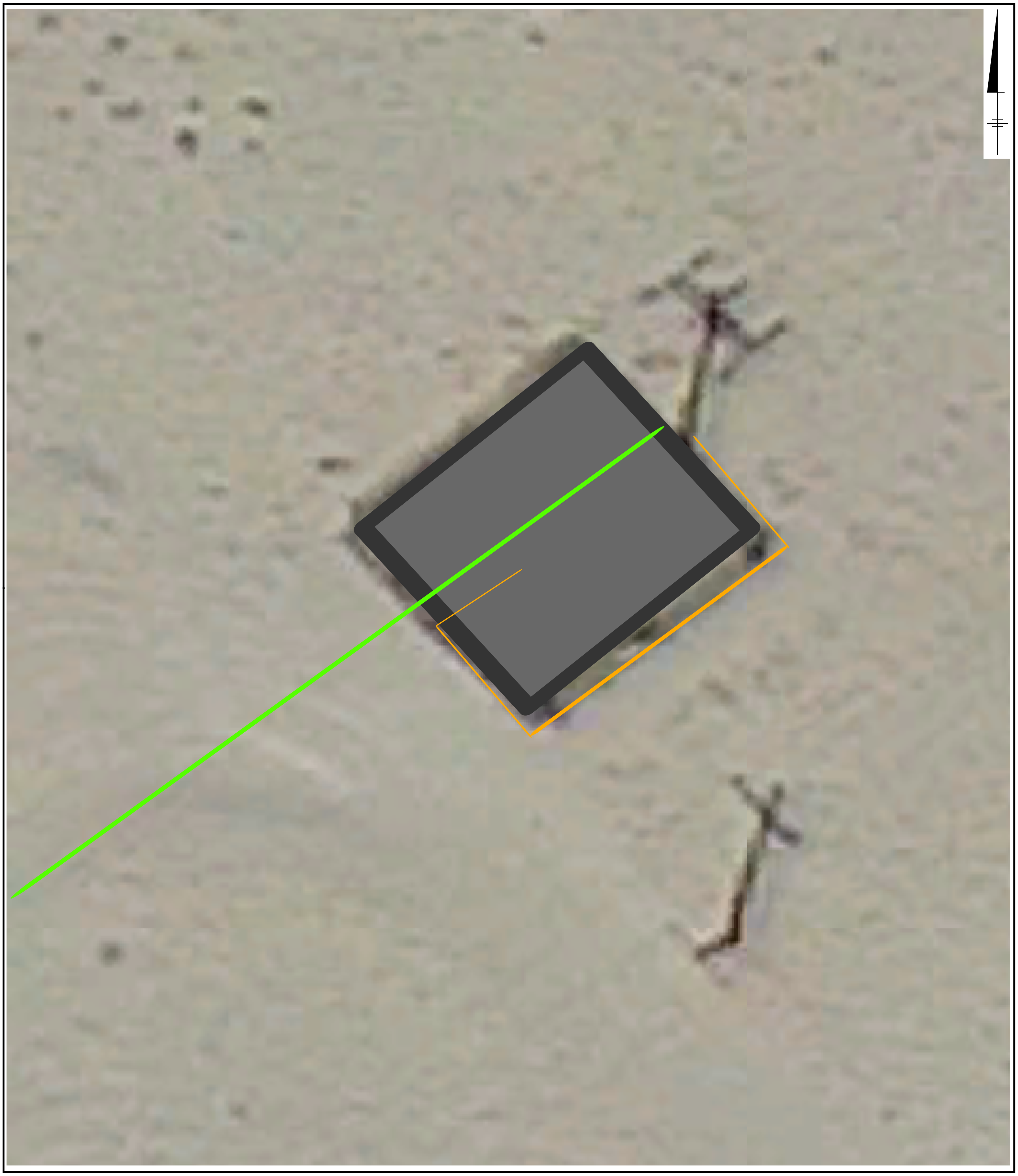
0 300
Feet

CONTROL-SILVER PEAK PROJECT

TELECOMMUNICATIONS UNDERGROUND ROUTES

ARCADIS | SOUTHERN CALIFORNIA EDISON

FIGURESET
3.5-3



Legend

- Telecom Underground Segments
- Segment 3
- Area Within Substation Fence Line

Fish Lake Valley Metering Station

CONTROL-SILVER PEAK PROJECT

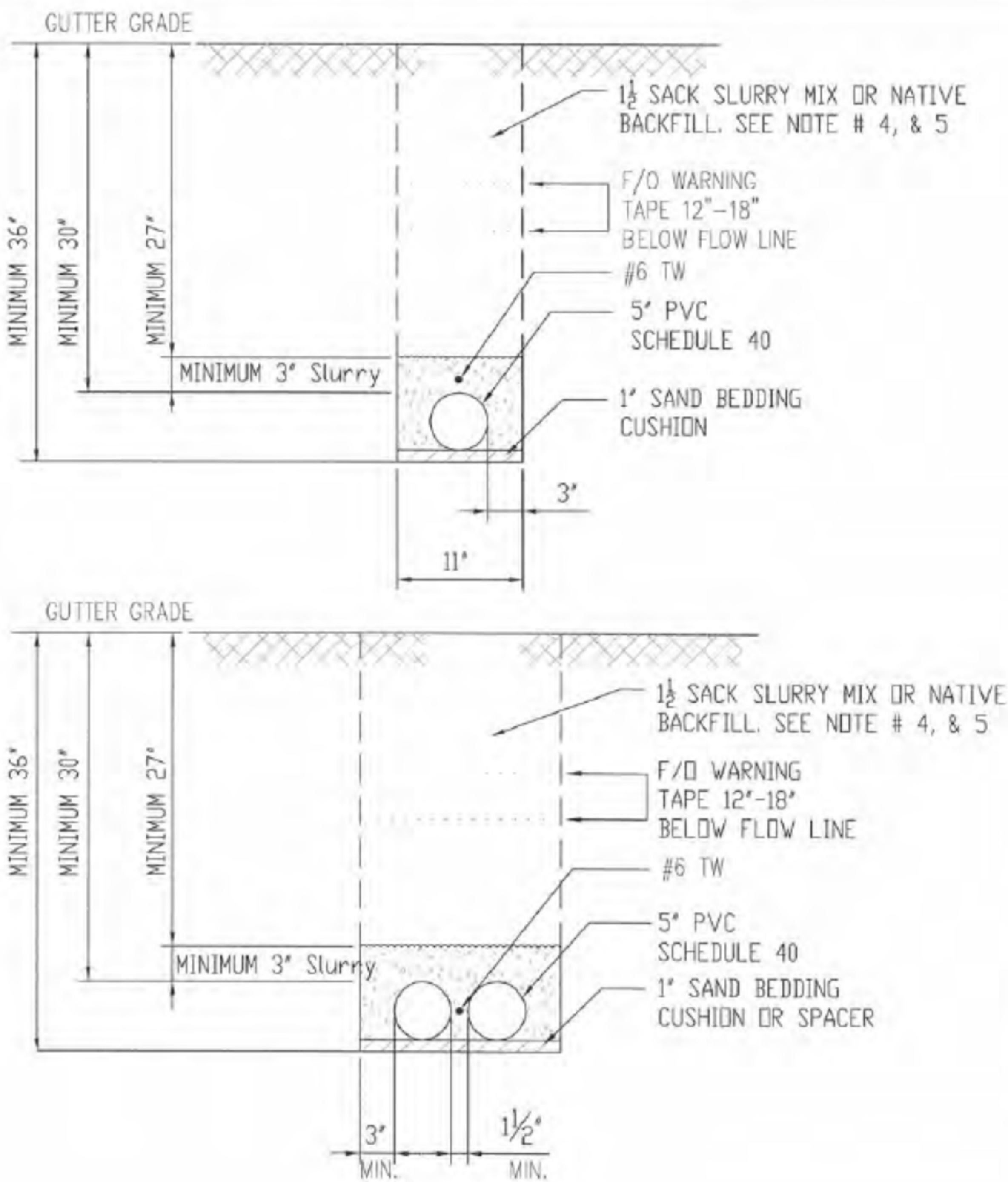
TELECOMMUNICATIONS UNDERGROUND ROUTES

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURESET 3.5-3

Page left intentionally blank.



SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

N

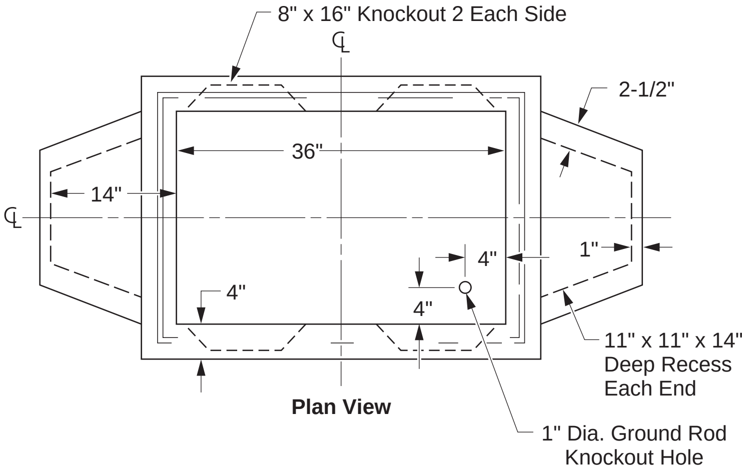
CONTROL-SILVER PEAK PROJECT

TELECOMMUNICATIONS CONDUIT INSTALL DETAILS

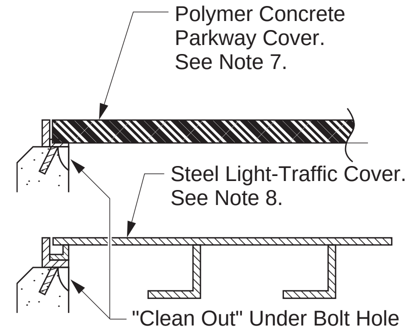
ARCADIS

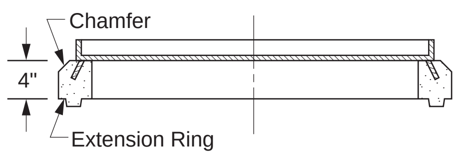
FIGURE 3.5-4

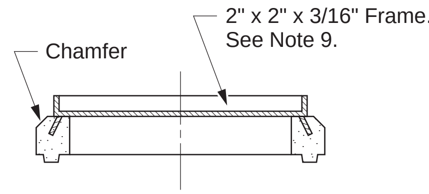
Page intentionally left blank.

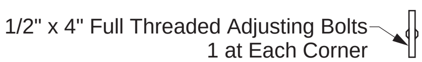


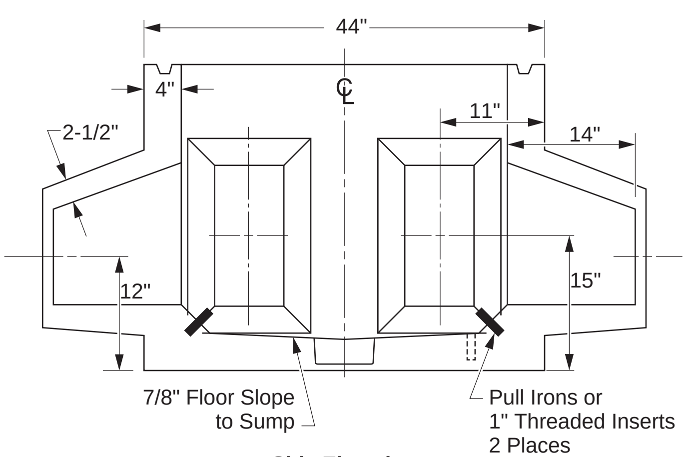
Plan View



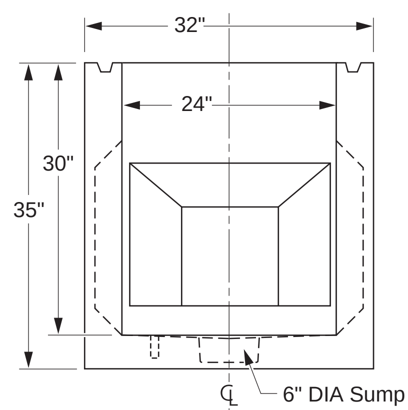








Side Elevation



End Elevation

CONTROL-SILVER PEAK PROJECT

VAULT/PULL BOX DETAIL

ARCADIS | SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL Company

FIGURE

3.5-5

Page left intentionally blank.

4 Description of Alternatives

This Chapter identifies alternatives to the proposed CSP Project. 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.

The CSP Project is being proposed to meet the following objective: Ensure compliance with standards contained in GO 95 and NERC Facility Ratings.

