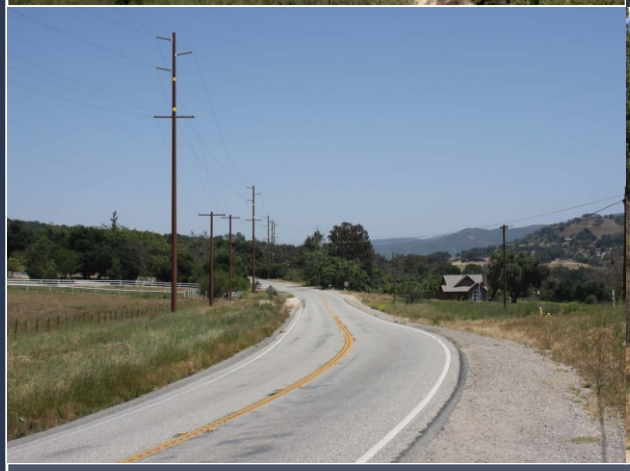
DRAFT

Environmental Impact Report/Environmental Impact Statement

Master Special Use Permit and Permit to Construct Power Line Replacement Projects






AUGUST 2014

LEAD AGENCIES:

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
State Clearinghouse No. 2013091070

United States Department of Agriculture
Forest Service, Cleveland National Forest
10845 Rancho Bernardo Road
San Diego, CA 92127
Forest Service Publication No. R5-MB-277

PREPARED BY:

DUDEK
605 Third Street
Encinitas, CA 92024

The photo collage on the front cover contains photographs by Dudek (upper left and lower right) that depict the existing view, as well as visual simulations by SDG&E (upper right and lower left). Photos by Dudek include west view from Inaja Scenic Outlook toward TL626 (upper left) and Laguna Mountain Recreation Area visitor center (C440; lower right). SDG&E visual simulations are from Boulder Oaks campground (TL629; upper right) and of TL682 along State Route 76 (lower left).

DRAFT EIR/EIS FOR THE MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWERLINE REPLACEMENT PROJECTS

Lead Agencies:

California Public Utilities Commission

and

United States Department of Agriculture
Forest Service, Cleveland National Forest

Prepared by:

DUDEK

AUGUST 2014

Printed on 30% post-consumer recycled material.

Master Special Use Permit and Permit to Construct
Powerline Replacement Projects
Joint Draft Environmental Impact Report/
Draft Environmental Impact Statement (DEIR/DEIS)
Orange and San Diego Counties, California

Lead Agencies:	**USDA Forest Service** **California Public Utilities Commission**
Responsible/Cooperating Agencies:	**California State Department of Parks and Recreation** **Bureau of Land Management, Bureau of Indian Affairs**
Responsible Officials:	**William Metz, Forest Supervisor, Cleveland National Forest** **Lisa Orsaba, California Public Utilities Commission**
For Information Contact:	**Dudek (Rica Nitka) by email at cnfmsup@dudek.com**

Abstract: San Diego Gas & Electric (SDG&E) is proposing to combine over 70 individual use permits and easements for SDG&E electric facilities within the Cleveland National Forest (CNF) into one Master Special Use Permit (MSUP) to be issued by the Forest Service. In addition, SDG&E is proposing to replace certain electric power lines located within and outside the CNF. Replacement would primarily include fire hardening (wood-to-steel pole replacement), relocation, and undergrounding. The proposed power line replacement projects will require authorization under the MSUP, as well as approval from the California Public Utilities Commission (CPUC). The Joint DEIR/DEIS describes SDG&E's proposed project, evaluates and describes the potential environmental impacts associated with the construction and operation of the MSUP and power line replacement projects, identifies those impacts that could be significant, and presents mitigation measures, which, if adopted, could avoid or minimize these impacts. The Joint DEIR/DEIS also evaluates 11 alternatives to SDG&E's proposed project, including the federal proposed action, and the No Action Alternative and No Project Alternative, as required by the California Environmental Quality Act and the National Environmental Policy Act. The federal preferred alternative is identified as a composite of the federal proposed action, the TL626 Removal from Service alternative, and the Partial Removal of Overland Access Roads alternative. It is important that reviewers provide their comments at such times and in such a way that they are useful to the Agency's preparation of the DEIR/DEIS. Therefore, comments should be provided prior to the close of the comment period and should clearly articulate the reviewer's concerns and contentions. The submission of timely and specific comments can affect a reviewer's ability to participate in subsequent administrative review or judicial review. Comments received in response to this solicitation, including names and addresses of those who comment, will be part of the public record for this proposed action. Comments submitted anonymously will be accepted and considered; however, anonymous comments will not provide the respondent with standing to participate in subsequent administrative review or judicial review.

Send Comments to:	**US Mail:** Lisa Orsaba, California Public Utilities Commission/ Will Metz, United States Forest Supervisor, Cleveland National Forest, c/o Dudek, 605 Third Street, Encinitas, California 92024 **Email:** cnfmsup@dudek.com, subject line "SDG&E Master Permit – DEIR/DEIS Comments"
Date Comments Must Be Received:	**November 4, 2014**

INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

Section **Page No.**

ES EXECUTIVE SUMMARY ES-1
ES.1 Introduction ES-1
ES.2 Project Overview ES-2
ES.3 Areas of Controversy/Public Scoping Issues ES-4
ES.4 Project Alternatives ES-5
ES.5 Summary of Environmental Analysis ES-10
ES.6 Environmentally Superior Alternative Under CEQA ES-17
ES.7 Federal Preferred Alternative ES-18

A. INTRODUCTION/OVERVIEW A-1
A.1 Introduction A-1
A.2 Background A-5
A.3 Project Overview A-5
A.4 Purpose and Need A-7
A.5 Project Objectives A-8
A.6 Agency Use of this Document and Permits Required A-8
A.7 Reader's Guide to EIR/EIS A-13
A.8 References A-15

B. PROJECT DESCRIPTION B-1
B.1 Introduction and Overview B-1
B.2 Project Location B-2
B.3 Project Components B-2
B.4 Permanent Land Requirements B-34
B.5 Project Construction B-36
B.6 Operations and Maintenance B-57
B.7 SDG&E Applicant Proposed Measures and Protocols B-62
B.8 References B-69

C. ALTERNATIVES DEVELOPMENT AND SCREENING C-1
C.1 Required Alternatives C-1
C.2 Development of Additional Alternatives C-3
C.3 Screening Methodology C-4
C.4 Additional Alternatives Evaluated C-5
C.5 Alternatives Eliminated From Further Consideration C-8
C.6 References C-19

D. ENVIRONMENTAL ANALYSIS D.1-1
D.1 Introduction to Environmental Analysis D.1-1
D.1.1 Introduction/Background D.1-1
D.1.2 Environmental Analysis CEQA/NEPA Methodology D.1-2
D.1.3 References D.1-5
D.2 Visual Resources D.2-1
D.2.1 Environmental Setting/Affected Environment D.2-1
D.2.2 Applicable Regulations, Plans, and Standards D.2-53
D.2.3 Environmental Effects D.2-64
D.2.4 Forest Service Proposed Actions D.2-95
D.2.5 BIA Proposed Action D.2-105
D.2.6 Additional Alternatives D.2-107
D.2.7 No Action Alternative D.2-113
D.2.8 No Project Alternative D.2-113
D.2.9 Mitigation Monitoring, Compliance, and Reporting D.2-114
D.2.10 Residual Unavoidable Effects D.2-115
D.2.11 References D.2-116
D.3 Air Quality D.3-1
D.3.1 Environmental Setting/Affected Environment D.3-1
D.3.2 Applicable Regulations, Plans, and Standards D.3-10
D.3.3 Environmental Effects D.3-14
D.3.4 Forest Service Proposed Actions D.3-23
D.3.5 BIA Proposed Action D.3-28
D.3.6 Additional Alternatives D.3-29
D.3.7 No Action Alternative D.3-30
D.3.8 No Project Alternative D.3-31
D.3.9 Mitigation Monitoring, Compliance, and Reporting D.3-31
D.3.10 Residual Unavoidable Effects D.3-32
D.3.11 References D.3-32
D.4 Biological Resources D.4-1
D.4.1 Environmental Setting/Affected Environment D.4-1
D.4.2 Applicable Regulations, Plans, and Standards D.4-79
D.4.3 Environmental Effects D.4-89
D.4.4 Forest Service Proposed Actions D.4-194
D.4.5 BIA Proposed Action D.4-206
D.4.6 Additional Alternatives D.4-208
D.4.7 No Action Alternative D.4-212
D.4.8 No Project Alternative D.4-212

D.4.9 Mitigation Monitoring, Compliance, and Reporting D.4-213
D.4.10 Residual Unavoidable Effects D.4-238
D.4.11 References D.4-238
D.5 Cultural and Paleontological Resources D.5-1
D.5.1 Environmental Setting/Affected Environment D.5-1
D.5.2 Applicable Regulations, Plans, and Standards D.5-23
D.5.3 Environmental Effects D.5-40
D.5.4 Forest Service Proposed Actions D.5-54
D.5.5 BIA Proposed Action D.5-58
D.5.6 Additional Alternatives D.5-59
D.5.7 No Action Alternative D.5-61
D.5.8 No Project Alternative D.5-61
D.5.9 Mitigation Monitoring, Compliance, and Reporting D.5-62
D.5.10 Residual Unavoidable Effects D.5-64
D.5.11 References D.5-64
D.6 Greenhouse Gases D.6-1
D.6.1 Environmental Setting/Affected Environment D.6-1
D.6.2 Applicable Regulations, Plans, and Standards D.6-4
D.6.3 Environmental Effects D.6-12
D.6.4 Forest Service Proposed Actions D.6-16
D.6.5 BIA Proposed Action D.6-18
D.6.6 Additional Alternatives D.6-19
D.6.7 No Action Alternative D.6-20
D.6.8 No Project Alternative D.6-20
D.6.9 Mitigation Monitoring, Compliance, and Reporting D.6-21
D.6.10 Residual Unavoidable Effects D.6-21
D.6.11 References D.6-21
D.7 Public Health and Safety D.7-1
D.7.1 Environmental Setting/Affected Environment D.7-1
D.7.2 Applicable Regulations, Plans, and Standards D.7-5
D.7.3 Environmental Effects D.7-13
D.7.4 Forest Service Proposed Actions D.7-23
D.7.5 BIA Proposed Action D.7-28
D.7.6 Additional Alternatives D.7-28
D.7.7 No Action Alternative D.7-31
D.7.8 No Project Alternative D.7-31
D.7.9 Mitigation Monitoring, Compliance, and Reporting D.7-32
D.7.10 Residual Unavoidable Effects D.7-36

D.7.11 References D.7-36
D.8 Fire and Fuels Management D.8-1
D.8.1 Environmental Setting/Affected Environment D.8-1
D.8.2 Applicable Regulations, Plans, and Standards D.8-19
D.8.3 Environmental Effects D.8-35
D.8.4 Forest Service Proposed Actions D.8-50
D.8.5 BIA Proposed Action D.8-57
D.8.6 Additional Alternatives D.8-57
D.8.7 No Action Alternative D.8-60
D.8.8 No Project Alternative D.8-61
D.8.9 Mitigation Monitoring, Compliance, and Reporting D.8-61
D.8.10 Residual Unavoidable Effects D.8-65
D.8.11 References D.8-65
D.9 Hydrology and Water Quality D.9-1
D.9.1 Environmental Setting/Affected Environment D.9-1
D.9.2 Applicable Regulations, Plans, and Standards D.9-17
D.9.3 Environmental Effects D.9-26
D.9.4 Forest Service Proposed Actions D.9-47
D.9.5 BIA Proposed Action D.9-57
D.9.6 Additional Alternatives D.9-57
D.9.7 No Action Alternative D.9-62
D.9.8 No Project Alternative D.9-62
D.9.9 Mitigation Monitoring, Compliance, and Reporting D.9-63
D.9.10 Residual Unavoidable Effects D.9-70
D.9.11 References D.9-70
D.10 Land Use and Planning D.10-1
D.10.1 Environmental Setting/Affected Environment D.10-1
D.10.2 Applicable Regulations, Plans, and Standards D.10-25
D.10.3 Environmental Effects D.10-46
D.10.4 Forest Service Proposed Actions D.10-57
D.10.5 BIA Proposed Action D.10-66
D.10.6 Additional Alternatives D.10-67
D.10.7 No Action Alternative D.10-70
D.10.8 No Project Alternative D.10-71
D.10.9 Mitigation Monitoring, Compliance, and Reporting Program D.10-71
D.10.10 Residual Unavoidable Effects D.10-74
D.10.11 References D.10-74

D.11 Noise D.11-1
D.11.1 Environmental Setting/Affected Environment D.11-1
D.11.2 Applicable Regulations, Plans, and Standards D.11-9
D.11.3 Environmental Effects D.11-13
D.11.4 Forest Service Proposed Actions D.11-22
D.11.5 BIA Proposed Action D.11-26
D.11.6 Additional Alternatives D.11-27
D.11.7 No Action Alternative D.11-30
D.11.8 No Project Alternative D.11-30
D.11.9 Mitigation Monitoring, Compliance, and Reporting D.11-30
D.11.10 Residual Unavoidable Effects D.11-33
D.11.11 References D.11-33
D.12 Public Services and Utilities D.12-1
D.12.1 Environmental Setting/Affected Environment D.12-1
D.12.2 Applicable Regulations, Plans, and Standards D.12-6
D.12.3 Environmental Effects D.12-8
D.12.4 Forest Service Proposed Actions D.12-12
D.12.5 BIA Proposed Action D.12-16
D.12.6 Additional Alternatives D.12-17
D.12.7 No Action Alternative D.12-19
D.12.8 No Project Alternative D.12-19
D.12.9 Mitigation Monitoring, Compliance, and Reporting D.12-20
D.12.10 Residual Unavoidable Effects D.12-20
D.12.11 References D.12-21
D.13 Recreation D.13-1
D.13.1 Environmental Setting/Affected Environment D.13-1
D.13.2 Applicable Regulations, Plans, and Standards D.13-27
D.13.3 Environmental Effects D.13-34
D.13.4 Forest Service Proposed Actions D.13-46
D.13.5 BIA Proposed Action D.13-50
D.13.6 Additional Alternatives D.13-51
D.13.7 No Action Alternative D.13-53
D.13.8 No Project Alternative D.13-54
D.13.9 Mitigation Monitoring, Compliance, and Reporting D.13-54
D.13.10 Residual Unavoidable Effects D.13-55
D.13.11 References D.13-55
D.14 Transportation and Traffic D.14-1
D.14.1 Environmental Setting/Affected Environment D.14-1

D.14.2 Applicable Regulations, Plans, and Standards D.14-11
D.14.3 Environmental Effects D.14-15
D.14.4 Forest Service Proposed Actions D.14-29
D.14.5 BIA Proposed Action D.14-32
D.14.6 Additional Alternatives D.14-33
D.14.7 No Action Alternative D.14-36
D.14.8 No Project Alternative D.14-36
D.14.9 Mitigation Monitoring, Compliance, and Reporting D.14-36
D.14.10 Residual Unavoidable Effects D.14-37
D.14.11 References D.14-37
D.15 Electromagnetic Fields D.15-1
D.15.1 Defining EMF D.15-1
D.15.2 EMF Sources in the Proposed Project Area D.15-2
D.15.3 Scientific Background and Regulations Applicable to EMF D.15-3
D.15.4 Consideration of Electric and Magnetic Fields—Proposed Action D.15-8
D.15.5 Summary Regarding EMF D.15-9
D.15.6 References D.15-10

E. COMPARISON OF ALTERNATIVES E-1
E.1 Regulatory Requirements for Alternatives Comparison E-1
E.2 CEQA Comparison of the Proposed Project with the Federal Proposed Action and the No Action Alternative E-3
E.3 Comparison of SDG&E's Proposed Project with Additional Alternatives E-25
E.4 CEQA Environmentally Superior Alternative E-35
E.5 Comparison of the Alternatives under NEPA E-39
E.6 Federal Preferred Alternative E-94
E.7 Environmentally Preferable Alternative E-95

F. CUMULATIVE SCENARIO AND IMPACTS F-1
F.1 Introduction and Methodology F-1
F.2 Applicable Cumulative Projects and Projections F-1
F.3 Cumulative Impact Analysis F-11
F.4 References F-48

G. REQUIRED CEQA/NEPATOPICS G-1
G.1 Growth-Inducing Effects G-1
G.2 Irreversible and Irretrievable Commitment of Resources and Environmental Changes G-4
G.3 Adverse Environmental Effects That Cannot be Avoided G-8
G.4 Short-Term Use Versus Long-Term Productivity of the Environment G-8

G.5 Effects Not Found To Be Significant G-8
G.6 Compliance with Applicable Federal Environmental Regulations and Policies ... G-11
G.7 References G-14