This objective was used to develop and evaluate alternatives to the CSP Project. Several corrective actions were considered but dismissed as infeasible as they would not feasibly attain the objective, or for other considerations.

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 Alternatives

4.1.3.1 Decommission and Remove Both 'A' and 'C' Circuits Alternative

SCE analyzed multiple variations of the potential for decommissioning and removing the existing 55 kV subtransmission lines included under the CSP Project. However, any alternative that involves removal of these lines would result in unacceptable impacts to the operational reliability for customers served by multiple utilities in the area.

These existing 55 kV subtransmission lines include the joint-owned Control-Silver Peak 'A' and 'C' 55 kV subtransmission lines and collectively form the WECC Path 52. This path has a bi-directional rating of 17 MW and serves to provide supporting services to both SCE and NV Energy based on their respective system needs including, but not limited to, load services and system reliability. The joint-owned Control-Silver Peak 'A' 55 kV Subtransmission Line serves as the primary source for the tap-connected Deep Springs and White Mountain substations and the Fish Lake Valley Metering Station, while the joint-owned Control-Silver Peak 'C' 55 kV Subtransmission Line serves as the primary source for the tap-connected Zack Substation. Additionally, the existing 55 kV lines connect three utilities (SCE, VEA, and NV Energy), providing electrical stability and voltage support to all three interconnected utilities.

The decommissioning and removal of the existing 55 kV subtransmission lines would not only eliminate VEA's only electrical source, but also would adversely affect SCE and NV Energy. Each line serves as a back-up source to the other line, allowing service under outage conditions to be maintained by opening primary source disconnects and closing back-up source line disconnects. Severing this tie between SCE and NV Energy would not only eliminate the lone source(s) to the aforementioned substations but would also have adverse impacts on the system reliability of both utilities. Currently, customers on SCE's system can continue to be served continuously (with no break in service) and seamlessly (with no degradation in quality of service) even when outages occur on SCE's system. Voltage fluctuations are minimized, and bi-directional power flow contributes to continuous and seamless service for all SCE customers served from substations connected to these lines. SCE's system also supports the NV Energy local grid via these inter-utility lines. Therefore, decommission and removal of both the 'A' and 'C' circuits would adversely affect area system stability.

Under all variations of this alternative, the Zack, White Mountain, and Deep Springs substations would be electrically isolated. These substations would be islanded/disconnected from SCE's electrical grid and therefore, will not have an electrical source. The removal of the electrical source would deenergize these substations, thereby eliminating electrical service to customers served from these substations. The loads served out of these stations would be left without service, which is inconsistent with SCE's obligation to provide electricity to these customers. In order to continue to meet SCE's obligation to serve, extensive designs including remote islanded generation that can be refueled indefinitely would have to be engineered, designed and constructed to serve these communities. This would result in additional environmental impacts from that construction.

The matter is further complicated at the Fish Lake Valley Metering Station, which serves VEA's distribution system, because SCE has a contractual agreement with VEA to serve their distribution loads via the Fish Lake Valley Metering Station. The removal of the CSP 'A' and 'C' circuits would effectively disconnect the VEA system from SCE's grid and permanently connect VEA's system to NV Energy. Should this occur, SCE would be required to change its contract with VEA and ensure that NV Energy would be the sole provider of service to VEA's system. This in turn, would require extensive upgrades on NV Energy's system. NV Energy has expressed an unwillingness to further evaluate being the sole provider of service to VEA's system. As such, this option would be infeasible due to the potential of deenergizing the entire VEA system and eliminating service to the same.

In short, for all the reasons stated above, these lines are necessary to serve load out of the Deep Springs, White Mountain, and Zack substations and the Fish Lake Valley Metering Station, and the resulting impacts to reliable service in the area if they were removed renders this alternative infeasible.

4.1.3.2 Decommission and Remove Either 'A' or 'C' Circuit Alternative

Under this Alternative, either the existing 'A' or 'C' circuit (but not both) would be decommissioned and removed. For many of the same reasons listed above, removing this infrastructure is considered infeasible as each line serves as a back-up source to the other line, allowing service under outage conditions to be maintained by opening primary source disconnects and closing back-up source line disconnects. Therefore, removal of the 'A' circuit would result in each of the Deep Springs, White Mountain, and Zack substations and the Fish Lake Valley Metering Station being supplied by the 'C' circuit alone; this eliminates redundancy in the system. The reverse also holds true for the removal of the 'C' circuit.

The existing infrastructure in the area provides for a double circuit path connecting three utilities, VEA, NV Energy and SCE. The 'A' and 'C' circuits comprise WECC Path 52 and offer several benefits to the local area as well as to the interconnected utilities. While providing redundancy to serve local communities, SCE also provides a redundant source to VEA via these two circuits. The removal of a single circuit would eliminate redundancy to several substations in the area including VEA. This would drastically reduce system reliability and operational flexibility to SCE's local grid, as well as affect the flexibility of inter-utility operations.

In addition to these issues, after removal of either circuit, under normal operations, the remaining circuit would have to carry all the load. Increasing the load on the remaining circuit would result in increased conductor sag, which could exacerbate existing clearance infractions as well as potentially create additional infractions.

Furthermore, from a reliability standpoint, it should be noted that the CSP 'A' and 'C' circuits are among the worst performing circuits as compared to SCE's equivalent infrastructure in the same voltage class. These circuits experience frequent outages due to many issues, and therefore redundancy is imperative to maintain a reasonable quality of service to the communities served by these lines.

Consequently, the decommissioning and removal of either one of these two circuits would not be feasible.

4.1.3.3 Decommission and Remove with Upgrades Alternatives

For the reasons set forth above, decommissioning and removal of one or both the existing 'A' and 'C' circuits is considered infeasible. However, further analysis of the potential for decommissioning the existing 55 kV lines—included under the CSP Project—was undertaken with consideration of constructing additional infrastructure needed to support decommissioning and removing of some of the existing facilities. Below, each of the sub-sections describes which additional infrastructure would be upgraded or decommissioned as part of separate individual alternatives.

4.1.3.3.1 Decommission and Remove SCE's portion of the joint-owned Control-Silver Peak 'A' 55 kV Subtransmission Line, combined with making other Upgrades

Under this alternative, SCE would remove a section of one of the 55 kV CSP subtransmission lines, namely SCE's portion of the Control-Silver Peak 'A' 55 kV Subtransmission Line. The existing joint-owned Control-Silver Peak 'A' 55 kV Subtransmission Line consists of approximately 44.5 miles owned by SCE, including 2.4 miles required to tap-connect the Deep Springs and White Mountain substations and the Fish Lake Valley Metering Station, and approximately 23.5 miles owned by NV Energy (this portion is located in the State of Nevada). This line is under CAISO control except for the section in Nevada and the tap lines connecting Deep Springs Substation, White Mountain Substation and the Fish Lake Valley Metering Station. The infrastructure near the California-Nevada border would not be removed, as it is the transition point between three utility entities – namely NV Energy, VEA and SCE.

Decommissioning and removing SCE's portion of the joint-owned Control-Silver Peak 'A' 55 kV Subtransmission Line without upgrades on the other line is infeasible. However, decommissioning and removing a portion of the 'A' circuit would be feasible if certain additional infrastructure were constructed.

First, to address the load service requirements at Deep Springs and White Mountain substations and the Fish Lake Valley Metering Station, SCE could rebuild the joint-owned Control-Silver Peak 'C' 55 kV Subtransmission Line. The 'C' circuit would become the only source to provide service to these substations. Reconstruction would be required to remediate existing discrepancies along the 'C' circuit. Remote disconnect switches on each side of the tap connection points would be required as part of this upgrade.