H. MITIGATION MONITORING, COMPLIANCE, AND REPORTING PROGRAM H-1
H.1 Regulatory Background H-1
H.2 Roles and Responsibilities H-3
H.3 Communication H-5
H.4 Minor Project Refinements H-6
H.5 Mitigation Monitoring Program Table H-8
H.6 References H-9

I. PUBLIC PARTICIPATION I-1
I.1 Public Scoping Process – Draft EIR/EIS I-1
I.2 References I-9

J. DISTRIBUTION OF DEIR/DEIS J-1
J.1 Opportunity to Comment J-1
J.2 Public Meetings J-2
J.3 Forest Service Objection Process J-2

K. REPORT PREPARATION K-1
K.1 List of Preparers K-1

L INDEX L-1

APPENDICES

BIO-1 Supplementary Special-Status Plants
BIO-2 Special-Status Plant Species Potential to Occur in Project Study Area
BIO-3 Supplementary Special-Status Wildlife
BIO-4 Special-Status Wildlife Species Potential to Occur in Project Study Area
BIO-5 LMP Consistency Evaluation
BIO-6 Special-Status Plant and Wildlife Species Documented Status along Lines not part of the Power Line Replacement Project to be covered under the MSUP
BIO-7 Biological Evaluation/Biological Assessment Example
CUL-1 Power Line Replacement Projects Archaeological Resources (Confidential)
J-1 Distribution List
LU-1A Regional Policies, Plans, and Regulations
LU-1B Land Use Consistency Tables

TABLES

ES-1 Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives ES-19
A-1 EIR/EIS Issues to be Addressed A-3
A-2 Proposed Power Line Replacement Projects Agency Jurisdiction A-10
A-3 Federal Agency Statutory Consultation Requirements A-11
A-4 Permits or Other Actions Required Prior to Construction A-12
B-1 SDG&E Electric Facilities to be included in the MSUP as part of the Proposed Project B-2
B-2 Summary of Applicant's Proposed Power Line Replacement Projects B-5
B-3 TL626 Options 1 and 2: Temporary and Permanent Footprints B-26
B-4 TL626 Option 3: Underground in Boulder Creek Road Temporary and Permanent Footprints B-29
B-5 Underground Trenching Summary B-35
B-6 Construction Schedule B-36
B-7 Temporary Work Area Summary B-38
B-8 Access Road Summary B-42
B-9 Peak Construction Personnel B-49
B-10 Typical Construction Equipment by Activity B-50
B-11 Typical Maintenance Activities B-58
B-12 Applicant Proposed Measures for Each Issue Area B-62
B-13 SDG&E Proposed Applicant Proposed Measures B-63
C-1 TL626 Alternative 1: Relocate Along State Route 79 – Approximate Pole Requirements C-9
D.2-1 Forest Service Scenic Integrity Objectives (Summary) D.2-4
D.2-2 Distance Zones D.2-5
D.2-3 BLM VRM Classes and Objective D.2-8
D.2-4 Environmental Setting – Power Lines D.2-10
D.2-5 Environmental Setting – Distribution Lines D.2-36
D.2-6 Applicable Plans and Regulations by Project Component D.2-54
D.2-7 Designated County Scenic Routes in the Project Area D.2-64
D.2-8 Identified Scenic Vistas and Visible Project Components D.2-66
D.2-9 Project Effects to Designated Scenic Roadways in the Project Area D.2-71
D.2-10 Visual Contrast Rating Summary D.2-775
D.2-11 Mitigation Monitoring, Compliance, and Reporting – Visual Resources D.2-114
D.3-1 SDAB Attainment Classification D.3-7
D.3-2 Ambient Air Quality Data (ppm unless otherwise indicated) D.3-8
D.3-3 Frequency of Air Quality Standard Violations D.3-8

D.3-4 Ambient Air Quality Standards D.3-11
D.3-5 SDAPCD Air Quality Significance Thresholds D.3-15
D.3-6 Proposed Project Estimated Construction Emissions D.3-18
D.3-7 Estimated Annual Construction Emissions D.3-20
D.3-8 Sensitive Land Uses within 1,000 feet of SDG&E Project Components D.3-21
D.4-1 Existing Vegetation Communities and Land Cover Power Line Replacement Projects D.4-7
D.4-2 Existing Vegetation Communities and Land Cover Type Totals D.4-11
D.4-3 Indicators of Management and Management Indicator Species D.4-76
D.4-4 Power Line Replacement Projects - BIO-1 Impacts D.4-90
D.4-5 Existing, Temporary, and Permanent Vegetation Impacts D.4-94
D.4-6 Existing, Temporary, and Permanent Vegetation Impacts by TL/Circuit D.4-95
D.4-7 Anticipated Temporary and Permanent Impacts for Preserve Areas D.4-105
D.4-8 Temporary and Permanent Impacts to RCA Areas D.4-110
D.4-9 Power Line Replacement Projects BIO-4 Impacts D.4-114
D.4-10 Temporary and Permanent Impacts to ACOE Jurisdictional Resources D.4-117
D.4-11 Temporary and Permanent Impacts to Wetland Resources D.4-118
D.4-12 Power Line Replacement Projects- BIO-6 Impacts D.4-125
D.4-13 Special-Status Plant Survey Periods and Locations D.4-136
D.4-14 Known Golden Eagle Nesting Locations by Line D.4-150
D.4-15a Threatened and Endangered Species D.4-167
D.4-15b Sensitive Plant Species – Regional Forester's List D.4-171
D.4-15c Sensitive Wildlife Species – Regional Forester's List D.4-173
D.4-15d Vegetation Communities D.4-179
D.4-16 Vegetation Communities Impact Acreage for the Options 1 and 2 ..... D.4195
D.4-17 Mitigation Monitoring, Compliance, and Reporting – Biological Resources D.4-213
D.5-1 Previously Recorded Cultural Resources within the TL682 APE D.5-11
D.5-2 Previously Recorded Cultural Resources within the TL626 APE D.5-12
D.5-3 Previously Recorded Cultural Resources within the TL625 APE D.5-13
D.5-4 Previously Recorded Cultural Resources within the TL629 APE D.5-14
D.5-5 Previously Recorded Cultural Resources within the TL6923 APE D.5-15
D.5-6 Previously Recorded Cultural Resources within the C79 APE D.5-16
D.5-7 Previously Recorded Cultural Resources within the C78 APE D.5-16
D.5-8 Previously Recorded Cultural Resources within the C157 APE D.5-17
D.5-9 Previously Recorded Cultural Resources within the C442 APE D.5-17
D.5-10 Previously Recorded Cultural Resources within the C440 APE D.5-18
D.5-11 Previously Recorded Cultural Resources within the C449 APE D.5-21

D.5-12 Power Line Replacement Projects – CUL-1 Impacts D.5-42
D.5-13 Power Line Replacement Projects – CUL-2 Impacts D.5-46
D.5-14 Power Line Replacement Projects – PALEO-1 Impacts D.5-52
D.5-15 Mitigation Monitoring, Compliance, and Reporting – Cultural and Paleontological Resources D.5-62
D.6-1 GHG Sources in California D.6-3
D.6-2 GHG Sources in San Diego County D.6-12
D.6-3 Total Estimated Construction Greenhouse Gas Emissions of SDG&E's Proposed Project D.6-14
D.7-1 Public Health and Safety Impacts Associated with SDG&E's Proposed Project D.7-17
D.7-2 Mitigation Monitoring, Compliance, and Reporting – Public Health and Safety D.7-32
D.8-1 Wildfires Larger than 15,000 within the Proposed MSUP/PTC Power Line Replacement Projects Study Area D.8-5
D.8-2 Mitigation Monitoring, Compliance, and Reporting – Fire and Fuels Management D.8-61
D.9-1 Watersheds and Hydrologic Features – TL682 ..... D.9-4
D.9-2 Watersheds and Hydrologic Features – TL626 ..... D.9-5
D.9-3 Watersheds and Hydrologic Features – TL625 ..... D.9-6
D.9-4 Watersheds and Hydrologic Features – TL629 ..... D.9-6
D.9-5 Watersheds and Hydrologic Features – TL6923 ..... D.9-7
D.9-6 Watersheds and Hydrologic Features – Distribution Lines D.9-8
D.9-7 Approved 2010 CWA Section 303(d) List of Water Quality Limited Segments Crossed by SDG&E's Proposed Project D.9-10
D.9-8 Soil Hydrologic Groups within Work Areas, by Segment D.9-11
D.9-9 SDG&E Exclusive-Use Access Roads to be Removed, by Distribution Line and Grade (Miles) D.9-40
D.9-10 SDG&E Exclusive Use Access Roads to be Maintained / Repaired, by Distribution Line and Grade (Miles) D.9-42
D.9-11 Mitigation Monitoring, Compliance, and Reporting – Hydrology and Water Quality D.9-63
D.10-1 Agency Jurisdiction of Project Components D.10-4
D.10-2 Cleveland National Forest LMP Land Use Zones D.10-6
D.10-3 County of San Diego General Plan Land Use Designations D.10-9
D.10-4 County of San Diego Zoning Designations D.10-9
D.10-5 Applicable Plans and Regulations by Project Component D.10-25
D.10-6 Land Use Zones within Cleveland National Forest D.10-30

D.10-7 Existing and Proposed Land Use Zone Distribution in Select IRAs of the Cleveland National Forest D.10-38
D.10-8 Sensitive Land Uses within 1,000 Feet of Project Components D.10-47
D.10-9 Plans and Regulations Consistency Analysis Summary D.10-51
D.10-10 Mitigation Monitoring, Compliance, and Reporting – Land Use D.10-71
D.11-1 Definitions of Technical Terms Related to Noise D.11-2
D.11-2 Typical Sound Levels Measured in the Environment and Industry D.11-2
D.11-3 San Diego County Noise Ordinance Sound Level Limits D.11-11
D.11-4 Maximum Sound Level (Impulsive) Measured D.11-12
D.11-5 Guidelines for Determining the Significance of Groundborne Vibration and Groundborne Noise Impacts D.11-13
D.11-6 Construction Noise from Conventional Activities D.11-15
D.11-7 Helicopter Noise Levels D.11-18
D.11-8 Vibration Source Levels for Construction Equipment at 50 Feet D.11-20
D.11-9 Mitigation Monitoring, Compliance, and Reporting – Noise D.11-31
D.12-1 Eastern San Diego County Fire Protection Service Providers D.12-2
D.12-2 Solid Waste Disposal Facilities in the Project Area D.12-6
D.12-3 Mitigation Monitoring, Compliance, and Reporting – Public Services and Utilities D.12-20
D.13-1 Recreation Areas and Trails Located Near or Traversed by TL682 ..... D.13-4
D.13-2 Recreation Areas and Trails Located Near or Traversed by TL626 ..... D.13-7
D.13-3 Recreation Areas and Trails located near or traversed by TL625 ..... D.13-10
D.13-4 Recreation Areas and Trails Located Near or Traversed by TL629 ..... D.13-13
D.13-5 Recreation Areas and Trails Located Near or Traversed by TL6923 ..... D.13-16
D.13-6 Recreation Areas and Trails Located Near or Traversed by C79 ..... D.13-17
D.13-7 Recreation Areas and Trails Located Near or Traversed by C157 ..... D.13-20
D.13-8 Recreation Areas and Trails Located Near or Traversed by C442 ..... D.13-21
D.13-9 Recreation Areas and Trails Located Near or Traversed by C440 ..... D.13-22
D.13-10 Recreation Areas and Trails Located Near or Traversed by C449 ..... D.13-25
D.13-11 Mitigation Monitoring, Compliance, and Reporting – Recreation D.13-54
D.14-1 Public Access Roadways D.14-3
D.14-2 Public Roadways Spanned by Existing and Proposed Project Alignments D.14-5
D.14-3 Forest Service Policies Regarding Public Motorized and Non-Motorized Use of Public Lands D.14-7
D.14-4 Transportation and Traffic Impacts Associated with SDG&E's Proposed Project D.14-17
D.15-1 Magnetic Field from Household Appliances D.15-4
D.15-2 Occupational Threshold Limit Values for 60 Hz EMFs D.15-7

D.15-3 Increasing Sag Height within 12 Foot-Wide to 100-Foot-Wide Easements..... D.15-9
D.15-4 Phasing Circuits to Reduce Magnetic Fields D.15-9
E-1 Comparison of Impacts for SDG&E's Proposed Project with Federal Proposed Actions E-7
E-2 Comparison of Impacts for SDG&E's Proposed Project with Additional Alternatives E-27
E-3 Environmentally Superior Alternative E-38
E-4 Summary of Federal Proposed Action for TL626 Options E-40
E-5 Comparison of Environmental Effects of Federal Proposed Action f or TL626 Replacement Options E-41
E-6 Summary of TL626 Replacement Alternatives Proposed by SDG&E E-56
E-7 Comparison of Environmental Effects of TL626 Replacement Alternatives Proposed by SDG&E E-56
E-8 Summary of Forest Service Proposed Action for C157 Reroute Options E-63
E-9 Comparison of Environmental Effects of C157 Reroute Options E-63
E-10 Key Features of the Alternatives E-69
E-11 Summary of Environmental Effects of the Alternatives E-70
F-1 Existing Projects and Electric Facilities Considered in the Cumulative Impact Analysis F-2
F-2 Cumulative Scenario – Reasonably Foreseeable Approved and Pending Projects ... F-3
G-1 Summary of Proposed Project and Alternatives Adverse and Unavoidable Impacts (Class I) G-9
G-2 Compliance with Applicable Federal Environmental Regulation and Policies G-12
I-1 Summary of Additional Issues Raised During Supplemental Scoping I-7
K-1 List of Preparers K-1

FIGURES

B-1 Regional Overview Map B-71
B-2 Power Line Replacement Projects Overview Map B-73
B-2a Facilities Included Under the MSUP B-75
B-3 TL682 Overview Map B-77
B-4 TL626, C79 Overview Map B-79
B-4a Forest Service Proposed Action - TL626 Alternative Overland Routes (Options 1, 2, and 4) B-81
B-4b Forest Service Proposed Action - TL626 Underground Relocation in Boulder Creek Road (Options 3a and 3b) B-83
B-4c Forest Service Proposed Action - Reroute and Undergrounding around Inaja Picnic Area (Option 5) B-85
B-5 TL625, C78, C157 Overview Map B-87

B-5a Forest Service Proposed Action - C157 Partial Relocation to Avoid Designated Wilderness B-89
B-6 TL629, C440, C442, C449 Overview Map B-91
B-6a Forest Service Proposed Action - C440 Mount Laguna Recreation Area Underground Alternative B-93
B-7 TL6923 Overview Map B-95
B-8 Proposed Single-Circuit Tangent Transmission Pole B-97
B-9 Proposed Single-Circuit Angle Transmission Pole B-99
B-10 Proposed Double-Circuit Tangent Transmission Pole B-101
B-11 Proposed Double-Circuit Transmission Angle Pole B-103
B-12a Proposed Steel Distribution Pole B-105
B-12b Proposed Steel Distribution Pole B-107
B-13 Proposed Distribution Riser Pole B-109
C-1 Remove TL626 from Service - TL6931 Upgrades C-21
C-2 Remove TL626 from Service - TL625 Loop-in C-23
C-3 TL626 Alternative 1: Relocate Along State Route 79 - Eliminated C-25
C-4 C157 Overhead and Underground Alternatives - Eliminated C-27
D.2-1 Key Observation Points D.2-119
D.2-2 KOP 1 – State Route 76 near Palomar Mountain Road D.2-121
D.2-3 KOP 2 – La Jolla Indian Reservation D.2-123
D.2-4 KOP 3 – State Route 76 near San Luis Rey Picnic Grounds D.2-125
D.2-5 KOP 4 – Inaja Memorial National Recreation Trail D.2-127
D.2-6 KOP 5 – Boulder Creek Road near Tule Springs Road D.2-129
D.2-7 KOP 6 – Boulder Creek Road near Dubois Road D.2-131
D.2-8 KOP 7 – Loveland Reservoir Trailhead D.2-133
D.2-9 KOP 8 – Japatul Road D.2-135
D.2-10 KOP 9 – Interstate 8 Westbound near State Route 79 ..... D.2-137
D.2-11 KOP 10 – Lyons Valley Road near Barrett Lake Road D.2-139
D.2-12 KOP 11 – State Route 79 at Viejas Boulevard D.2-141
D.2-13 KOP 12 – Old Highway 80 near Prut Road D.2-143
D.2-14 KOP 13 – Boulder Oaks Campground D.2-145
D.2-15 KOP 14 – La Posta Road D.2-146
D.2-16 KOP 15 – Pacific Crest National Scenic Trail near Hauser Mountain D.2-149
D.2-17 KOP 16 – Boulder Creek Road, West of TL626 ..... D.2-151
D.2-18 KOP 17 –Cuyamaca Peak D.2-153
D.2-19 KOP 18 – Ma-Tar-Awa RV Park D.2-155
D.2-20 KOP 19 – Viejas Grade Road D.2-157
D.2-21 KOP 20 – Skye Valley Road at Crossing of Barrett Lake D.2-159