Second, this alternative would require further upgrades on the NV Energy segment of the 'A' circuit since that segment would no longer be connected to SCE, if SCE's portion is decommissioned and removed. Such upgrades could take the form of, at minimum, a new substation (which may trigger its own licensing process or requirements) at the California/Nevada State line. This substation would serve to connect the remaining portion of the Nevada side of the line, by reconfiguring the facilities at the State line as illustrated in Figure 4.1-1. Removal of SCE's portion of the CSP 'A' circuit, and the new substation, would effectively re-configure WECC Path 52. The re-configuration of WECC Path 52 could require significant costly and environmentally impactful infrastructure upgrades on NV Energy's system. These upgrades would be needed to maintain the reliability of WECC Path 52 on a long-term basis. However, the full scope of additional work that would be needed to completely implement this alternative would have to be identified and implemented by NV Energy.

Third, new conductor and remote disconnect switches would also be needed to ensure continued operation of WECC Path 52 and radial service to local customers. Decommissioning a portion of the 'A' circuit would result in eliminating one of the two 55 kV Control-Silver Peak subtransmission lines thereby eliminating a second redundant source for loads served by SCE out of the Deep Springs, White Mountain, and Zack substations However, rebuilding the line with an appropriately-sized conductor would ensure that the bi-directional capacity of Path 52 is not adversely impacted under normal operating conditions, and installing remote disconnect switches on each side of the tap connection points would afford a means to reestablish temporary service in a radial fashion from either the Control or Silver Peak substations.

Consequently, decommissioning and removing SCE's portion of the joint-owned Control-Silver Peak 'A' 55 kV Subtransmission Line while implementing upgrades on the CSP 'C' circuit is feasible.

4.1.3.3.2 Decommission and Remove SCE's portion of the joint-owned Control-Silver Peak 'C' 55 kV Subtransmission Line, combined with making other Upgrades

Under this alternative, SCE would remove a section of one of the 55 kV CSP Project subtransmission lines, namely SCE's portion of the Control-Silver Peak 'C' 55 kV Subtransmission Line. The existing joint-owned Control-Silver Peak 'C' 55 kV subtransmission line consists of approximately 58.1 miles owned by SCE, including 16.0 miles required to tap-connect the Zack Substation, and approximately 23.5 miles owned by NV Energy (this portion is located in the State of Nevada). This line is under CAISO control except for the section in Nevada and the tap line connecting Zack Substation.

Decommissioning and removing SCE's portion of the joint-owned Control-Silver Peak 'C' 55 kV Subtransmission Line without upgrades on the other line is infeasible. However, decommissioning and removing a portion of the 'C' circuit would be feasible if certain additional infrastructure were constructed.

First, to address load service requirements at Deep Spring, White Mountain, and Zack substations, SCE could rebuild the joint-owned Control-Silver Peak 'A' 55 kV Subtransmission Line. The 'A' circuit would become the only source to provide service to these stations. Reconstruction would be required to remediate existing discrepancies along the 'A' circuit. Remote disconnect switches on each side of the tap connection points will be required as part of this upgrade.

Second, this alternative would require further upgrades on the NV Energy segment of the 'C' circuit since that segment would no longer be connected to SCE, if SCE's portion is decommissioned and removed. Such upgrades could take the form of, at minimum, a new substation (which may trigger its own licensing process or requirements) at the California/Nevada Stateline. This substation would serve to connect the remaining portion of the Nevada side of the line, by reconfiguring the facilities at the Stateline as illustrated in Figure 4.1-1. Removal of SCE's portion of the CSP 'C' circuit, and the new substation, would effectively re-configure WECC Path 52.

The re-configuration of WECC Path 52 could require significant costly and environmentally impactful infrastructure upgrades on NV Energy's system. These upgrades would be needed to maintain the reliability of WECC Path 52 on a long-term basis. However, the full scope of work that would be needed to completely implement this alternative would have to be identified and implemented by NV Energy.

Third, new conductor and remote disconnect switches would also be needed to ensure continued operation of WECC Path 52 and radial service to certain local customers. Decommissioning a portion of the ‘C’ circuit would result in eliminating one of the two 55 kV Control-Silver Peak subtransmission lines, thereby eliminating a second redundant source for loads served by SCE out of the Deep Springs, White Mountain, and Zack substations. However, rebuilding the line with an appropriately-sized conductor would ensure that the bi-directional capacity of Path 52 is not adversely impacted under normal operating conditions, and installing remote disconnect switches on each side of the tap connection points would afford a means to reestablish temporary service in a radial fashion from either the Control or Silver Peak substations.

Consequently, decommissioning and removing SCE’s portion of the joint-owned Control-Silver Peak ‘C’ 55 kV subtransmission line while implementing upgrades on the CSP ‘A’ circuit is feasible.

4.1.4 Project Phasing Options

No project phasing options were considered. Because the primary purpose of the CSP 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 complete achievement of that purpose without any apparent environmental benefit. In addition, no significant environmental impacts were identified that could be ameliorated through the temporal phasing of the CSP Project.

4.1.5 Alternative Facility and Construction Activity Sites

Because the subtransmission lines included under the CSP Project are extant and currently used to provide service to existing load and generation customers, and must continue to provide service to those existing load and generation customers, no alternative facility sites are feasible.

4.1.5.1 Substation Site Alternatives

Subtransmission line clearance remediation cannot be accomplished with 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 extant subtransmission infrastructure. SCE evaluated numerous sites for staging areas, construction laydown areas, and helicopter landing zones (the locations of which are, to an extent discretionary); the location of such areas and zones that are feasible given the topography of the CSP Project alignment are included under the CSP Project.

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

Energy conservation, energy efficiency, and demand response measures would not remediate the identified physical discrepancies. SCE did not identify any renewable energy or distributed energy resource alternatives as the CSP Project does not include the generation of electricity. SCE developed and evaluated an Energy Storage Alternative. This Alternative was deemed not feasible because even if a large energy storage facility could theoretically reduce or eliminate all load on the Control-Silver Peak ‘A’ and ‘C’ 55 kV subtransmission lines, approximately half of the identified discrepancies on these lines still would not be remediated.

The goal of the Energy Storage Alternative is to reduce the loading of the joint-owned Control-Silver Peak ‘A’ and ‘C’ 55 kV subtransmission lines, and that the reduced loading would reduce conductor sag and thereby negate existing discrepancies along these lines. An Energy Storage facility, approximately 0.25 acres to 1 acre in area, is estimated to be needed for such an alternative. The size of each energy storage device is estimated range from 25 square feet and 6 feet high to 500 square feet and approximately 12 feet high; numerous energy storage devices would be installed at the Energy Storage facility. Such a facility could be located at or adjacent to any of the substations, could store energy during portions of the day and release the energy during other time periods as appropriate. Given that the two joint-owned Control-Silver Peak ‘A’ and ‘C’ 55 kV subtransmission lines serve as both import and export lines, actual flow on these lines is predicated on a number of factors that involve both internal and external SCE system factors. These factors include the amount of generation dispatched by the CAISO internal to SCE’s Control 115 kV subtransmission portion of the system, which is located in Inyo and Mono counties, the amount of generation dispatch by the LADWP in the Owens area, and the amount of load internal to SCE’s Control 115 kV subtransmission portion of the system. These three factors determine the amount of generation resource that requires export out of SCE’s Control 115 kV subtransmission portion of the system utilizing the existing Control-Haiwee-Inyokern and Control-Coso-Haiwee-Inyokern 115 kV subtransmission lines, the Inyo phase-shifted system intertie with LADWP, and the Silver Peak phase-shifted system tie which connects the joint-owned Control-Silver Peak ‘A’ and ‘C’ 55 kV subtransmission lines.

During times of high generation export out of the Control 115 kV subtransmission portion of SCE’s system, flows on the joint-owned Control-Silver Peak ‘A’ and ‘C’ 55 kV subtransmission lines are expected from the Control Substation to the Silver Peak Substation and during times of low export, flows on the joint-owned Control-Silver Peak ‘A’ and ‘C’ 55 kV subtransmission lines would be expected from the Silver Peak Substation to the Control Substation. It is important to note that the Control 115 kV subtransmission portion of SCE’s system typically transfers significantly more hydro and geothermal generation output (considered baseload resources that operate during all periods of the day), than the total load served by the Control 115 kV subtransmission system. Therefore, the Control 115 kV subtransmission system is anticipated to export power more frequently than it imports power. In addition to the Control 115 kV subtransmission system generation export requirements, load connected to substations served directly by the joint-owned Control-Silver Peak ‘A’ and ‘C’ 55 kV subtransmission lines at Deep Springs, White Mountain, and Zack substations and the Fish Lake Valley Metering Station is also a factor in determining line flow. In addition, the existence of the phase-shifted system tie at Silver Peak is another factor that dictates actual flow direction depending on how much export from SCE to NV Energy is desired by NV Energy or vice-versa, with actual flow limited to not exceed the established WECC Path Rating of 17 MW.

All of the factors noted above play a role in how much actual power flow is expected on facilities that connect the Control 115 kV subtransmission portion of SCE’s system to the rest of the electric network. All of these factors would make it extremely difficult to utilize energy storage as a means of lowering line flows, as line flows may be lowered for the portion of time that the energy storage facility is charging but would likely increase during the portion of time that the energy storage is discharging. This is because the resources in question are considered base load resources. Furthermore, the lines in question constitute a defined WECC Path with a defined path rating of 17 MW which means that the lines must be able to accommodate the established bidirectional 17 MW WECC Path limit. Consequently, the operational complexities associated with Energy Storage in this portion of SCE’s electric system, notwithstanding the need to maintain the bidirectional 17 MW path rating, render the Energy Storage alternative infeasible. However, even if these complexities were to be overcome, even an energy storage alternative that would reduce line loading to 0 Amps would only remediate approximately 33 percent of the total discrepancies identified along the Control-Silver Peak ‘A’ and ‘C’ 55 kV Subtransmission Lines. These lines would require further remediation of the remaining 67 percent of discrepancies identified, almost certainly involving physical work and new and/or modified infrastructure. Consequently, this alternative was dismissed as infeasible.

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

The Alternatives described in Section 4.1.3.1, Decommission and Remove Both 'A' and 'C' Circuits Alternative; Section 4.1.3.2 Decommission and Remove Either 'A' or 'C' Circuit Alternative; Section 4.1.3.3, Decommission and Remove with Upgrades Alternatives; Section 4.1.6, Energy Storage Alternative; Section 4.1.10.2, Operating Voltage Decrease Alternative; and Section 4.1.10.3, Ampacity Derate Alternative would each avoid or limit the construction of new transmission-voltage facilities. However, for the reasons discussed above, such alternatives are infeasible.

4.1.8 Other Technological Alternatives

SCE developed and evaluated a Reconductor Alternative. This Alternative was deemed infeasible as discussed below.

The goal of a reconductor alternative is to install new conductor utilizing existing pole and tower structures in a manner that eliminates the existing line clearance issues. SCE considered reconductoring the existing subtransmission lines with both standard conductor as well as with high-temperature low-sag conductor.

With the use of standard conductor, line clearance theoretically can be improved, and discrepancies can be remediated, by increasing the tension under which the conductor is installed. For the CSP Project, however, higher tensions cannot be supported by the existing subtransmission structures, and thus reconductoring with a standard conductor is infeasible.

The use of high temperature low-sag conductor provides improved line clearance in a given span under high amperage loads due to the materials used in this conductor. However, clearances are not generally expected to be improved under low amperage loads. Because the 'A' and 'C' circuits are already operated at low amperages, the use of high-temperature low-sag conductor would leave a substantial number of discrepancies un-remediated, and thus reconductoring with a high-temperature low-sag conductor is infeasible. In sum, the Reconductor Alternative is infeasible.

4.1.9 Route Alternatives and Route Variations

4.1.9.1 Highway 6 Alternative

The Highway 6 Alternative was developed to maintain SCE's electrical service to the Fish Lake Valley Metering Station while facilitating the remediation of discrepancies. The Highway 6 Alternative, shown in Figure 4.1-2, includes the following components:

- Segment 1. Same scope as contained in the CSP Project.
- Segment 2. Same scope as contained in the CSP Project.
- Segment 3. Same scope as contained in the CSP Project from the western terminus of Segment 3 to the point where Segment 4 intersects Segment 3. From this point east, remove all existing poles and conductor.
- Segment 4. Same scope as contained in the CSP Project.
- Segment 5. Remove subtransmission conductor along entirety of Segment. Remove poles along northern approximately 1.2 miles of the Segment.

- Segment 6. Construct new single-circuit 55 kV line from the existing SCE Zack Substation to the California/Nevada border. New line would be constructed along a portion of an existing distribution ROW, within new ROW, and within Caltrans ROW; the new line would be routed north and east along U.S. 6 from the Zack Substation; the new line would be approximately 21 miles in length.
- Segment 7. Construct new single-circuit 55 kV line from U.S. 6 at the California/Nevada border to the existing VEA Fish Lake Valley North Substation. New line would be constructed in new ROW over BLM and USFS properties; the new line would be routed east along U.S. 6 and then following NV-264 south to the Fish Lake Valley North Substation; the new line would be approximately 31 miles in length.
- Control Substation. Same scope as contained in the CSP Project.
- Deep Springs Substation
    - Install distributed energy resource to support load; generation resource could include renewable energy and/or fossil fuel-fired generation and battery storage.
    - Remove existing 55 kV equipment.
- Fish Lake Valley Metering Station
    - Reconfigure station so that it is fed solely from the NV Energy Silver Peak Substation.
- White Mountain Substation
    - Install distributed energy resource to support load; generation resource could include renewable energy and/or fossil fuel-fired generation and battery storage.
    - Remove existing 55 kV equipment.
- Zack Substation
    - Equip existing switchrack.
    - Install new 55 kV transformer bank.
    - Install new protection equipment in existing MEER.
- Metering Station
    - Install new metering station at either the California/Nevada border (where Segments 6 and 7 meet), the Zack Substation, or near the Fish Lake Valley North Substation.
- There may be upgrades identified and implemented by VEA.