D.2-22 KOP 21 – Bear Valley Trailhead D.2-161
D.2-23 KOP 22 – Sunrise Highway D.2-163
D.2-24 KOP 23 – USFS Volunteer Activity Center near Sunrise Highway D.2-165
D.2-25 KOP 24 – Pacific Crest National Scenic Trail near Boulder Oaks Campground D.2-167
D.4-1a TL682 Vegetation Overview Map D.4-257
D.4-1b TL626, C79 Vegetation Overview Map D.4-259
D.4-1c TL629, C440, C442, C449 Vegetation Overview Map D.4-261
D.4-1d TL625, C78, C157 Vegetation Overview Map D.4-263
D.4-1e TL6923 Vegetation Overview Map D.4-265
D.4-2a TL682 CNDDB Overview Map D.4-267
D.4-2b TL626, C79 CNDDB Overview Map D.4-269
D.4-2c TL629, C440, C442, C449 CNDDB Overview Map D.4-271
D.4-2d TL625, C78, C157 CNDDB Overview Map D.4-273
D.4-2e TL6923 CNDDB Overview Map D.4-275
D.4-3a TL682 USFS/USFWS Critical Habitat Overview Map D.4-277
D.4-3b TL626, C79 USFS/USFWS Critical Habitat Overview Map D.4-279
D.4-3c TL629, C440, C442, C449 USFS/USFWS Critical Habitat Overview Map D.4-281
D.4-3d TL625, C78, C157 USFS/USFWS Critical Habitat Overview Map D.4-283
D.4-3e TL6923 USFS/USFWS Critical Habitat Overview Map D.4-285
D.7-1 Project Area Facilities/Sites that Concern Public Health and Safety D.7-39
D.8-1 Fire Hazard Severity Zones D.8-71
D.9-1 Watersheds and Major Streams D.9-69
D.9-2 Hydrologic Groups D.9-71
D.10-1 Cleveland National Forest Land Use Zones (Existing) D.10-77
D.10-2 Cleveland National Forest Land Use Zones (LMP Amendment) D.10-79
D.11-1 Existing Noise Measurements Overview Map D.11-35
D.12-1 Eastern San Diego County Fire Protection Agencies D.12-23
D.13-1 TL 682 - Recreation Areas and Facilities D.13-63
D.13-2 TL626 and C79 - Recreation Areas and Facilities D.13-65
D.13-3 TL625, C78, and C157 - Recreation Areas and Facilities D.13-67
D.13-4 TL 629, C442, C440, C449 - Recreation Areas and Facilities D.13-69
D.13-5 TL 6923 - Recreation Areas and Facilities D.13-71
F-1 Cumulative Projects Map F-51

ES EXECUTIVE SUMMARY

This executive summary is organized as follows: ES.1, Introduction; ES.2, Project Overview; ES.3, Areas of Controversy/Public Scoping Issues; ES.4, Project Alternatives; ES.5, Summary of the Environmental Analysis; ES.6, Environmentally Superior Alternative Under CEQA; ES.7, Federal Preferred Alternative; and ES.8, Issues to be Resolved.

ES.1 Introduction

San Diego Gas & Electric Company's (SDG&E's or applicant) proposed project would include issuance of a Master Special Use Permit (MSUP) for the SDG&E system in the Cleveland National Forest (CNF), and would replace/fire harden select lines within the SDG&E system both on and off the CNF.

SDG&E is proposing to combine over 70 individual use permits and easements for SDG&E electric facilities within the (CNF into one MSUP to be issued by the United States Forest Service (Forest Service). In addition, SDG&E is proposing to replace certain electric power lines located within and outside the CNF. Replacement would primarily include fire hardening (wood-to-steel pole replacement), relocation, and undergrounding. The proposed power line replacement projects will require authorization from the Forest Service under the MSUP, as well as a Permit to Construct from the California Public Utilities Commission (CPUC).

The CNF MSUP study area is located within multiple locations within the Trabuco, Palomar, and Descanso ranger districts of the CNF, Orange and San Diego Counties, California. The proposed power line replacement projects are located within and outside the Palomar and Descanso ranger districts of the CNF in the vicinity of the unincorporated communities of Alpine, Boulevard, Pine Valley, Descanso, Campo, Pauma Valley, Santa Ysabel, Julian, and Warner Springs within the central portion of San Diego County. SDG&E's proposed power line replacement projects not only traverse National Forest System lands, but due to the patchwork of land ownership in the project study area, also traverse lands managed by the Bureau of Land Management (BLM); tribal lands of the La Jolla, Campo, Inaja/Cosmit, and Viejas Indian Reservations managed by the respective tribes and held in trust by the Bureau of Indian Affairs (BIA); Cuyamaca Rancho State Park lands managed by California State Parks (CSP); lands under the jurisdiction of the City of San Diego, and private holdings within unincorporated San Diego County.

Project approval would allow for the continued operation and maintenance of SDG&E electric facilities within the CNF and authorize the replacement of certain existing power lines on and adjacent to CNF lands. The proposed project is needed because the existing authorizations within the CNF are expired, and the existing power lines are needed to supply power to local communities, residences, and government-owned facilities located within and adjacent to the CNF.

The CPUC and Forest Service have independent jurisdiction and approval authority for the project. The CPUC is the lead agency under the California Environmental Quality Act (CEQA) and will use this EIR/EIS in consideration of SDG&E's application for a Permit to Construct the proposed power line replacement projects. The Forest Service is the lead federal agency under the National Environmental Policy Act (NEPA) and will use this EIR/EIS in consideration of whether to issue a Master Special Use Permit. The CPUC and Forest Service have prepared this joint EIR/EIS for SDG&E's proposed Master Special Use Permit and Permit to Construct (MSUP/PTC) Power Line Replacement Projects (SDG&E's proposed project) in compliance with CEQA and NEPA. The BIA and BLM are joining the Forest Service as federal cooperating agencies under NEPA, and the CSP is participating as a responsible agency under CEQA.

The purpose of the EIR/EIS is to disclose the environmental impacts expected to result from construction and operation of SDG&E's proposed project and provide mitigation measures, which, if adopted, would avoid or minimize those environmental impacts as well as identify alternatives to SDG&E's proposed project (including the No Project/No Action Alternatives) that could avoid or minimize significant environmental impacts. This EIR/EIS does not make recommendation regarding the approval or denial of the project; it is purely information in content and has been prepared to inform the public and to meet the needs of federal, state, and local permitting agencies in considering SDG&E's proposed project.

ES.2 Project Overview

SDG&E's proposed project would include issuance of a MSUP for the SDG&E system, including 102 miles of electric lines and over 34 miles of access roads within the CNF and would replace/fire harden certain power lines within the SDG&E system totaling approximately 146 miles both on and off the CNF. The following provides an overview of the proposed power line replacement projects.

ES.2.1 SDG&E's Proposed Power Line Replacement Projects

SDG&E proposes to replace the following five 69-kilovolt (kV) transmission lines (TL) and six 12 kV distribution circuits (C):

- TL682 is approximately 20.2 miles in total length and generally runs from Rincon Substation east to Warners Substation. Proposed replacement includes wood-to-steel pole conversion.
- TL626 is approximately 18.8 miles in total length and generally runs from Santa Ysabel Substation south to Descanso Substation. Proposed replacement includes wood-to-steel pole conversion.
- TL625 is approximately 22.5 miles in total length and generally runs from Loveland Substation east to Barrett Tap, from Barrett Tap east to Descanso Substation, and from

Barrett Tap south to Barrett Substation. Proposed replacement includes wood-to-steel pole conversion along with single circuit to double circuit conversion.

- TL629 is approximately 29.8 miles in total length and generally runs from Descanso Substation east to Glencliff Substation, from Glencliff Substation southeast to Cameron Tap, from Cameron Tap south to Cameron Substation, and from Cameron Tap east to Crestwood Substation. Proposed replacement includes wood-to-steel pole conversion, undergrounding, and single to double circuit conversion.
- TL6923 is approximately 13.4 miles in total length and generally runs from Barrett Substation east to Cameron Substation. Proposed replacement includes wood-to-steel pole conversion.
- C79 is approximately 2.2 miles in total length and generally runs from Boulder Creek Road east to the Cuyamaca Peak communication site. Proposed replacement includes removal of existing overhead line and replacement with new undergrounding.
- C78 is approximately 1.8 miles in total length and generally runs from east of Viejas Reservation, east along Viejas Grade Road, to Via Arturo Road. Proposed replacement includes wood-to-steel pole conversion and overhead relocation.
- C157 is approximately 3.5 miles in total length and generally runs from Skye Valley Road, near Lyons Valley Road, east to Skye Valley Ranch. Proposed replacement includes wood-to-steel pole conversion. The applicant's proposal includes replacement and motorized use in the congressionally designated Hauser Wilderness. This aspect of the applicant's proposal conflicts with the requirements of the Wilderness Act.
- C442 is approximately 6.2 miles in total length and generally runs south from Pine Valley Road to Los Pinos Peak Forest Station and along Pine Creek Road south toward the community of Pine Valley. Proposed replacement includes wood-to-steel pole conversion.
- C440 is approximately 24.0 miles in total length and generally runs from Glencliff Substation northeast to Mount Laguna along Sunrise Highway. Proposed replacement includes wood-to-steel pole conversion with some line removal, undergrounding, and overhead relocation.
- C449 is approximately 6.7 miles in total length and generally runs from Old Highway 80 south along Buckman Springs Road to Oak Drive and southwest along Morena Stokes Valley Road to Camp Morena. Proposed replacement includes wood-to-steel pole conversion with some line removal and undergrounding.

SDG&E also proposes to install appurtenant facilities on poles and within the right-of-way (ROW) as needed to manage the power line system. These appurtenances may include electrical switches, smart grid control devices, weather stations, and surveillance cameras.

ES.2.2 Federal Proposed Action

The federal proposed action includes the Forest Service, BIA and BLM proposed actions.

The Forest Service reviewed and accepted the application for an MSUP with modifications to certain actions on National Forest System lands. This modified proposal includes the Forest Service proposed action, which, as described in Section B.3.2 of this EIR/EIS, modifies SDG&E's proposed project along TL626, C157, and C440 and the BIA proposed action, which modifies SDG&E's proposed project along TL682. In addition, the Forest Service proposes to authorize electrical control devices and weather stations not otherwise specified in the permit, subject to Forest Service review and approval of final design and location. The Forest Service is not proposing to authorize surveillance cameras on National Forest System lands.

The BLM proposed action does not modify SDG&E's proposed project and includes portions of SDG&E's proposed power line replacement projects for TL629, TL625, and TL6923. The BLM proposed action is to issue new ROW grants for the continued occupancy of the three transmission lines and authorize the fire hardening upgrades.

ES.3 Areas of Controversy/Public Scoping Issues

The content of this EIR/EIS reflects input received from government officials, agencies, non-governmental organizations, and concerned members of the public during the EIR/EIS scoping period. See Section A Introduction/Overview of this EIR/EIS, Table A-1 for a list of issues raised and addressed in the EIR/EIS. The formal scoping period followed the CPUC's publication of the Notice of Preparation (NOP) of an EIR (September 23, 2013) and the Forest Service's publication of the Notice of Intent (NOI) to prepare an EIS in the Federal Register (September 23, 2013). Following the formal scoping period, the CPUC and Forest Service provided a supplemental 45-day scoping period (January 21 – March 7, 2014) to provide the public with an additional opportunity to comment on the topics and alternatives to be addressed in the EIR/EIS.

Major issues raised during this process included evaluation of alternatives, including project design alternatives such as undergrounding and relocation of certain power lines such as TL626. Environmental and social issues that were raised during scoping included impacts on a variety of sensitive resources, including impacts to natural scenery; biologically sensitive areas, including golden eagle (*Aquila chrysaetos)* and riparian habitat; residential and recreational areas; areas susceptible to erosion; increased risk of wildfire hazards; public health and safety; effects on local groundwater resources; as well as growth inducement and cumulative effects from other energy projects in the region in addition to all past, present, and reasonably foreseeable projects within the geographic range of the project.

ES.4 Project Alternatives

Alternatives considered in this EIR/EIS include those considered by SDG&E, the CPUC, Forest Service and the BIA, as well as those identified by the general public and other agencies during the public scoping period. Of the 26 alternatives considered to SDG&E's proposed project, 11 project alternatives along with the No Action and No Project alternatives are carried forward for full analysis in this EIR/EIS.

ES.4.1 Required Alternatives

In addition to detailed consideration of SDG&E's proposed project, NEPA mandates the detailed consideration of the federal proposed action and the No Action Alternative, and CEQA requires consideration of a No Project Alternative. These actions and alternatives are discussed in the EIR/EIS as required.

ES.4.1.1 Federal Proposed Action

The Federal proposed action includes actions proposed by the Forest Service, BIA, and BLM. The Forest Service proposed action includes issuance of an MSUP for the SDG&E system in the Cleveland National Forest and modifies SDG&E's proposed project along TL626, C157 and C440. The BIA proposed action also includes upgrades to facilities on La Jolla Reservation lands as proposed by the La Jolla Band of Luiseño Indians. The BLM proposed action includes issuing ROW grants for portions of SDG&E's proposed power line replacement projects for TL629, TL625, and TL6923.

ES.4.1.1.1 Forest Service Proposed Action

TL626 Alternative Routes

The Forest Service proposed action considers the following five options for relocating certain segments of TL626. All other project components would remain the same under these alternatives.

Option 1: SDG&E Proposed Overhead Alignment through Inaja and Cosmit Reservation Lands

Reroutes a portion of TL626 to the east on the Inaja and Cosmit Reservation Lands and would develop over 5.5 miles of new overhead electric utility ROW and extend TL626 to approximately 20.6 miles in length compared to the reconstruction of 18.8 miles of the existing TL626 in place as proposed. Approximately 3.7 miles of the existing alignment and associated access roads would be restored.

Option 2: SDG&E Proposed Overhead Alignment around Inaja and Cosmit Reservation Lands

Reroutes a portion of TL626 to the east and around the Inaja and Cosmit Reservation Lands and would develop over 5.6 miles of new overhead electric utility ROW and extend TL626 to approximately 20.7 miles in length compared to the reconstruction of 18.8 miles of the existing TL626 in place as proposed. Approximately 3.7 miles of the existing alignment and associated access roads would be restored.

Option 3: Partial Underground Relocation in Boulder Creek Road

Options 3a and 3b would consist of placing a segment of TL626 underground in Boulder Creek Road. Depending on the option, TL626 would be extended to 26.3 miles (Option 3a which undergrounds 11.4 miles and includes 1 mile of new overhead ROW) or 22.9 miles (Option 3b which undergrounds 6.3 miles and includes 1 mile of new overhead ROW) in length compared to the reconstruction of 18.8 miles of the existing TL626 in place as proposed. Approximately 4.9 miles and 3.2 miles for Options 3a and 3b, respectively, of the existing alignment and associated access roads would be restored.

Option 4: Overhead Relocation along Boulder Creek Road

Relocates a 7.5-mile segment of TL626 overhead along Boulder Creek Road to Pine Hills Fire Station where it would connect to Options 1 and 2 described above and continue overland for approximately 2.1 miles. The rerouted segment of Option 4 would develop approximately 9.6 miles of new overhead ROW and extend TL626 to 23.5 miles compared to the reconstruction of 18.8 miles of the existing TL626 in place as proposed. Approximately 4.9 miles of the existing alignment and associated access roads would be restored.

Option 5: Reroute and Undergrounding around Inaja Picnic Area

Relocates a portion of TL626 around the Inaja Memorial Picnic Area. Consists of approximately 2,100 feet of relocated overhead alignment along with a 400-foot underground segment located within an existing parking lot. The existing crossing and access road would be restored.

C157 Partial Relocation to Avoid Designated Wilderness

The Forest Service proposed action considers the following two options for relocating a segment of C157 to avoid designated wilderness areas. All other project components would remain the same under these alternatives.

Option 1: SDG&E Proposed Alignment between Two Wilderness Areas

Reroutes an approximately 2-mile segment of C157 to the south of the existing alignment. Extends C157 to 4.1 miles in length compared to the reconstruction of 3.5 miles of the existing C157 as proposed.

Option 2: City of San Diego Modified Alignment

Reroutes a 2-mile segment of C157 similar to option 1 with a slight shift on City-owned property to the north. This option would extend C157 to 4.1 miles in length compared to the reconstruction of 3.5 miles of the existing C157 as proposed.