The Highway 6 Alternative is feasible and is included herein for analysis. However, initial analysis shows that this alternative appears to have greater environmental impact from a land disturbance and air quality perspective.

4.1.10 Alternative Engineering or Technological Approaches

4.1.10.1 Rebuild Existing Single-Circuit Pole Lines Alternative

SCE also developed and evaluated a Single-Circuit Alternative. This Alternative was deemed feasible as discussed below and is carried through for analysis in this Chapter.

An alternative to upgrading SCE's portion of either the existing joint-owned Control-Silver Peak 'A' or 'C' 55 kV subtransmission lines as a double-circuit and removing one of the existing pole lines (the CSP Project) includes rebuilding both of the 55 kV subtransmission lines in a single circuit design. Under this alternative, the two existing 55 kV single-circuit pole lines would be removed and replaced with two new single-circuit pole lines, to include poles and towers. Remote control disconnect switches would be installed on each side of the tap connections to ensure service restoration can be implemented in a timely manner should the loss of a line segment occur.

4.1.10.2 Operating Voltage Decrease Alternative

SCE analyzed the potential for reducing the operating voltage on portions of the existing 55 kV subtransmission lines included under the CSP Project as means of addressing clearance issues. Under this alternative, new substations supporting 55/12 kV transformation would be required to enable lowering the operational voltage on portions of the existing 55 kV infrastructure. This Alternative was deemed infeasible as discussed below.

Review of GO 95 clearance requirements resulted in a determination that the clearance requirements for facilities rated at 12 kV are only 5 feet lower than the clearance requirements for facilities rated at 55 kV. Many of the clearance infractions on the 55 kV lines are greater than 5 feet. Moreover, these infractions are not contiguous in nature and occur on several sections of the line across the entire extent from Control Substation to the state border. Therefore, any alternative that involves lowering the operating voltage from 55 kV to 12 kV would not be a viable alternative as there is little to no benefit gained in terms of actual clearance requirements under GO 95. Such an alternative would most probably require the rebuild of the line regardless of the operating voltage in any event. In fact, the actual number of clearance violations may increase with a voltage decrease as higher amperage flow values are experienced at lower voltages for the same level of power. Because GO 95 clearance requirements for 12 kV are only 5 feet lower than those for 55 kV rated facilities, a higher amperage loading resulting from lowering voltages to 12 kV could result in further conductor sag below the limits set forth in GO 95, as compared to maintaining operational voltages at 55 kV. In addition to minimal to no benefit in terms of clearance distance from lowering the operating voltage, the linear distance of the lines is such that operating these lines at lower voltages would be infeasible for supplying service at reasonable quality: the 12 kV operating voltage along the power line would not be maintained over long distances. As such, service to customers along the line would be drastically degraded. Because the Operating Voltage Decrease Alternative would do little to remediate clearance discrepancies and would likely impact quality of service, this Alternative is deemed infeasible.

4.1.10.3 Ampacity Derate Alternative

SCE analyzed the potential to derate the subtransmission lines as a means of addressing the identified line clearance issues on both the joint-owned Control-Silver Peak ‘A’ and ‘C’ 55 kV subtransmission lines.

Maximum power flow from Control Substation to Silver Peak Substation is experienced under maximum load at Deep Springs Substation, Fish Lake Valley Metering Station, White Mountain Substation, and Zack Substation with maximum phase-shifted export from SCE to NV Energy. Under this condition, the maximum loading on the joint-owned Control-Silver Peak ‘A’ 55 kV Subtransmission Line and joint-owned Control-Silver Peak ‘C’ 55 kV Subtransmission Line with all facilities in-service and under outage conditions is provided in Table 4.2-1 and Table 4.2-2, respectively.

Table 4.2-1: Control-Silver Peak ‘A’ 55 kV Amperage Loading under Maximum Load / Maximum Export to NV Energy

Subtransmission Line	Control—Zack Tap	Zack Tap—White Mtn Tap	White Mtn Tap—Deep Springs Tap	Deep Springs Tap—Fish Lake Valley Tap	Fish Lake Tap—Silver Peak
All Facilities In-Service	112	110	106	106	88
Loss of Control-Silver Peak ‘A’ 55 kV	0	0	0	0	0
Loss of Control-Silver Peak ‘A’ 55 kV at Control Only	0	0	3	7	23
Loss of Control-Silver Peak ‘A’ 55 kV at Silver Peak Only	25	25	23	18	0
Loss of Control-Silver Peak ‘C’ 55 kV	207	149	148	143	127
Loss of Control-Silver Peak ‘C’ 55 kV at Control Only	180	180	178	173	156
Loss of Control-Silver Peak ‘C’ 55 kV at Silver Peak Only	152	152	150	145	129
Maximum Amp Loading	207	180	178	173	156

Table 4.2-2: Control-Silver Peak ‘C’ 55 kV Amperage Loading under Maximum Load / Maximum Export to NV Energy

Subtransmission Line	Control—Zack Tap	Zack Tap—White Mtn Tap	White Mtn Tap—Deep Springs Tap	Deep Springs Tap—Fish Lake Valley Tap	Fish Lake Tap—Silver Peak
All Facilities In-Service	155	95	95	95	95
Loss of Control-Silver Peak ‘A’ 55 kV	189	133	131	125	122
Loss of Control-Silver Peak ‘A’ 55 kV at Control Only	207	145	145	145	145
Loss of Control-Silver Peak ‘A’ 55 kV at Silver Peak Only	195	133	133	133	133
Loss of Control-Silver Peak ‘C’ 55 kV	0	0	0	0	0
Loss of Control-Silver Peak ‘C’ 55 kV at Control Only	0	71	71	71	71
Loss of Control-Silver Peak ‘C’ 55 kV at Silver Peak Only	62	0	0	0	0
Maximum Amp Loading	207	145	145	145	145

SCE performed an evaluation to determine the feasibility of remediating discrepancies along the circuits by derating the operation of these circuits to the maximum amperage values shown in Tables 4.2-1 and 4.2-2. That evaluation determined that derating the ‘A’ and ‘C’ circuits to 130° F would only remediate approximately 20 percent of the discrepancies identified on these circuits and would require further remediation of the remaining 80 percent of discrepancies along these circuits. Consequently, this alternative was dismissed.

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 CSP Project with the impacts of not approving the CSP 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 any of the CSP Project's objectives because it would not remediate any identified GO 95 clearance discrepancies. 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 CSP 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 does not, at this time, have a plan of action to address the identified discrepancies if the CSP Project is not approved.

4.3 Rejected Alternatives

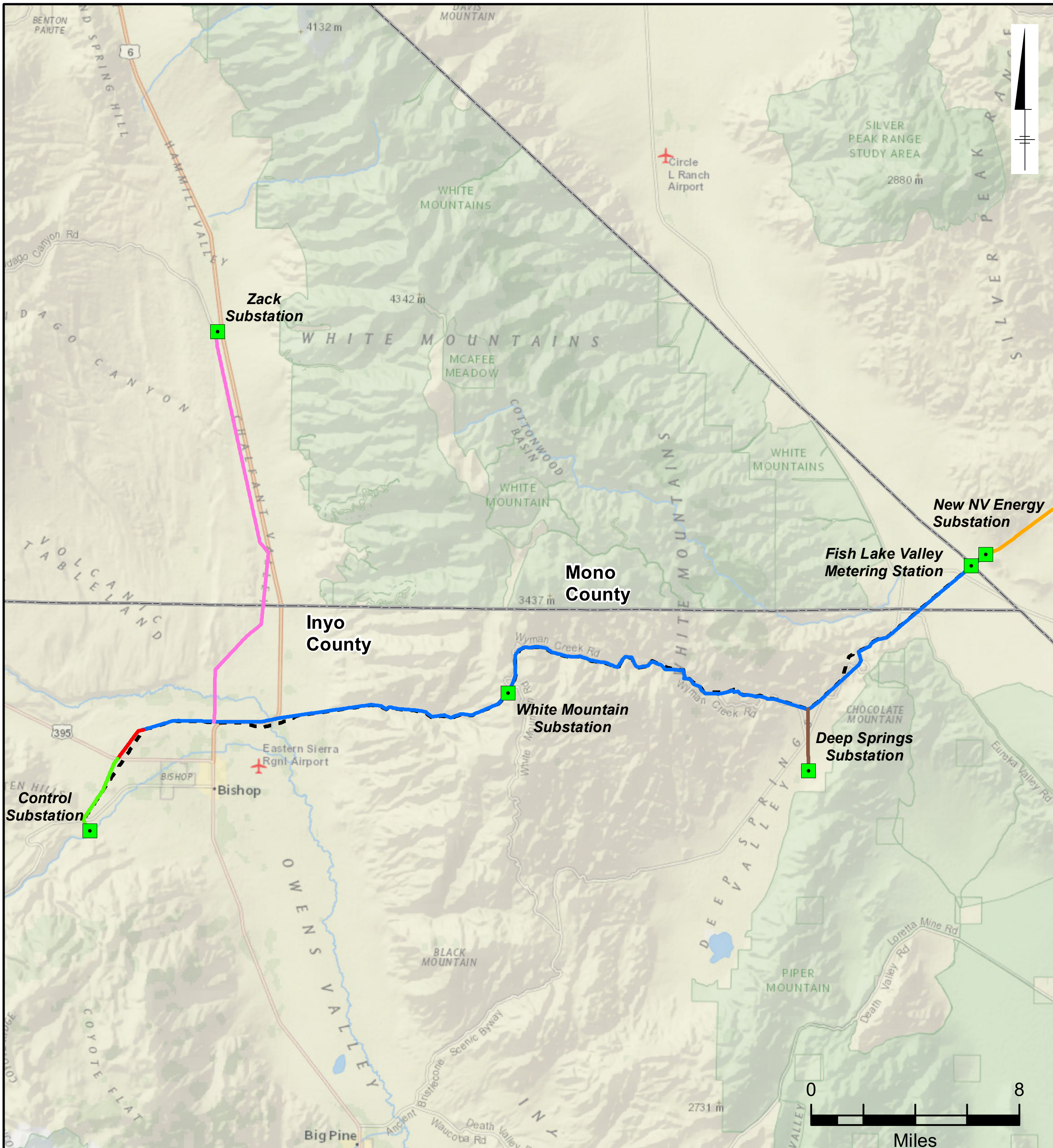
None of the Alternatives addressed in Section 4.1 with the exception of the Highway 6 Route Alternative and the Rebuild Existing Single-Circuit Pole Lines Alternative were selected by SCE for analysis in Chapter 6.

The subsection in Section 4.1 for each rejected Alternative presents: a description of the alternative and its components; a discussion about the extent to which the alternative would meet the underlying purpose of the project and its basic objectives; a discussion about the feasibility of implementing the alternative; and a description of why the alternative was rejected.

None of the rejected Alternatives would reduce or avoid any significant environmental impacts of the CSP Project, as no significant environmental impacts have been identified for the CSP Project. Because the non-selected Alternatives are not feasible, SCE has not performed any analysis to determine if any significant impacts could result from implementation of any of the rejected Alternatives.

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

Figure 4.1-1 displays graphically the Decommission and Removal with Upgrades Alternatives.



Legend

Substation	Substation
Segment 1	Segment 1
Segment 2	Segment 2
Segment 3	Segment 3
Segment 4	Segment 4 (Zack Tap)
Segment 5	Segment 5 (Deep Springs Tap)
Removal	Removal--'C' Circuit
NV Energy	NV Energy-owned Subtransmission Line
Counties	Counties