C440 Mount Laguna Underground Alternative

Besides undergrounding C440 as proposed by the project, the Forest Service proposed action includes undergrounding an additional 14.3 miles of C440 primarily within existing roadways in the Mount Laguna Recreation Area. All other project components would remain the same under this alternative.

ES.4.1.1.2 BIA Proposed Action

The BIA proposed action would modify TL682 on Tribal lands by undergrounding a 1,500-foot segment of TL682 through the economic development zone located on the La Jolla Reservation along with relocation of certain poles.

ES.4.1.1.3 BLM Proposed Action

The BLM action would authorize the power line replacement work included in SDG&E's proposed project on public lands administered by the BLM for portions of SDG&E's proposed power line replacement project for TL629, TL625, and TL6923, and issue ROW grants for the continued occupancy of the transmission lines on public lands under BLM jurisdiction.

ES.4.1.2 No Action Alternative – No MSUP Issued

Under the No Action Alternative, the MSUP would not be issued for the existing electric lines, and the existing permits would terminate according to their terms. Those expired permits require the holder (SDG&E) to remove the existing 102 miles of electric lines and 45 miles of access road, and restore the site to conditions acceptable to the Forest Service. The Forest Service would manage the land under its jurisdiction consistent with the CNF Land Management Plan (LMP). Accordingly, no pole replacement, ground disturbance, or other project effects would occur associated with SDG&E's proposed project as no pole replacement, construction, or long-term operations and maintenance associated with the

electric lines would be authorized on National Forest System lands. Under this alternative, SDG&E would need to redesign the existing electric system to avoid National Forest System lands in conformance with California Independent System Operator (ISO) requirements in order to meet the electric demand in their service territory.

ES.4.1.3 No Project Alternative

Under the No Project Alternative, the existing alignments within the CNF would be maintained as they are currently, under their approximately 70 separate permits and easements. In addition, none of SDG&E's proposed power line replacement projects including proposed fire hardening activities would be authorized.

ES.4.2 Additional Alternatives

Numerous alternatives to SDG&E's proposed project and the Federal Proposed Action were suggested during the public scoping and supplemental scoping periods by the general public in response to the NOP and Notice of Intent (NOI) as well as additional information provided through the data request process with SDG&E. In total, 17 additional alternatives to those required under CEQA and NEPA were identified in the following categories during scoping:

- Alternatives to TL626
  - TL626 Alternative 1: Relocate Along State Route 79 (SR-79)
  - TL626 Alternative 2: Demand Side Management Options
  - TL626 Alternative 3: Removal from Service (Upgrade TL6931 or TL625)
  - TL626 Location Alternatives.
- Alternatives to C157
  - C157 Partial Underground Alternative
  - C157 Alternative Route 1: Corte Madera Ranch to Skye Valley Ranch
  - C157 Alternative Route 2: Los Pinos to Skye Valley Ranch.
- Additional undergrounding alternatives
  - Underground all Tie-lines and Circuits Alternative
  - Underground Tie-lines and Circuits within Existing Roadways.
- Design Alternatives
  - Partial Removal of Overland Access Roads
  - Alternative Pole Design 1 – Height
  - Alternative Pole Design 2 – Material.

- System Alternatives
  - System Alternative 1: Consolidate TL6923 and TL625 along Sunrise Powerlink
  - System Alternative 2: Additional Consolidation and Removal of Facilities
  - System Alternative 3: No-Wire Alternative
  - System Alternative 4: Fire harden with similar materials and improve fire hardening by increasing vegetation management and system maintenance oversight
  - System Alternative 5: Distributed Generation.

Of the 17 alternatives considered, the following two were carried forward for full analysis in this EIR/EIS. As described in Section C of this EIR/EIS, alternatives that were not carried forward for full analysis did not meet project objectives, feasibility or environmental effectiveness criteria.

ES.4.2.1 Partial Removal of Overland Access Roads

This alternative would remove up to 10.5 miles of exclusive use access roads that are in general greater than 25% grade and in close proximity to creeks, particularly along TL626 (Boulder Creek) and TL625 (Barber Mountain/Carveacre).

ES.4.2.2 Removal of TL626 from Service

Under this alternative, TL626 would be removed from service. SDG&E would implement the following system upgrades and changes in order to provide service lost due to the removal of TL626:

- Upgrade the existing 6-mile 69 kV TL6931 by fire hardening and adding a circuit from the Boulevard Substation to the Crestwood Substation, or
- Modify existing TL625 by constructing a new 3-mile double circuit loop-in into the Suncrest Substation. The new double circuit 69 kV line would primarily cross National Forest Service lands immediately adjacent to the 500 kV Sunrise Powerlink line. A new transformer and substation rack would be installed within the existing footprint of the Suncrest Substation to establish the new 69 kV source.
- In order to serve existing customers at Boulder Creek substation, this alternative would either convert a 6.5-mile section of TL626 from 69 kV to 12 kV distribution, or serve the load with a local off-grid photovoltaic system. A 6.8-mile section of TL626 that is co-located with C79 would also be converted to a 12 kV fire hardened distribution line.

ES.5 Summary of Environmental Analysis

The analysis of environmental impacts is based upon the environmental setting (i.e., conditions as they existed at the time the NOP was distributed) applicable to each resource/issue and the manner in which the construction, operation, and maintenance of the Proposed Project or alternatives would affect the environmental setting and related resource conditions. The impact assessment methodology also considers the following three topics: (1) the regulatory setting and evaluation of whether SDG&E's proposed project or alternatives would be consistent with adopted federal, state, and local regulations and guidelines; (2) growth-inducing impacts; and (3) cumulative impacts.

Reference to "significant" or "less-than-significant" environmental effects in this EIR/EIS is considered a CEQA-related finding consistent with Public Resources Code Section 21082.2 and CEQA Guidelines Section 15064. NEPA does not require such a finding for an EIS. Consequently, references to significant impacts in this document are made to fulfill the requirements of CEQA pursuant to the standards of California law.

While the criteria for determining the significance of an impact under CEQA are unique to each area of the environmental analysis, the following classifications were uniformly applied to denote the significance of environmental impacts under CEQA. Classification of impacts under CEQA are as follows:

- **Class I:** Significant – cannot be mitigated to a level that is less than significant
- **Class II:** Significant – 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:** No impact identified

The evaluation of effects under NEPA considers the magnitude, duration, and significance of the changes. Changes that will improve the existing condition are noted, and detrimental impacts are characterized as adverse.

Table ES-1 located at the end of this executive summary provides a summary of the environmental effects for SDG&E's proposed project and each of the alternatives evaluated in this EIR/EIS. Following is a summary of the environmental impact conclusions for SDG&E's proposed project and each of the project alternatives.

ES.5.1 SDG&E's Proposed Project

As shown in Table ES-1, SDG&E's proposed project would have adverse impacts under NEPA that cannot be mitigated and, under CEQA, would have significant and unmitigable (Class I) impacts to visual resources (Impact VIS-1: TL626 impact to Inaja scenic overlook); air quality (Impact AIR-1: construction would generate NOx and PM10 emissions of criteria pollutants), water resources (Impact HYD-4: ongoing use of access roads associated with C79, C442, TL625, TL626, and TL 629 in excess of 25% slopes would result in erosion, gullying and sedimentation), and land use (Impact LU-3: conflicts with the Wilderness Act associated with C157). Impacts in the remaining 9 issue areas were either found under NEPA to be not adverse and under CEQA less than significant (Class III) following the implementation of applicant proposed measures (APMs), and/or following the implementation of mitigation measures presented in this EIR/EIS, to be mitigable under NEPA and under CEQA, less than significant with mitigation implemented (Class II).

ES.5.2 Federal Proposed Action

As discussed in Section ES.4.1.1, the federal proposed action modifies the applicant's proposed project along four project alignments, including TL626, C157, C440, and TL682.

Forest Service Proposed Action for TL626 (5 Options considered)

Options 1, 2, 3, and 4 would relocate a portion of TL626 out of the Cedar Creek riparian area, which would reduce adverse and unmitigable impacts under NEPA and significant and unavoidable (Class I) impacts under CEQA due to erosion and water quality impact due to reauthorization of steep access roads in the Cedar Creek riparian area (Impact HYD-4). These impacts would be reduced to mitigable under NEPA and to less than significant with mitigation under CEQA (Class II). Relocating a segment of TL626 as proposed under Options 3 and 4 would also avoid Class II impacts associated with conflicts with resource management standards identified in the Forest Service's Land Management Plan (LMP) for the Cedar Creek riparian area.

While Options 1 through 4 would reduce identified effects, these options, as summarized in Table ES-1, would create the following additional impacts when compared to replacing TL626 in place as proposed in SDG&E's proposed project due to the increased area of disturbance required along with the establishment of a new overhead ROW where none currently exists:

- ***Impact VIS-3 (visual character).*** As a result of placing new poles and power lines in an area where none currently exist, Impact VIS-3 would change from not adverse under NEPA and less than significant under CEQA (Class III) to adverse and unmitigable under NEPA and significant and unavoidable (Class I) under CEQA. Mitigation

Measure MM VIS-1 has been provided to minimize the visual prominence and contrast. However, due to the height of poles, open visibility of the new overhead ROW under Options 1, 2, and 4 and 1-mile overhead segment proposed under Option 3, and proximity of residences, there are no effective screening methods available to reduce the significant visual contrast of the introduction of a new overhead 69-kilovolt (kV) transmission line ROW where none currently exists.

- ***Impact CUL-4 (traditional cultural properties).*** As a result of placing new poles and power lines in an area where none currently exist, Impact CUL-4 would change under Options 1 and 2 from not adverse under NEPA and less than significant under CEQA (Class III) to adverse and mitigable under NEPA and less than significant with mitigation (Class II) under CEQA.
- ***Impact PH-4 (aviation hazards).*** As a result of placing new poles and power lines in an area where none currently exist, Impact PH-4 would require additional mitigation and therefore change from not adverse under NEPA and under CEQA less than significant (Class III) to adverse and mitigable under NEPA and less than significant with mitigation under CEQA (Class II).
- ***Impact FF-3 (reduced firefighter effectiveness).*** As a result of placing new poles and power lines in an area where none currently exist, Impact FF-3 would require additional mitigation and therefore would change from not adverse under NEPA and under CEQA less than significant to adverse and mitigable under NEPA and less than significant with mitigation under CEQA (Class II). Under Options 3 and 4, there would be a net improvement in firefighter effectiveness due to the overall reduction in overhead transmission lines.
- ***Impact LU-2 (divide an established community).*** Due to placement of new overhead ROW where none currently exists as proposed under Options 1,2 and 4 on the periphery of the community of Pine Hills, Impact LU-2 would require additional mitigation and therefore change from not adverse under NEPA and under CEQA less than significant (Class III) to adverse and mitigable under NEPA and to less than significant with mitigation under CEQA (Class II).

In terms of comparing the number of significant environmental effects created versus reduced or eliminated, as summarized in Table ES-1, Options 1 through 4 as proposed by the Forest Service for TL626 under CEQA would not be environmentally superior to SDG&E's proposed reconstruction of TL626 in place.

Option 5, which relocates a segment of TL626 around the Inaja Memorial Picnic Area, would reduce Impact VIS-1 (Scenic Vista) from unavoidable under NEPA and significant and unavoidable (Class I) under CEQA to not adverse under NEPA and less than significant (Class III) under CEQA. Option 5 also has the potential to reduce long-term direct collision-related impacts to golden eagles (*Aquila chrysaetos)* as the existing line crosses over the San Diego River gorge at higher elevations and is located within 1 mile of a historical golden eagle nest. As summarized in Table ES-1, Option 5 would result in the following significant effects in addition to those that would be caused by the project as proposed:

- ***Impact PH-4 (aviation hazards).*** As a result of placing new poles and power lines in an area where none currently exist, Impact PHS-4 would require additional mitigation and change from not adverse under NEPA and less than significant (Class III) under CEQA to adverse and mitigable under NEPA and less than significant with mitigation under CEQA (Class II).
- ***Impact FF-3 (reduced firefighter effectiveness).*** As a result of placing new poles and power lines in an area where none currently exist, Impact FF-3 would require additional mitigation and change from not adverse under NEPA and less than significant (Class III) under CEQA to adverse and mitigable under NEPA and less than significant with mitigation under CEQA (Class II).

In terms of comparing the number of significant environmental effects created versus reduced or eliminated, as in Table ES-1, Option 5 as proposed by the Forest Service for TL626 would under CEQA be environmentally superior to SDG&E's proposed reconstruction of TL626 in place.

Forest Service Proposed Action for C157 (2 options considered)

Relocation of C157 (Options 1 and 2) would eliminate the adverse and unmitigable impacts under NEPA and significant and unavoidable (Class I) impacts under CEQA to land use conflicts associated with the provisions of the Wilderness Act (Impact LU-3). While additional significant effects beyond those that would be caused by the project as proposed were identified to arroyo toad critical habitat (Impact BIO-6) and to City of San Diego conservation lands (Impact BIO-7), these impacts can be mitigated by selecting Option 2, City of San Diego Modified Alignment, and by implementation of new mitigation measures as described in Section D.4, Biological Resources.

In terms of comparing the number of adverse environmental effects created versus reduced or eliminated, as summarized in Section in Table ES-1, relocation of C157 Option 2, City of San Diego Modified Alignment, would under CEQA be environmentally superior to the applicant's proposed reconstruction of C157 in place.

Forest Service Proposed Action for C440 Underground

While this alternative would underground additional portions of C440 within the Mount Laguna Recreation Area beyond that proposed in the project and would thereby reduce long-term impacts due to fire hazards and visual impacts, the impact findings as summarized in Table ES-1 would be similar to those described for the propose project. In addition, this alternative would have greater short-term impacts due to the increased disturbance area required for construction when compared to reconstruction of the existing electric lines in place as proposed by the project.

In terms of comparing the number of significant environmental effects created versus reduced or eliminated, as summarized in Table ES-1, further undergrounding as proposed by the Forest Service for C440 under CEQA would not be environmentally superior to SDG&E's proposed project for C440, which includes undergrounding as well as overhead reconstruction in place.

BIA Proposed Action for TL682

This alternative would relocate a portion of TL682 (within the La Jolla Reservation). While this alternative would reduce visual, recreational, fire, public safety, and land use impacts, the impact findings as summarized in Table ES-1 would be similar when compared to the proposed project and therefore this alternative would rank equally with the applicant's proposed reconstruction of TL682 in place.

BLM Proposed Action for TL629, TL625 and TL6923

The BLM action would not modify portions of SDG&E's proposed power line replacement projects for TL629, TL625, and TL6923 and therefore the environmental effects described for these portions of SDG&E's project would be identical to those considered under the BLM proposed action.

ES.5.3 Additional Alternatives

Partial Removal of Overland Access Roads

This alternative would remove problematic access road segments along TL626, TL625, TL629, and C442. The EIR/EIS concludes there is no way to feasibly avoid substantial long-term effects on erosion and sedimentation (Impact HYD-4) without decommissioning (removing) or realigning these road segments as proposed under this alternative. This alternative would therefore reduce HYD-4 impacts that were determined to be adverse and unavoidable under NEPA and significant and unavoidable (Class I) under CEQA to mitigated under NEPA and less than significant with mitigation under CEQA (Class II), without creating additional impacts.

In terms of comparing the number of adverse environmental effects created versus reduced or eliminated, as summarized in Table ES-1, removing overland access roads in excess of 25% as described in this alternative would be environmentally superior to the applicant's proposed project, which would re-authorize under the MSUP the use of problematic road segments within sensitive watersheds.

Removal of TL626 from service

This alternative would remove TL626 out of areas managed by the Forest Service as having high-value resource protection and would replace TL626 with facilities requiring a similar or reduced disturbance footprint within existing overhead electric utility ROWs and when compared to SDG&E's proposed project would reduce adverse and unmitigable impacts under NEPA and significant and unavoidable (Class I) impacts under CEQA in the following issue areas: Impact VIS-1 (Scenic Vista) associated with the TL626 and the Inaja Scenic Overlook and erosion and water quality impacts in the Cedar Creek riparian area (Impact HYD-4).

Removal of TL626 as proposed under this alternative would also avoid conflicts with the LMP amendment (Impact LU-3) determined to be adverse under NEPA and significant under CEQA while not substantially increasing impacts to other issue areas as summarized in Table ES-1.

In terms of comparing the number of significant adverse environmental effects created versus reduced or eliminated, as summarized in Table ES-1, removing TL626 from service as described in this alternative would under CEQA be environmentally superior to SDG&E's proposed project for TL626.

ES.5.4 No Action Alternative

Under the No Action Alternative, SDG&E's proposed project including alternatives considered would not be constructed. All environmental impacts associated with the construction and operation of the proposed project would be eliminated. SDG&E's existing permits to operate and maintain its facilities on National Forest lands would not be renewed and therefore per the existing permits, SDG&E would be required to remove its electric facilities from the visual landscape, and areas disturbed by construction and operation and maintenance of these facilities would be restored to their pre-project conditions. Restoring to the pre-project site conditions would entail recontouring, grading, stabilization of disturbed surfaces, seeding, and planting to restore the affected areas, which would generate short-term temporary impacts to the environment that were either found not to be adverse under NEPA and less than significant (Class III) under CEQA, and/or, following implementation of mitigation measures presented in this EIR/EIS, to be mitigable under NEPA and less than significant with mitigation (Class II) under CEQA.

In order that the decision makers can compare the impacts of approving the project with the impacts of not approving the project, the events or actions that would be reasonably expected to occur in the foreseeable future if the MSUP is not approved by the Forest Service must also be considered.

Removal of SDG&E electric facilities from the National Forest would materially reduce and/or eliminate the ability of SDG&E to provide power to the area now served by these facilities. To avoid these consequences, SDG&E would be required to implement additional transmission upgrades. It is reasonably expected that the existing 69 kV and 12 kV electric lines within the National Forest, removed under the No Action Alternative, would be replaced in-kind outside the National Forest on an as-needed basis and therefore are assumed for purposes of the analysis conducted in this EIR/EIS, to be part of the No Action Alterative. As summarized in Section E Comparison of Alternatives in this EIR/EIS Table E-1, impacts resulting from removal and replacement of electric facilities under the No Action alternative would (when compared to reconstruction of the existing electric lines in place as proposed by the project), in most cases, be equal to or greater when compared to the proposed project due to the increased disturbance area required for both the restoration and removal of existing facilities combined with the construction of new in-kind facilities outside the National Forest.

ES.5.5 No Project Alternative

Under the No Project Alternative, the proposed power line replacement projects would not be built and the existing SDG&E electric facilities would remain; therefore, none of the temporary and permanent construction impacts described in Sections D.2 through D.14 would occur. Operation and maintenance of SDG&E electrical facilities would continue and include routine and periodic equipment testing, pole brushing, herbicide application, and other related ongoing maintenance tasks and would be based on the requirements of the existing permits. While these activities and the continued presence of SDG&E facilities represent a potential and ongoing impact to existing natural resources such as continued erosion and water quality impacts due to existing steep access roads and ongoing conflicts with applicable land use plans such was the Wilderness Act and the Forest Service LMP (as summarized in Section E Comparison of Alternatives in this EIR/EIS Table E-2), these ongoing impacts would not increase in duration, intensity, or frequency over existing conditions; therefore, no impacts over existing baseline conditions would occur.

Under the No Project Alternative, the benefits associated with the reduction in the risk of power line-related wildfire as well as reliability improvements of power delivery to the unincorporated communities of Descanso, Campo, Pauma Valley, Santa Ysabel, Warner Springs, and other surrounding communities would not be developed, and the removal of over 11 miles of access roads and undergrounding of 13 miles of electric lines as proposed would not be implemented.

ES.6 Environmentally Superior Alternative Under CEQA

CEQA requires that an EIR identify an "environmentally superior alternative." The evaluation of the environmental superiority of an alternative focuses on its ability to reduce or avoid significant effects of the proposed project. Whether the alternative would improve existing environmental conditions or provide beneficial impacts are not considered in this evaluation. Based on the analysis presented in Sections D.2 through D.14 and comparison of alternatives presented in Section E of this EIR/EIS, the environmentally superior alternative was determined under CEQA to be the No Project Alternative. Under the No Project Alternative, the proposed project would not be constructed. All environmental impacts associated with the construction and operation of the proposed project would be eliminated and no impacts over existing baseline conditions would occur.

CEQA Guidelines, Section 15126, subd. (d)(2) stipulates that "if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

Overall, based on the analysis for each alternative presented in Sections D.2 through D.14, and as summarized in Section ES-5, the environmentally superior alternative other than the No Project Alternative is defined as follows:

Environmentally Superior Alternative

Alternative	Jurisdiction
Powerline Replacement Projects	
SDG&E's Proposed Power Line Replacement Projects: TL682, TL625, TL629, TL6923, C79, C78, C442, C440, C449.	CPUC, FS, BLM, and BIA to consider.
Relocation of C157 out of wilderness (Option 2 City of San Diego Modified Alignment)	CPUC and FS to consider
Removal of TL626 and replacement with electric facilities within existing electric utility ROWs* • Reconstruction of TL6931 • Conversion of 13 miles of TL626 to 12 kV	CPUC, FS, and BIA (Campo Reservation) to consider
MSUP	
Partial Removal of Overland Access Roads	FS to consider reduction of existing exclusive use access roads on National Forest lands.

Notes:

[1] Reconstruction of TL6931 compared to developing the TL625 loop-in along the Sunrise Powerlink would rank similarly in terms of number of adverse impacts created vs reduced or eliminated. Reconstruction of TL6931 ranks higher due to the extensive work completed for TL6931, which provides a knowledge base that reduces the risk of impacting environmental resources (Sources: SDG&E 2012, TL6931 PEA)

BIA = Bureau of Indian Affairs, BLM = Bureau of Land Management, CPUC = California Public Utilities Commission, FS = Forest Service.

The environmentally superior alternative, specifically the relocation of C157, would avoid the significant and unavoidable (Class I) impact to land use conflicts (Impact LU-3) under CEQA

associated with the provisions of the Wilderness Act. This impact would be reduced to no impact through avoidance.

Without substantially increasing impacts to other issue areas, the environmentally superior alternative would, also under CEQA, avoid significant and unavoidable (Class I) impacts to the Inaja Scenic Overlook (Impact VIS-1) by removing TL626 from service; reduce impacts due to erosion and water quality impacts (Impact HYD-4 associated with maintenance and use of steep access roads) to less than significant with mitigation (Class II), and avoid significant land use impacts (Class II) LU-3 impacts associated with TL626 conflicts with the Forest Service LMP.

While the environmentally superior alternative would reduce the proposed reconstruction of existing power lines by approximately 5 miles, it would still under CEQA result in Class I significant and unavoidable **s**hort-term construction VOC, NOx, and dust emissions (Impact AIR-1).

ES.7 Federal Preferred Alternative

The federal preferred alternative is the alternative that the federal agencies believe would fulfill their statutory mission and responsibilities, giving consideration to economic, environmental, technical, and other factors. There is no requirement for the federal agencies to select the preferred alternative in the Record of Decision, and the identification of the federal preferred alternative may change between a draft EIS and final EIS. Identifying the federal preferred alternative in the draft helps identify the agencies initial thinking and serves to focus public review of the analysis.

Although the Forest Service is the lead federal agency, all three federal agencies (the Forest Service, BLM, and BIA) have independent authority within their areas of jurisdiction. Given that independent authority, and the interrelated nature of the action, the federal preferred alternative was developed jointly between the three federal agencies.

The federal preferred alternative is a composite of three alternatives. The federal proposed action is the basis of the preferred alternative; however, the TL626 relocation option has been replaced by the TL626 removal from service option, Option 1 (upgrade to TL6931), combined with the off-grid system replacing the load served by the Boulder Creek Substation. The federal preferred alternative also incorporates the portions of the partial removal of overland access road alternative applicable to TL625, C442, and TL629. All other components of the federal proposed actions remain the same.

The preferred alternative also adopts SDG&E's APMs and the additional mitigation measures identified in this EIR/EIS.

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
Visual Resources (see Section D.2 for full analysis)								
VIS-1: Scenic Vista: (Class I TL626 - Inaja Scenic Overlook - all others Class III)	Options 1, 2, 3, and 4: Class I Inaja Scenic Overlook Option 5: reduced to no impact	Class III	Class III	Class III	Class III	Class III	MM VIS-1: Prepare and Implement Scenery Conservation Plan: Coordination with Jurisdictional agencies in final pole design and siting (see Table D.2-11 for further details).	MM VIS-1 mitigates project impact except TL626 as viewed from Inaja Scenic Overlook which remains Class I Selection of Federal Action RE TL626 option 5 or Removal of TL626 avoids this impact
VIS-2: Scenic Highway (Class II C440 all others III)	Class III	Class III	Class III	Class II	Class III	Class II (TL625 loop-in) Class III (TL6931)	No mitigation required	None
VIS-3: Visual Character (Class II limited poles only and all others III)	Options 1 through 4: Class I Option 5 : Class II	Class III	Class III	Class III	Class III	Class II	MM VIS-1	MM VIS-1 mitigates project impact. Federal Action RE TL626 options 1-4 remains adverse and unavoidable

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
VIS-4: Glare/Light (Class III)	Class III	Class III	Class III	Class III	Class III	Class III	No mitigation required	None
VIS-5:Scenic Integrity (Class II TL626, TL629, TL6923, C449, and C157 all others III) VRM (BLM – Class III TL 625, TL629, 6923)	Class II	Class II	Class II	Class III	Class III	Class II (TL625 loop-in) Class III (TL6931)	MM VIS-1 MM VIS-2: A Project Specific Plan Amendment regarding Scenic Integrity Objective per Forest Land Management Plan to allow for the project (see Table D.2-11 for further details).	MM VIS-1 mitigates project impact. Federal Action RE TL626 options 1-4 remains adverse and unavoidable
Air Quality (see Section D.3 for full analysis) and Greenhouse Gas Emissions (see Section D.6 for full analysis)								
AIR-1:Short-term construction-related VOC, NO_x, CO, and $PM_{2.5}$ air emissions (Class I); other short-term air quality impacts (Class II).	Class I	Class I	Class I	Class I	Class I	Class I	Applicant Proposed Measures (APMs) include dust and emission controls. No additional mitigation measures have been identified.	Impacts remain Class I and cannot be mitigated by further reduction measures or selection of an alternative other than the No Project Alternative.
AIR-2: Long-term impacts (Class III).	Class III	Class III	Class III	Class III	Class III	Class III	No mitigation required	None
AIR-3: General Conformity (federal) - not adverse	—	—	—	—	—	—	—	—
AIR-4: Conflict with Land Use Plans (No Impact)	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No mitigation required	None

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
AIR-5: Expose Sensitive Receptors (Class III)	Class III	Class III	Class III	Class III	Class III	Class III	No mitigation required	None
GHG-1 through 3: Result in GHG Emissions or conflict with applicable plan (Class III)	Class III	Class III	Class III	Class III	Class III	Class III	No mitigation required	None
Biological Resources (see Section D.4 for full analysis)								
BIO-1: Vegetation Loss (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM BIO-1: Confine construction areas MM BIO-2 :Contractor Training MM BIO-3: Construction monitoring MM BIO 4: Restore construction areas MM BIO 5: Habitat compensation/ restoration MM BIO 6: Fire prevention BMPs MM BIO 7: Stormwater Pollution Prevention MM BIO 8(a): Herbicide application requirements and (b) Assessment of typical O&M activities, including pole replacement (See Table D.14-16 for further details).	MM BIO-1 through BIO 8 mitigates project impact

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
BIO-2: Loss of Preserve Areas (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM BIO 8(b) and BIO 9: Coordination with Jurisdictional agencies in final pole design and siting (see Table D.14-16 for further details).	MM BIO 9 mitigates project impact
BIO-3: Native Wildlife (Class III)	Class III	Class III	Class III	Class III	Class III	Class III	No mitigation required	None
BIO-4: Jurisdictional Resources (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM BIO 8(b) and BIO 10: Limit impacts to wetlands MM BIO 11: Habitat creation - No net loss of wetlands MM BIO 12: Construction road restrictions (see Table D.14-16 for further details).Also see Hydrology and Water Quality Section D.9 MM HYD-2a, HYD-2b, and MM HYD-4 through HYD-6	MM BIO-10 through BIO 12 and MM HYD-2a, HYD-2b along with MM HYD -4 through HYD-6 mitigates project impact
BIO-5: Invasive Species (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM BIO 1 through BIO 7: (see Table D.14-16 for further details).	MM BIO-1 through BIO 7 mitigates project impact
BIO-6: Candidate, Sensitive, or Special-Status Species (Class II)	Class II	Class II Creates additional impact to USFWS designated	Class II	Class II	Class II	Class II	MM BIO 8(b) and BIO 13 through MM BIO 32: Includes Preconstruction Surveys, Exclusionary Fencing, Final Pole Design and Siting Restrictions, Seasonal Restrictions, Monitoring/Inspection/Enforcement,	MM BIO 8 (b) and BIO-13 through BIO-32 mitigates project impact

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
		arroyo toad habitat					Blasting Restrictions and Compensation (see Table D.14-16 for further details). MM BIO 33 applies to C157 and Arroyo Toad and contains similar requirements listed in MM BIO-13- MM BIO 30.	MM BIO 33 mitigates additional impact to arroyo toad habitat
BIO 7: Conflict with HCP, NCCP or other Conservation Plan (Class III)	Class III	Class II Option1 creates additional impact to City of San Diego conservation lands Option 2 avoids this impact.	Class III	Class III	Class III	Class III	None required	None
BIO 8: Interfere with wildlife movement/corridors (Class III)	Class III	Class III	Class III	Class III	Class III	Class III	None required	None
Cultural and Paleontological Resources (see Section D.5 for full analysis)								
CUL-1: Historical Resources (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM CUL-1 New Pole Siting Restrictions	MM CUL-1 and CUL-2 mitigates project

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
							MM CUL-2 Protection of Historical Resources (see Table D.5-15 for further details).	impact
CUL-2: Archaeological Resources (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM CUL-3 Implement Measures as identified in Cultural Resources Report (see Table D.5-15 for further details).	MM CUL-3 mitigates project impact
CUL-3: Human Remains (Class III)	Class III	Class III	Class III	Class III	Class III	Class III	None Required	None
CUL-4: TCP (Class III)	Options 1, 2, 4, and 5 Class II	Class III	Class III	Class III	Class III	Class III	MM CUL-3 applies only to Federal Proposed Action RE TL626 Options 1,2,4 and 5	None
PALEO-1: Unique Paleontological Resource or Geologic Feature (Class III)	Class III	Class III	Class III	Class III	Class III	Class III	None Required	None
Public Health and Safety (see Section D.7 for full analysis)								
PHS-1 through PHS-3: Hazardous Materials Impacts During Construction (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM PHS-1 and PHS-4:: Contractor Training MM PHS-2: Implement BMPs MM PHS-3 : Compliance with rock blasting requirements (see Tale D.7-2 for further details	None
PHS-4: Flight Operations/Aviation	Options 1,2,4,5:	Class II	Class II	No Impact	Class II	Class II	MM PHS-5: Compliance with FAA requirements	None

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
Hazards (Class II)	Creates additional impact Class II Option 3: Underground portion avoids impact. 1-mile OH portion Class II						MM PHS-6: Helicopter Lift Pan MM PHS-9: Consult with FAA and Fire agencies applies only to alternative overhead alignments (TL 626) (see Tale D.7-2 for further details)	
PHS-5: Emergency Response (Class III)	Class III	Class III	Class III	Class III	Class III	Class III	Applicant Proposed Measures (APMs) include traffic control. No additional mitigation measures have been identified.	None
PHS-6: Structural Failure (Class II)	Options 1,2,4,5 : Class II Option 3: Underground portion avoids impact.	Class II	Class II	Class III	Class II	Class II	MM PHS-7: Geotechnical Investigations MM PHS-8: Inspections (see Tale D.7-2 for further details)	None

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
	(Class II for 1-mile OH portion)							
PHS-7: Shock Hazards (Class III)	Class III	Class III	Class III	Class III	Class III	Class III	None required	None
Fire and Fuels Management (see Section D.8 for full analysis)								
FF-1: Construction, Operation and Maintenance Could Start a Wildfire (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM FF-1 and FF-2: Implement Fire Prevention Plan (see Tale D.8-2 for further details)	None
FF-2: Presence of Transmission Lines Could Start a Fire (Class III)	Options 1,2, 4,5: Class II new overhead lines creates additional impact Option 3: Underground portion avoids impact .1-mile OH Class II	Class III	Class III	No impact)	Class III	Class II TL625 loop-in Class III TL6931	None required	None

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
FF-3: Reduced Firefighter Effectiveness (Class III)	Options 1,2, 4,5: Class II Creates additional impact Option 3: Underground portion avoids impact 1-mile OH Class II	Class II	Class III	No impact	Class III	Class II TL625 loop-in Class III TL6931	None required for proposed project MM PHS-9 Consult with FAA and Fire agencies applies only to alternative overhead alignments (TL 626) (see Tale D.7-2 for further details)	None
FF-4: Introduction of Non-Native Plants (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM FF-2 (Implement Fire Prevention Plan) and MM BIO-4 (Restore all temporary construction areas pursuant to a Habitat Restoration Plan) (see Tables D.8-2 and D.4-16 for further details)	None
Hydrology and Water Quality (see Section D.9 for full analysis)								
HYD-1 and HYD-2: Short-Term Construction Activities Would Degrade Water Resources (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM HYD-1; Erosion Control Plan/Stormwater Pollution Control Plan (see Tale D.9-11 for further details)	None