CONTROL-SILVER PEAK PROJECT

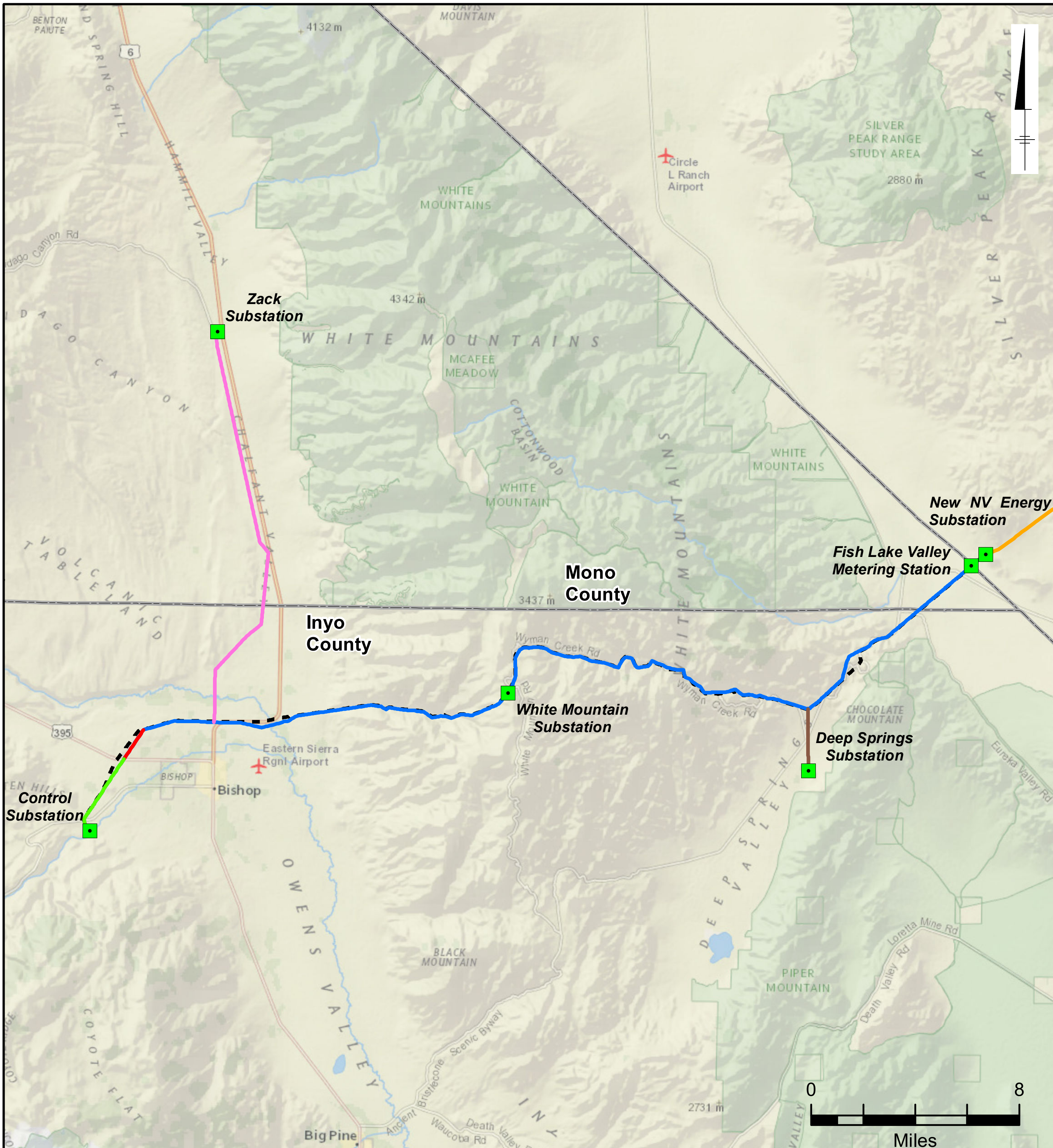
DECOMMISSION AND REMOVE SCE'S 'C' CIRCUIT AND MAKE UPGRADES

ARCADIS

SOUTHERN CALIFORNIA EDISON An EDISON INTERNATIONAL® Company

FIGURE **4.1-1a**

City: Div/Group: Created By: Last Saved By: ADavis
Project (Project #)
T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\CSP\Figure4-1-1_Decommission.mxd 5/27/2021 5:18:28 PM



Legend

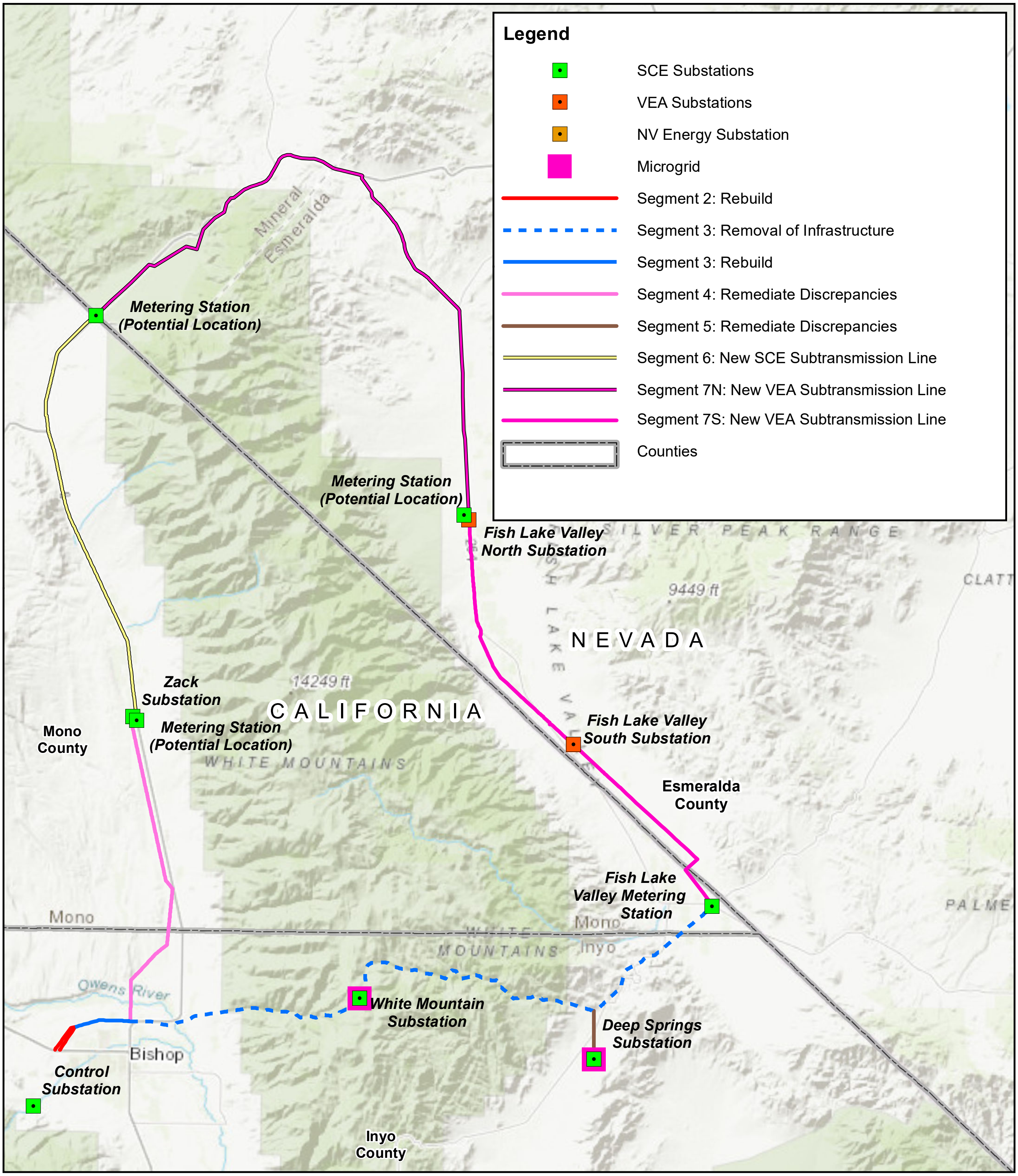
- Substation
- Segment 1
- Segment 2
- Segment 3
- Segment 4 (Zack Tap)
- Segment 5 (Deep Springs Tap)
- Removal--'A' Circuit
- NV Energy-owned Subtransmission Line
- Counties

CONTROL-SILVER PEAK PROJECT

DECOMMISSION AND REMOVE SCE'S 'A' CIRCUIT AND MAKE UPGRADES

ARCADIS
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE
4.1-1b



N

0 7.5 15

Miles

CONTROL-SILVER PEAK PROJECT

HIGHWAY 6 ALTERNATIVE

ARCADIS

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

FIGURE
4.1-2

City: Div/Group: Created By: Last Saved By: mgi01044
Project (Project #)
T:_ENV\SCE\SCE_TLLR\ArcGIS_Desktop\PEA_Figures\CSP\Figure4-1-2_AlternativeX.mxd 05/21/2021 9:51:48 AM