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
HYD-3: Groundwater Supply (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM HYD 2A :Documentation of purchased water sources MM HYD-2b: Groundwater evaluations. (see Table D.9-11 for further details)	None
HYD-4: Access Roads Access road segments associated with C79, C442, TL625, TL626, and TL629 (Class I). All others (Class II).	Options 1 through 4: Class II (Reduces Class I impacts associated with TL626)	Class II	Class II	No Impact	Class II	No impact (TL625 loop-in – no roads proposed) Class III (TL6931 – no new access roads)	MM HYD-3: Implement Access road decommissioning Best Practices MM HYD-4: Access road evaluation and repair design report (see Table D.9-11 for further details)	Remains Class I for access road segments associated with C79, C442, TL625, TL626, and TL629. All others mitigated. Partial access removal alternative reduces impact to Class II. FS Alternatives to TL626 reduces impact associated with TL626 only to Class II under Options 1-4. Option 5 remains a Class I for TL626.
HYD-5: Maintenance - Vegetation Management, Pesticide, and	Class II	Class II	Class II	No impact	Class II	Class II	MM-HYD-5: Procedural Requirements for Pesticide and Herbicide Applications	None

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
Herbicide Application (Class II)							For C440, C449, and TL 629C: MM-HYD-6: Pesticide Use Prohibition along Cottonwood Creek (see Table D.9-11 for further details)	
Land Use (see Section D.10 for full analysis)								
LU-1:Temporary Disturbance Due to Construction (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM LU-1: Construction Notification Plan (see Table D.10-10 for further details)	None
LU-2:Divide an Established Community (No Impact)	Class II	No Impact	No Impact	No Impact	No Impact	No Impact	MM LU-3 Revise project elements to minimize land use conflicts. Applies only to Forest Service alternatives for TL 626 (see Table D.10-10 for further details)	None
LU- 3: Conflict with Applicable Land Use Plan: C157 (Class I), TL626 and C442 (Class II), all others Class III	Options 1-5: Class II	Option 1: Class II. Option 2: Class III (both options reduce Class I impacts associated with C157 in wilderness; option 2 removes it	Class III	Class III	Class III	Avoids Class II impacts associated with TL626 reduces to Class III	MM LU-2: Project-specific amendment to Forest Service LMP to provide an exception for and allow rebuild/fire hardening of existing TL626 (see Table D.10-10 for further details) For Federal Action RE TL626 Options 3 and 4; and C440 MM-LU-4: Encroachment Permit from County of San Diego	None with the exception of LU-3 impacts associated with C157 determined to be Class I. Selection of Federal Proposed Action RE C157 mitigates this impact.

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
		from City of San Diego planned conservation area)					(see Table D.10-10 for further details)	
Noise (see Section D.11 for full analysis)								
NOI-1 and NOI-2: Construction Noise (Class II)	Class II	Class II	Class II	Class II	Class II	Class II	MM NOI-1: Implement noise reduction measures during construction MM NOI-2:Notification of helicopter use MM NOI-3: Blasting Plan MM NOI-4: Notification of any work outside allowable construction hours (see Table D.11-9 for further details)	None
NOI-3 and NOI-4: Corona Noise/Long-Term Impacts (Class III).	Class III	Class III	Class III	No Impact	Class III	Class III	None required	None
Public Services and Utilities (see Section D.12 for full analysis)								
PSU-1: Effects on Fire, Water Supply, and Telecommunications - (Class II).	Class II	Class II	Class II	Class II	Class II	Class II	MM HYD-2a: Documentation of purchased water sources MM PSU-1 AT&T commitments to co - locate facilities with proposed power line replacement projects. (see Tables D.9-11 and D.12-3 for further details)	None

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
PSU-2: and PSU-3: Solid Waste Disposal Facilities and Disruption of Electrical Service (Class III).	Class III	Class III	Class III	Class III	Class III	Class III	None required.	None
Recreation (see Section D.13 for full analysis)								
REC-1: Reduce Access During Construction - Temporary construction impacts to access to recreation and wilderness areas would be adverse but mitigable (Class II – TL682, TL626, TL625, TL629, TL6923, C79, and C157; all others are Class III)	Options I -4: Class III Option 5: Class II	Class III	Class II	Class II	Class III	Class III	MM LU-1: Construction Notification Plan (see Table D.10-10 for further details)	None
REC-2: Project Components Reduce Access to Recreation Areas (Class III)	Class III	Class III	Class III	Class III	Class III	Class III	None required	None

Table ES-1
Comparison of CEQA Impacts and Mitigation for SDG&E's Proposed Project, Federal Proposed Actions, and Other Alternatives*

SDG&E's Proposed Project Impact	Federal Proposed Actions				Other Alternatives		Mitigation Measures	Residual Impacts
	TL626	*C157*	*BIA*	*C440*	*Partial Removal of Overland Access Roads*	*Remove TL626*		
REC-3: Unauthorized Access (Class II)	Options 1, 2 and 5: Class II Options 3 and 4: No Impact	No Impact	No Impact	No Impact	Class II	No impacts	MM REC-1 : Installation of gates and signage MM REC-2: Enforcement of restricted areas.	None
Transportation and Traffic (see Section D.14 for full analysis)								
TRANS-1 through TRANS-5: Short-term construction activities to transportation facilities, traffic and roadways (Class III).	Options 1, 2, 4, and 5: Class III Option 3: Class II	Class III	Class III	Class II	Class III	Class III	MM-LU-5: Encroachment Permit from County of San Diego applies only to Federal Proposed Action RE TL626 Option 3 and C440 (see Table D.10-10 for further details)	None

Note: Comparison of the No Action and No Project Alternatives within the Executive Summary is discussed in Section ES.5.4 and ES 5.5

A. INTRODUCTION/OVERVIEW

This section provides a general introduction (Section A.1), project background (Section A.2), project overview (Section A.3), purpose and need as it applies to the federal agencies and tribal lands (Section A.4), project objectives (Section A.5), and agency use of this joint Environmental Impact Report/Environmental Impact Statement (EIR/EIS) (Section A.6). The organization and content of the EIR/EIS is provided in Section A.7, and references cited are listed in Section A.8.

A.1 Introduction

San Diego Gas & Electric Company's (SDG&E or applicant) proposed project would include issuance of a Master Special Use Permit (MSUP) for the SDG&E system in the Cleveland National Forest (CNF), and would replace/fire harden select lines within the SDG&E system both on and off the CNF.

SDG&E is proposing to combine over 70 individual use permits and easements for SDG&E electric facilities within the (CNF into one MSUP to be issued by the United States Forest Service (Forest Service). In addition, SDG&E is proposing to replace certain electric power lines located within and outside the CNF. Replacement would primarily include fire hardening (wood-to-steel pole replacement), relocation, and undergrounding. The proposed power line replacement projects will require authorization under the MSUP, as well as approval from the California Public Utilities Commission (CPUC).

The CNF MSUP study area is located within multiple locations within the Trabuco, Palomar, and Descanso ranger districts of the CNF, Orange and San Diego Counties, California. The proposed power line replacement projects are located within and outside the Palomar and Descanso ranger districts of the CNF in the vicinity of the unincorporated communities of Alpine, Boulevard, Pine Valley, Descanso, Campo, Pauma Valley, Santa Ysabel, Julian, and Warner Springs within the central portion of San Diego County. SDG&E's proposed power line replacement projects not only traverses National Forest System lands, but due to the patchwork of land ownership in the project study area, also traverses lands managed by the Bureau of Land Management (BLM); tribal lands of the La Jolla, Campo, Inaja/Cosmit, and Viejas Indian Reservations managed by the respective tribes and held in trust by the Bureau of Indian Affairs (BIA); Cuyamaca Rancho State Park lands managed by California State Parks (CSP); lands under the jurisdiction of the City of San Diego, and private holdings within unincorporated San Diego County.

Approval of the MSUP would allow for the continued operation and maintenance of SDG&E electric facilities within the CNF and authorize the replacement of certain existing power lines on and adjacent to CNF lands. MSUP approval is being requested by SDG&E because the existing authorizations within the CNF are expired, and the existing power lines are needed to supply

power to local communities, residences, and government-owned facilities located within and adjacent to the CNF.

SDG&E filed a Standard Form (SF) 299 Application for Transportation and Utility Systems and Facilities on Federal Lands along with a Plan of Development (SDG&E 2013a) with the Forest Service to initiate this action and has filed an application (A.12-10-009) for a Permit to Construct (PTC) the proposed project with the CPUC. The CPUC and Forest Service have independent jurisdiction and approval authority for the project. The CPUC is the lead agency under the California Environmental Quality Act (CEQA), and the Forest Service is the lead federal agency under the National Environmental Policy Act (NEPA). The CPUC and Forest Service have prepared this joint EIR/EIS for the proposed Master Special Use Permit and Permit to Construct (MSUP/PTC) Power Line Replacement Projects (SDG&E's proposed project) in compliance with CEQA and NEPA. The BIA and BLM are joining the Forest Service as federal cooperating agencies under NEPA, and the CSP is participating as a responsible agency under CEQA. The purpose of the EIR/EIS is to disclose the environmental impacts expected to result from construction and operation of SDG&E's proposed project and provide mitigation measures, which, if adopted, would avoid or minimize those environmental impacts as well as identify alternatives to SDG&E's proposed project (including the No Project/No Action Alternative) that could avoid or minimize significant environmental impacts. This EIR/EIS does not make recommendation regarding the approval or denial of the project; it is purely information in content and has been prepared to inform the public and to meet the needs of federal, state, and local permitting agencies in considering SDG&E's proposed project as described in Section A.6.

The content of this EIR/EIS reflects input received from government officials, agencies, non-governmental organizations, and concerned members of the public during the EIR/EIS scoping period (see Table A-1 for a list of issues to be addressed in the EIR/EIS). The scoping period followed the CPUC's publication of the Notice of Preparation (NOP) of an EIR (September 23, 2013) and the Forest Service's publication of the Notice of Intent (NOI) to prepare an EIS in the Federal Register (September 23, 2013). During this comment period, several public involvement activities were completed: public distribution of the NOP, NOI, and a scoping meeting notice; establishment of an Internet web page; two public scoping meetings; and meetings with a number of the affected local jurisdictions (see details in Section I of this EIR/EIS). Consultation with agencies also continued after the formal scoping period ended. The issues evaluated in this EIR/EIS were derived from comments made during the scoping period as summarized in Table A-1 and in Section I of this EIR/EIS and presented in the Public Scoping Report prepared for SDG&E's proposed project and issued on January 16, 2014. The Scoping Report is posted on the project website at: http://www.cpuc.ca.gov/environment/info/dudek/CNF/CNF.htm.

Following the formal scoping period (September 23 – November 7, 2013), the CPUC and Forest Service provided a supplemental 45-day scoping period (January 21 – March 7, 2014) to provide

the public with an additional opportunity to comment on the topics and alternatives to be addressed in the EIR/EIS. In addition, during this supplemental scoping period, public involvement activities completed included publishing legal notices in four local newspapers, posting public notices at local planning group meeting venues and on community boards at local post offices throughout the project study area, and holding a supplemental scoping meeting.

Table A-1
EIR/EIS Issues to be Addressed

Environmental Issue Area/ EIR/EIS Section	Potential Issues or Impacts
Aesthetics/Visual Resources Section D.2	• Construction-related activities would result in the temporary degradation of existing visual character and quality in the project study area, including scenic vistas and other designated scenic resources. • Nighttime construction lighting may be used during project construction that could affect th nighttime view. • There may be potential conflicts associated with proposed wood to steel pole replacement with federal, state, and local plans; regulations; or standards applicable to the protection of visual resources. • Yellow striping on new steel poles and use of reflective conductors could affect the visual character of the project area. • Lighting on taller steel poles and use of colored balls on conductors, if required, could affect the visual character of the project area.
Air Quality Section D.3	• Project construction will produce short-term air emissions (fugitive dust and vehicle equipment exhaust) and may violate air quality standards during construction.
Biological Resources Section D.4	• Project construction and vegetation management activities could result in temporary and permanent loss of native wildlife and/or their habitat. • Loss of habitat for sensitive species designated by state and federal resource agencies. • Conflict with federal, state, or local policies or ordinances protecting biological resources. • Project construction, including use of helicopters, could impact eagles on federal and non-federal lands. • Project construction and maintenance could result in impacts to jurisdictional wetlands. • Project construction and maintenance could result in the spread of invasive species. • Lighting if used on steel poles could affect wildlife in project area. • Heavy equipment could damage root systems of older trees along alignment. • Project construction could exceed take acreage allotted in the 1995 SDG&E NCCP.
Cultural and Paleontological Resources Section D.5	• Construction and operation could damage or destroy historic and archaeological sites, traditional cultural properties, or areas containing paleontological resources. • Temporary use of staging areas and conductor pull sites could damage or destroy historic and archaeological sites, traditional cultural properties, or areas containing paleontological resources.
Greenhouse Gas Emissions Section D.6	• Construction activities would result in greenhouse gas emissions.
Hazards, Hazardous Materials, Section D.7 (Public Health)	• Leaking or spilling of petroleum or hydraulic fluids from construction equipment or other vehicles during project construction, operation, or maintenance could contaminate soils, surface waters, or groundwater. • Wind speeds in the project area may exceed normal design standards. • Wind speeds exceed rating of pole/conductors. • Harmonic rocking of lines during high winds could lead to failure/fire risk.

Table A-1
EIR/EIS Issues to be Addressed

Environmental Issue Area/ EIR/EIS Section	Potential Issues or Impacts
	• Steel towers may not perform well to high temperatures during wild fire, and may be more susceptible to lightning.
Fire D.8 (Fire and Fuels Management)	• Fire hazard during construction and operation. • Doubling circuits on certain transmission lines can increase fire risk. • Constructing power lines in areas designated as wilderness could increase fire risk.
Hydrology and Water Quality Section D.9	• Project construction and operation and maintenance, particularly use of steep access roads, could affect surface water flow and erosion rates causing subsequent downstream sedimentation and reduced surface water quality. • Water used for project construction and maintenance could impact local groundwater.
Land Use and Planning Section D.10	• Construction would temporarily disturb ongoing or traditional land uses within the project study area. • Possible conflicts with pending land management plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. • Construction or operation could cause conflicts with the Wilderness Act of 1964.
Noise Section D.11	• Project construction will produce short-term noise (from helicopters, vehicles and construction equipment) and may violate noise standards during construction. • Location of fly yards and associated helicopter use may impact communities away from the project area.
Public Services and Utilities Section D.12	• Construction activities could result in increased generation of waste and disposal needs. • Fire and emergency services may be required to service SDG&E's proposed project and project study area during construction and operation. • Construction may result in temporary loss of electrical service to remote communities. • Telecommunication services in the project area could be disrupted. • Water used for project construction and maintenance could impact local water supplies.
Recreation Section D.13	• Construction or operation could cause conflicts with ongoing or traditional recreation uses in the project study area. • Access roads could increase vehicle trespass into areas where vehicles are not authorized.
Transportation and Traffic Section D.14	• Traffic would be generated by construction worker commute trips and equipment deliveries. Hauling materials, such as poles, concrete, conductor, and excavation spoils, would temporarily increase existing traffic volumes in the project study area.
Electro Magnetic Fields Section D.15	• Public health risks due to EMF.
Growth-Inducing Effects Section G.1	• Increasing conductor size may increase system capacity, inducing growth in local generation. • Doubling circuits on certain transmission lines may increase system capacity and induce growth in local generation.
Socioeconomics/Environmental Justice Section G.5	• The relocation of certain transmission facilities may result in social and economic effects as well as have disproportionally high or adverse effects on minority or low-income populations.

A.2 Background

In 2005, in consultation with the Forest Service, SDG&E submitted an initial application to obtain an MSUP. The purpose of the MSUP was to consolidate SDG&E's rights and responsibilities in connection with the continued operation of its electric lines and other existing facilities located within the CNF. As part of the NEPA review process, the Forest Service circulated an Environmental Assessment (EA) for public comment in 2009. In response to public comments received on that EA, the Forest Service determined that additional fire risk reduction measures within the CNF (including fire hardening) and additional undergrounding should be evaluated as part of the MSUP review process. SDG&E has expanded the scope of the proposed MSUP to include fire hardening, undergrounding, and relocation as proposed in the power line replacement projects.

A.3 Project Overview

The proposed MSUP/PTC Power Line Replacement Projects are detailed in Section B, Project Description, of this EIR/EIS. As discussed previously in Section A.1, approval of the MSUP/PTC Power Line Replacement Projects would authorize the continued operation and maintenance of SDG&E electric facilities within the CNF through issuance of the MSUP and authorize the replacement of certain existing power lines on and outside of CNF lands through issuance of the MSUP and PTC. The following provides an overview of the proposed power line replacement projects.

A.3.1 Applicant's Proposed Power Line Replacement Projects

SDG&E proposes to replace the following five 69-kilovolt (kV) transmission lines (TL) and six 12 kV distribution circuits (C):

- TL682 is approximately 20.2 miles in total length and generally runs from Rincon Substation east to Warners Substation. Proposed replacement includes wood-to-steel pole conversion.
- TL626 is approximately 18.8 miles in total length and generally runs from Santa Ysabel Substation south to Descanso Substation. Proposed replacement includes wood-to-steel pole conversion.
- TL625 is approximately 22.5 miles in total length and generally runs from Loveland Substation east to Barrett Tap, from Barrett Tap east to Descanso Substation, and from Barrett Tap south to Barrett Substation. Proposed replacement includes wood-to-steel pole conversion along with single circuit to double circuit conversion.
- TL629 is approximately 29.8 miles in total length and generally runs from Descanso Substation east to Glencliff Substation, from Glencliff Substation southeast to Cameron Tap, from Cameron Tap south to Cameron Substation, and from Cameron Tap east to Crestwood

Substation. Proposed replacement includes wood-to-steel pole conversion, undergrounding, and single to double circuit conversion.

- TL6923 is approximately 13.4 miles in total length and generally runs from Barrett Substation east to Cameron Substation. Proposed replacement includes wood-to-steel pole conversion.
- C79 is approximately 2.2 miles in total length and generally runs from Boulder Creek Road east to the Cuyamaca Peak communication site. Proposed replacement includes removal of existing overhead line and replacement with new undergrounding.
- C78 is approximately 1.8 miles in total length and generally runs from east of Viejas Reservation, east along Viejas Grade Road, to Via Arturo Road. Proposed replacement includes wood-to-steel pole conversion and overhead relocation.
- C157 is approximately 3.5 miles in total length and generally runs from Skye Valley Road, near Lyons Valley Road, east to Skye Valley Ranch. Proposed replacement includes wood-to-steel pole conversion. The applicant's proposal includes replacement and motorized use in the congressionally designated Hauser Wilderness. This aspect of the applicant's proposal conflicts with the requirements of the Wilderness Act.
- C442 is approximately 6.2 miles in total length and generally runs south from Pine Valley Road to Los Pinos Peak Forest Station and along Pine Creek Road south toward the community of Pine Valley. Proposed replacement includes wood-to-steel pole conversion.
- C440 is approximately 24.0 miles in total length and generally runs from Glencliff Substation northeast to Mount Laguna along Sunrise Highway. Proposed replacement includes wood-to-steel pole conversion with some line removal, undergrounding, and overhead relocation.
- C449 is approximately 6.7 miles in total length and generally runs from Old Highway 80 south along Buckman Springs Road to Oak Drive and southwest along Morena Stokes Valley Road to Camp Morena. Proposed replacement includes wood-to-steel pole conversion with some line removal and undergrounding.

The applicant also proposes to install appurtenant facilities on poles and within the right-of-way (ROW) as needed to manage the power line system. These appurtenances may include electrical switches, smart grid control devices, weather stations, and surveillance cameras.

A.3.2 Federal Proposed Action

The federal proposed action includes the Forest Service, BIA and BLM proposed actions.

The Forest Service reviewed and accepted the application for an MSUP with modifications to certain actions on National Forest System lands. This modified proposal includes the Forest Service proposed action, which, as described in Section B.3.2 of this EIR/EIS, modifies the applicant's proposed project along TL626, C157, and C440 and the BIA proposed action, which modifies the applicant's proposed project along TL682. In addition, the Forest Service proposes to authorize electrical control devices and weather stations not otherwise specified in the permit, subject to Forest Service review and approval of final design and location. The Forest Service is not proposing to authorize surveillance cameras on National Forest System lands.

The BLM action does not modify SDG&E's proposed project and includes portions of SDG&E's proposed power line replacement projects for TL629, TL625, and TL6923.

A.4 Purpose and Need

A.4.1 Forest Service Purpose and Need

The Forest Service purpose is to authorize the power lines and associated facilities needed to continue electric service to a variety of users within and adjacent to the CNF through an MSUP in a manner that is consistent with the CNF Land Management Plan (LMP). This action is needed because the 70 individual permits or easements for the existing facilities have expired, and a permit is required for the continued occupancy and use of National Forest System lands. Further, the purpose of this action is to reduce fire risk associated with the existing facilities in a high fire hazard area through fire hardening of facilities in the CNF. This action is needed for resource protection as well as public safety.

Permits issued by the Forest Service are required by law to be consistent with the LMP. The LMP identifies suitable uses within various land use zones, describes desired conditions based on the LMP goals and objectives, and sets resource management standards. The Forest Service proposed action is designed to be consistent with the LMP requirements. The Forest Service purpose and need will guide the development of alternatives considered on National Forest System lands.

A.4.2 BLM Purpose and Need

The BLM purpose is to authorize the power lines and associated facilities needed to continue electric service to a variety of users within and adjacent to the National System of Public Lands in a manner that is consistent with the South Coast Resource Area Plan. This action is needed because ROW grants for the existing facilities have expired or were never issued, and a ROW grant is required for the continued occupancy and use of Public Lands.

A.4.3 BIA Purpose and Need

The BIA purpose is to authorize the power lines and associated upgrades needed to continue electric service to a variety of users within and adjacent to the Indian trust lands in a manner that is consistent with tribal land use goals and policies. The action is needed to amend the existing easements to include the proposed fire hardening measures and locations, and to extend their term.

A.5 Project Objectives

A.5.1 Applicant's Objectives

According to SDG&E, the objectives of the MSUP and PTC are to (1) secure Forest Service authorization to continue to operate and maintain existing SDG&E facilities within the National Forest System lands and (2) increase fire safety and service reliability of these facilities by replacing five existing 69 kV power line facilities and six existing 12 kV distribution facilities. SDG&E's objectives also include undertaking these activities consistent with CPUC General Orders, North American Electric Reliability Corporation/Federal Energy Regulatory Commission requirements, and SDG&E standards; and minimizing potential environmental impacts by locating facilities within previously disturbed areas where feasible.

A.5.2 CPUC Project Objectives

CEQA Guidelines (Section 15124[b]) requires that an EIR provide a statement of objectives sought by the proposed project that will assist the lead agency in developing a reasonable range of alternatives. In addition, CEQA Guidelines (Section 15126.6) requires that project objectives be set forth in an EIR to help define alternatives to the proposed project that meet most of the basic project objectives. Having taken into consideration the project objectives set forth by SDG&E for the MSUP/PTC Power Line Replacement Projects, the CPUC has identified the following basic project objectives that will be used to guide development of alternatives considered for SDG&E's proposed project:

- Reduce fire risk by fire hardening electric facilities in and around the CNF.
- Improve the reliability of power delivery to surrounding communities.

A.6 Agency Use of this Document and Permits Required

A.6.1 Forest Service Decision Framework

The Forest Service is the federal lead agency for the preparation of this EIR/EIS in accordance with the Council on Environmental Quality regulations for implementing the National Environmental Policy Act at 40 Code of Federal Regulations (CFR) 1501.5. Using the analysis

in the EIS and supporting documentation, the forest supervisor will make the following decision regarding National Forest System lands:

- Whether or not to issue a Master Special Use Permit authorizing the continued occupancy and use of National Forest System lands for the purposes of transmission and distribution of electric energy and fire hardening facilities, and if so, under what conditions.

Following issuance of the Draft EIR/EIS, comments will be accepted that will be considered in preparing a Final EIR/EIS. Following or concurrent with issuance of the Final EIR/EIS, the forest supervisor will issue a Draft Record of Decision (Draft ROD). The Draft ROD may contain changes or additions to the MSUP to reduce or eliminate adverse environmental impacts from the proposed projects on National Forest System lands.

This project will follow the predecisional administrative review process pursuant to 36 CFR 218, Subparts A and B. Only those who submit timely project-specific written comments during a public comment period are eligible to file an objection. Individuals or representatives of an entity submitting comments must sign the comments or verify identity upon request.

A.6.2 CPUC

Pursuant to Article XII of the Constitution of the State of California, the CPUC is charged with the regulation of investor-owned public utilities, including SDG&E. The CPUC is the lead state agency for CEQA compliance in evaluation of SDG&E's proposed power line replacement projects and, along with Forest Service, has directed the preparation of this EIR/EIS. In this role, the CPUC is responsible for compliance with CEQA and for coordinating with other state and local agencies that will use this EIR/EIS in their permitting processes.

This EIR/EIS will be used by the CPUC, in conjunction with other information developed in the CPUC's formal record, to act only on SDG&E's application for a PTC to construct and operate the proposed power line replacement projects. Under CEQA requirements, the CPUC will determine the adequacy of the Final EIR/EIS and, if adequate, will certify the document as complying with CEQA and make a final decision approving or disapproving the PTC for the power line replacement projects.

A.6.3 Responsible/Cooperating Agencies

Because portions of SDG&E's proposed project would occur on lands under the jurisdiction of CSP (which, in accordance with CEQA, will act as a responsible agency) and the BLM and BIA (which, in accordance with NEPA, are federal cooperating agencies), these agencies, as well as the La Jolla, Inaja/Cosmit, Viejas, and Campo Indian reservations, may also use the EIR/EIS for their permitting processes. Table A-2 lists agency jurisdiction by each proposed project.

Table A-2
Proposed Power Line Replacement Projects Agency Jurisdiction

Proposed Project Component	Jurisdiction	Number of Miles under Jurisdiction*
TL682	CPUC	15.6
	CNF	1.32
	Tribal (La Jolla and Pauma-Yuima Indian Reservations)	3.24
TL626	CPUC	10.79
	CNF	7.99
TL625	CPUC	16.16
	CNF	6.26
	BLM	0.05
TL629	CPUC	29.75
	CNF	8.95
	Tribal (Campo Indian Reservation)	0.56
	BLM	0.71
TL6923	CPUC	7.01
	CNF	3.17
	BLM	3.22
C79	CNF	1.85 (removal)
	CSP	0.38 (removal) 2.84 (underground)
C78	CPUC	0.02 (removal) 0.21 (reconductor)
	CNF	1.41 (removal) 1.81 (reconductor)
	Tribal (Viejas Indian Reservation)	0.06 (reconductor)
C157	CPUC	1.80 (reconductor)
	CNF	1.71 (reconductor)
C442	CPUC	2.52 (reconductor)
	CNF	3.67 (reconductor)
C440	CPUC	1.38 (removal) 4.09 (underground) 5.08 (reconductor)
	CNF	5.76 (removal) 4.26 (underground) 11.88 (reconductor))
	State	0.09 (reconductor)
C449	CPUC	0.7 (removal) 0.23 (underground) 0.58 (reconductor)
	CNF	4.93 (removal) 0.39 (underground) 1.72 (reconductor)

Source: SDG&E 2013b

***Note:** Mileage under CPUC can include areas within the City/County of San Diego, school/water districts, and/or private lands.

A.6.4 Consultation with other Agencies

The Forest Service, BIA, and BLM have statutory consultation requirements for endangered species and historic properties that must be completed before taking action on the SDG&E application. The Forest Service, as lead agency, must also file the Draft and Final EIS with the Environmental Protection Agency. Table A-3 lists the required consultation.

Table A-3
Federal Agency Statutory Consultation Requirements

Agency	Jurisdiction	Permit Regulatory Requirement
Advisory Council on Historic Preservation	National Historic Preservation Act	National Historic Preservation Act, Section 106 Consultation
State Historic Preservation Officer	National Historic Preservation Act	•National Historic Preservation Act, Section 106 Consultation
U.S. Fish and Wildlife Service	Endangered Species Act, 16 U.S.C. 1531–1544; Migratory Bird Treaty Act; Bald and Golden Eagle Protection Act; Fish and Wildlife Coordination Act	Section 7 Consultation Consultation (Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act).
U.S. Environmental Protection Agency	NEPA	Filing EIS with EPA for review

A.6.5 SDG&E Permit Requirements

As listed in Table A-3, several other state and federal agencies may rely on information in this EIR/EIS to inform them in their decisions regarding issuance of specific permits related to project construction or operation. In addition to the CPUC and CSP, state agencies such as the Department of Transportation, California Department of Fish and Wildlife, Regional Water Quality Control Board, and the Office of Historic Preservation would be involved in reviewing and/or approving SDG&E's activities associated with the proposed project. In addition to the Forest Service, BLM, and the BIA, the U.S. Fish and Wildlife Service (USFWS) and U.S. Army Corps of Engineers (ACOE) are also federal agencies with potential reviewing and/or permitting authority.

SDG&E is responsible for obtaining any permits necessary for their activities. Table A-4 lists the federal, state, and local permits and authorizations required by SDG&E for the proposed project prior to construction. Section G.6 lists all applicable federal environmental regulations and policies.

Table A-4
Permits or Other Actions Required by SDG&E Prior to Construction

Agency	Jurisdiction	Permit Regulatory Requirement
Federal		
U.S. Forest Service	Federal Land Policy and Management Act (FLPMA), 43 U.S.C. 1701 et seq.	• FS 2700-4 Special Use Permit
U.S. Fish and Wildlife Service	Endangered Species Act, 16 U.S.C. 1531–1544; Migratory Bird Treaty Act; Bald and Golden Eagle Protection Act; Fish and Wildlife Coordination Act	• Section 10 Incidental Take Permits • Bald and Golden Eagle Protection Act Take Permits.
Bureau of Land Management	FLPMA, 43 U.S.C. 1701 et seq.	• ROW Grant
Bureau of Indian Affairs	25 USC 323 (the Act of February 5, 1948 (PL 407))	• ROW Grant
Army Corps of Engineers	Clean Water Act	• Clean Water Act Section 404 Nationwide Permit or Individual permit
Federal Aviation Administration	Helicopter Flights	• Helicopter Lift Plan • Form 7460-1.
State		
California Public Utilities Commission	Transmission, substation, generation projects 50 kV to 200kV	• Permit to Construct.
California Department of Fish and Wildlife	Manage fish, wildlife, plant resources, and habitats; California Endangered Species Act, California Native Plant Protection Act, California Fish and Game Code Section 1601	• Streambed Alteration 1601 Permit
California Department of Transportation	California streets and highways Code 660-711.21 CCR 1411.1-1411.6	• Encroachment Permits • Traffic Control Plans.
California Department of Toxic Substances Control	Hazardous Waste Control Act of 1972	• Environmental Protection Agency (EPA) Hazardous Waste Generator ID • 90 days Treatment, Storage, and Disposal Permit • Hazardous Material Business Plan
California Office of Historic Preservation	Potential to affect cultural or paleontological resources	• National Historic Preservation Act, Section 106 Consultation
Regional Water Quality Control Board, Region 7 (Colorado River) and Region 9 (San Diego)	Clean Water Act, Sections 401 and 402; Porter-Cologne Water Quality Control Act; California Water Code Division 7. Water Quality	• 401 Certification • Stormwater Construction General Permit 2009-0009-DWQ (National Pollutant Discharge Elimination System Permit)
California Department of Forestry and Fire Protection	Public Resource Code 4125-4128, and CCR Title 14 Division 1.5 Chapter 7, Subchapter 2, Articles 1–5	• Concurrence with Fire District approval of project Fire Protection Plan
Local		
City of San Diego	Alignment easements	• Amend existing easement documents or issue new easements, as needed

Table A-4
Permits or Other Actions Required by SDG&E Prior to Construction

Agency	Jurisdiction	Permit Regulatory Requirement
San Diego County	County roads and highways	• Road/Highway Encroachment Permit
San Diego County Air Pollution Control District (SDCAPCD)	SDAPCD Regulation II, Rule 10.	• Authority to Construct and Permit to Operate
San Diego County Environmental Health Services	Health and Safety Code Chapter 6.95	• Hazardous Materials Business Plan • Hazardous Materials Inventory.
San Diego Rural Fire Districts	Fire Protection	• Fire District Approval • Fire Service Agreement.

A.7 Reader's Guide to EIR/EIS

A.7.1 Incorporation by Reference

The following document has been used in preparing this EIR/EIS and is hereby incorporated by reference.

San Diego Gas & Electric Company Master Special Use Permit Cleveland National Forest, Orange and San Diego Counties, California – Revised Plan of Development, April 2013. SDG&E's Revised Plan of Development (POD; SDG&E 2013a) submitted to the Forest Service in support of SF 299 Application for Transportation and Utility Systems and Facilities on Federal Lands and submitted to the CPUC in support of SDG&E's amended Permit to Construct (PTC) application A.12-10-009 contains certain information that is incorporated by reference in some sections of this EIR/EIS. This document is available for public review via the Internet at the CPUC website: http://www.cpuc.ca.gov/environment/info/dudek/CNF/POD.htm.

A.7.2 EIR/EIS Organization

This EIR/EIS is organized as follows. Note that all figures referenced in this EIR/EIS are located at the end of each section.

Executive Summary. A summary description of SDG&E's proposed project, the alternatives, their respective environmental impacts, and the Environmentally Superior (CEQA) and Agency Preferred (NEPA) Alternative.

Section A (Introduction/Overview). A discussion of the background, an overview of SDG&E's proposed project, purpose and need, project objectives, and a discussion of the public agency use of the EIR/EIS.

Section B (Project Description). Detailed description of SDG&E's proposed project and federal proposed action, which modifies certain components of SDG&E's proposed project.

Section C (Alternatives). Description of the alternatives evaluation process. Provides description of alternatives considered but eliminated from further analysis and the rationale thereof, and description of the alternatives fully analyzed in this EIR/EIS.

Section D (Environmental Analysis: Proposed Power Line Replacement Projects including Alternatives). A comprehensive analysis and assessment of impacts and mitigation measures for SDG&E's proposed project and alternatives, including the No Project and No Action Alternatives. This section is divided into 13 environmental issue areas (e.g., aesthetics, air quality, biological resources) that contain the environmental settings/affected environments and effects of SDG&E's proposed project and each alternative. In addition, each section provides applicable regulations, plans, and standards. A mitigation monitoring, compliance, and reporting summary table is provided at the end of each issue area analysis.

Section E (Comparison of Alternatives). An analysis of the relative advantages and disadvantages of SDG&E's proposed project in comparison with the alternatives evaluated and identification of both the CEQA "Environmentally Superior Alternative" and the NEPA "Agency Preferred Alternative." Consistent with Section 15126.6 of the CEQA Guidelines, the alternatives analysis includes "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" (14 CCR 15000 et seq.). Similarly, consistent with CEQ's NEPA Regulations (40 CFR 1502.14), the environmental impacts of SDG&E's proposed project and alternatives are provided in comparative form, defining the issues and providing a clear basis for choice by decision makers. Ultimately, the analysis includes identification of the CEQA "Environmentally Superior Alternative," consistent with CEQA Guidelines, Section 15126.6(e)(2), and the NEPA "Environmentally Preferred Alternative" consistent with the Forest Service NEPA Handbook, Section 23.3 (Forest Service 2011).

Section F (Cumulative Scenario and Impacts). A discussion of the cumulative scenario and impacts of past, present, and reasonably foreseeable projects in the project vicinity.

Section G (Required CEQA/NEPA Topics). A discussion of topics required by CEQA and NEPA, including growth-inducing effects, irreversible and irretrievable commitment of resources and environmental changes, adverse unavoidable impacts (Class I) identified in Sections D.2 through D.14, relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity, effects not found to be significant, and compliance with applicable federal environmental regulations and policies.

Section H (Mitigation Monitoring and Reporting). A discussion of the mitigation monitoring and reporting program requirements for SDG&E's proposed project as identified in this EIR/EIS.

Section I (Public Participation). A brief description of the public participation program for this EIR/EIS as well as issues to be resolved.

Section J (Report Preparation). A listing of individuals who contributed to the preparation of this EIR/EIS.

A.8 References

14 CCR 15000–15387 and Appendix A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

40 CFR 1500–1508. Protection of Environment; Chapter V: Council on Environmental Quality.

Forest Service (U.S. Forest Service). 2011. *National Environmental Policy Act Handbook*. FSH 1909-15.

SDG&E (San Diego Gas & Electric Company). 2013a. *Master Special Use Permit, Cleveland National Forest, Orange and San Diego Counties, California, Revised Plan of Development.* Prepared by Insignia Environmental. Encinitas, California: Insignia Environmental. April 2013. http://www.cpuc.ca.gov/environment/info/dudek/CNF/DR3Response.htm

SDG&E. 2013b. SDG&E 04/19/13 Response A. 12-10-009 Cleveland National Forest Power Line Replacement Projects PTC Energy Division Data Request 03 Dated February 27, 2013. http://www.cpuc.ca.gov/environment/info/dudek/CNF/DR3_ResponseCombi

INTENTIONALLY LEFT BLANK

B. PROJECT DESCRIPTION

Section B describes the Master Special Use Permit/Permit to Construct (MSUP/PTC) Power Line Replacement Projects (SDG&E's proposed project) as proposed by the San Diego Gas & Electric Company (SDG&E or applicant) and as modified in the federal proposed action, which includes the U.S. Forest Service (Forest Service), Bureau of Land Management (BLM), and Bureau of Indian Affairs' (BIA) proposed actions. Section B.1 provides a general introduction and overview of SDG&E's proposed project. Section B.2 provides project location information. Section B.3 describes SDG&E's proposed project and its components (Section B.3.1 describes the applicant's proposed project and Section B.3.2 describes the federal proposed action). Section B.4 describes the permanent land requirements associated with SDG&E's proposed project. Section B.5 describes project construction including schedule, temporary impact areas, methods, personnel, and equipment. Section B.6 describes the operations and maintenance (O&M) procedures. Section B.7 describes the measures proposed by SDG&E, which are designed to reduce or avoid potential environmental impacts associated with project construction, operations, and maintenance. Section B.8 lists the references cited in this section. Figures referenced in the text are located at the end of this section.

B.1 Introduction and Overview

SDG&E's proposed MSUP/PTC power line replacement projects would consolidate over 70 existing special use permits and easements for SDG&E facilities within the Cleveland National Forest (CNF) into one MSUP to be issued by the Forest Service. Project approval would allow the continued operation and maintenance of approximately 100 miles of SDG&E's existing 69-kilovolt (kV) power lines, 12 kV distribution circuits (C), and ancillary facilities, as well as approximately 34 miles of existing access roads required to maintain and operate SDG&E electric facilities within the CNF.

In addition to combining the permits and easements for existing SDG&E facilities within the CNF into one MSUP, SDG&E's proposed project includes the replacement of five existing 69 kV power lines and six 12 kV distribution circuits located within and outside of the CNF, referred to herein as the proposed power line replacement projects. Power line replacement would primarily include fire hardening along with relocation, removal, undergrounding, and single-circuit to double-circuit conversion along certain facilities and segments. The proposed power line replacement projects will require authorization under the MSUP as well as approval from the California Public Utilities Commission (CPUC).

B.2 Project Location

As shown in Figure B-1, Regional Overview Map, and Figure B-2, Power Line Replacement Projects Overview Map, the MSUP study area is located within the Trabuco, Palomar, and Descanso Ranger Districts of the CNF, Orange and San Diego Counties, California.

As shown in Figures B-1 and B-2, the existing power lines and distribution facilities proposed to be replaced are located within the central portion of San Diego County approximately 4.5 miles north of the U.S.–Mexico Border, 14 miles east of the City of El Cajon, in the vicinity of the unincorporated communities of Pauma Valley, Warner Springs, Santa Ysabel, Descanso, Pine Valley, and Campo. As shown in Figure B-2, the proposed power line replacement projects not only traverse the Palomar and Descanso Ranger Districts of the CNF, but due to the patchwork of land ownership in the project study area, also traverse public lands managed by the Bureau of Land Management (BLM); tribal lands on the La Jolla and Campo Indian reservations; Cuyamaca Rancho State Park lands; and private holdings within unincorporated San Diego County.

Project components and route descriptions are described in greater detail in Section B.3.

B.3 Project Components

Approval of the MSUP/PTC power line replacement projects would authorize the continued operation and maintenance of SDG&E electric facilities currently permitted within the administrative boundary of the CNF through issuance of the MSUP and would authorize the replacement of certain existing power lines on and outside CNF lands through issuance of the MSUP and PTC.

As shown in Table B-1, the MSUP would authorize approximately 100 miles of transmission and distribution lines, and approximately 34 miles of access roads on the CNF. See Figure B-2a, Facilities Included Under the MSUP, for an overview of the locations of these facilities.

Table B-1
SDG&E Electric Facilities to be included in the MSUP as part of the Proposed Project

Circuit Number	Miles of Overhead Line	Miles of Underground Line	Total Miles of Circuit	Miles of Exclusive Use Access Roads
C67	0.0[1]	—	0.0	—
C73	6.0	0.0	6.1	—
C78*	1.7	—	1.7	0.0
C79*	6.2	—	6.2	—
C157*	2.5	—	2.5	0.3
C212	4.0	0.0	4.1	—
C214	1.3	—	1.3	—

Table B-1
SDG&E Electric Facilities to be included in the MSUP as part of the Proposed Project

Circuit Number	Miles of Overhead Line	Miles of Underground Line	Total Miles of Circuit	Miles of Exclusive Use Access Roads
C220	0.1	—	0.1	—
C236	—	0.0	0.0	—
C237	1.9	—	1.9	—
C240	0.5	—	0.5	—
C358	2.5	0.1	2.6	—
C440*	12.0	9.8	21.8	0.6
C441	4.9	0.3	5.2	—
C442*	10.6	—	10.6	3.0
C449*	2.7	1.5	4.2	0.4
C524	0.1	—	0.1	—
C970	—	0.1	0.1	—
C973	0.0	0.0	0.0	—
C1166	1.5	—	1.5	—
C1243	0.5	—	0.5	—
C1458	0.2	—	0.2	—
TL625*	6.5	—	6.5	11.0
TL626*	8.2	—	8.2	9.9
TL629*	9.6	—	9.6	6.9
TL637	0.4	—	0.4	—
TL682*	2.5	—	2.5	1.1
TL6923*	1.7	—	1.7	1.1
Glencliff Substation	—	—	—	—
Grand Totals	**88.2**	**11.9**	**100.1**	**34.4**

Source: SDG&E 2013c.
Notes:
* Proposed power line replacement projects
[1] Values of 0.0 reflect very short segments (less than 250') of line that when rounded to a tenth of a mile round to zero.

The electric facilities would be authorized by Forest Service standard permit 2700-4, and operations would be managed according to an Operation and Maintenance (O&M) Plan developed by SDG&E and approved by the Forest Service. A Draft O&M Plan was submitted with the Plan of Development. The final O&M Plan would incorporate the appropriate mitigation measures from the Forest Service Record of Decision for the project.

B.3.1 Applicant's Proposed Power Line Replacement Projects

As summarized in Table B-2 and discussed below, the power line replacement projects proposed by the applicant would replace five existing 69 kV power lines totaling approximately 114.8 miles and six existing 12 kV distribution lines (C) totaling approximately 31.1 miles both on and off CNF lands. Replacement would primarily include fire hardening (wood-to-steel pole replacement), relocation and undergrounding. Wood-to-steel pole replacement would replace existing wood poles along approximately 145.9 miles of 69 kV and 12 kV electric lines by installing approximately 2,104 weathered steel poles (1,384 to support the 5 existing 69 kV lines and 720 to support the 6 existing 12 kV lines). Relocation and undergrounding would remove approximately 15.2 miles of existing 12 kV overhead and replace/relocate some portions (approximately 13 miles) with new underground lines. The proposed power line replacement projects would also convert approximately 5.7 miles from single-circuit 69 kV to double-circuit configuration and remove approximately 11.2 miles of existing access roads used to operate and maintain the existing power lines and distribution lines.

B.3.1.1 69 kV Power Line TL682

Route Description

As shown in Figures B-2 and B-3, the existing 69 kV power line TL682, is located near the communities of Pauma Valley and Warner Springs in central San Diego County. TL682 is approximately 20.2 miles long and generally runs along State Route 76 (SR-76) from the Rincon Substation east to the Warner Substation. From Rincon Substation, located southwest of Valley Center Road and south of SR-76, the line travels generally southeast along SR-76 for approximately 11 miles through private land and tribal land before entering the CNF west of Lake Henshaw. The line continues southeast along SR-76 through the CNF for approximately 0.9 mile, leaves the CNF for approximately 0.1 mile, reenters the CNF for approximately 0.3 mile, then exits the CNF for approximately 0.4 mile. The line then crosses SR-76 and reenters the CNF for approximately 0.1 mile, then exits the CNF for approximately 0.7 mile. The line reenters the CNF near the intersection of East Grade Road and County Highway S7 and continues northeast for approximately 0.1 mile, before crossing Henshaw Truck Trail. From Henshaw Truck Trail, the line continues northeast for approximately 0.7 mile and then leaves the CNF. The line then follows the northern coast of Lake Henshaw and continues east for approximately 5.4 miles through private land before entering Warners Substation.

Table B-2
Summary of Applicant's Proposed Power Line Replacement Projects

Project Components	CNF	Land Owner Type – Occupied Area (Miles)					Description
		State	*BIA/Tribal*	*BLM*	*Other Public*	*Private*	
TL682: Existing 20.2-mile 69 kV power line from Rincon Substation to Warner Substation. Reconstructed TL682 would remain 20.2 miles.	1.3 miles	2.2	La Jolla Indian Reservation 3.1 Yuima Indian Reservation 0.2	—	School 0.3 Water District 6.7	6.4	• Replace existing wood poles (40–90 feet in height) with 259 weathered steel poles (max height 110 feet) • 1.1 miles of existing access road would be maintained.
TL626: Existing 18.8-mile 69 kV power line from Santa Ysabel Substation to Descanso Substation. Reconstructed TL626 would remain 18.8 miles.	78.0 miles	0.2	—	—	County of San Diego 0.3	10.3	• Replace existing wood poles (40–90 feet in height)with 279 weathered steel poles (max height 110 feet) • 10.1 miles of existing access roads would be maintained • Boulder Creek crossing eliminated and turnarounds installed.
TL625: Existing 22.5-mile 69 kV power line from Loveland Substation to Barrett Tap and from Barrett Tap north to Descanso Substation and south to Barrett Substation. Reconstructed TL625 would remain 22.5 miles.	6.7 miles	0.3	—	0.1	City of San Diego 1.8 County of San Diego 0.7 Water District 2.9	10.6	• Replace existing wood poles (40–90 feet in height) with 267 weathered steel poles (max height 120 feet) • Convert Loveland Substation to Barrett Tap segment from single-circuit to double-circuit • 11.3 miles of existing access roads would be maintained.

Table B-2
Summary of Applicant's Proposed Power Line Replacement Projects

Project Components	CNF	Land Owner Type – Occupied Area (Miles)					Description
		State	*BIA/Tribal*	*BLM*	*Other Public*	*Private*	
TL629: Existing 29.8-mile 69 kV power line from Descanso Substation to Cameron Tap and from Cameron Tap South to Cameron Substation and east to Crestwood Substation. Reconstructed TL629 would remain 29.8 miles.	9.0 miles	0.5	Campo Indian Reservation 0.6 (includes 792 feet of undergroundin g into Crestwood Substation)	0.7	County of San Diego 4.1 School District 0.1	15.1	• Replace existing wood poles (40–90 feet in height) with 442 weathered steel poles (max height 110 feet) • Convert Cameron Tap to Cameron Substation from single-circuit to double-circuit • Underground 792-foot segment into Crestwood Substation • 7.0 miles of existing access roads would be maintained.
TL6923: Existing 13.4-mile 69 kV power line from Barrett Substation to Cameron Substation. Reconstructed TL6923 would remain 13.4 miles.	3.2 miles	—	—	3.2	City of San Diego 0.3 County of San Diego <0.1	6.7	• Replace existing wood poles (40–90 feet in height) with 137 weathered steel poles (max height 110 feet) • 1.4 miles of existing access roads would be maintained.
Subtotal: 114.78 miles of 69 kV power line replacement	*27.7 miles*	*13.1*	*3.8*	—	*21.1*	*49.1*	• Replace existing wood poles with 1,384 weathered steel poles • Convert (2) segments (5.7) miles from single-circuit to double-circuit • Underground 792 feet of TL629 into Crestwood Substation • Maintain 30.9 miles of existing access roads.

Table B-2
Summary of Applicant's Proposed Power Line Replacement Projects

Project Components	CNF	Land Owner Type – Occupied Area (Miles)					Description
		State	*BIA/Tribal*	*BLM*	*Other Public*	*Private*	
C79: Existing 2.2 miles overhead 12 kV circuit from TL626 to Cuyamaca Peak. Replace with new 2.84-mile underground circuit.	Remove 1.6 miles	Remove 0.4 Underground 2.8	—	—	—	—	• Remove existing 2.2 miles overhead circuit (64 existing wood poles) and replace with new 2.8-mile underground circuit • Remove 4.2 miles of existing access roads. No new access proposed.
C78: Existing 12 kV circuit runs 1.8 miles east from Viejas Indian Reservation. Reconstruction of C78 would remain 1.8 miles.	Remove 1.4 miles Reconductor 1.8 miles	—	Reconductor 0.1 (Viejas Indian Reservation)	—	County of San Diego Reconductor 0.1	Remove <0.1 Reconductor 0.1	• Replace existing wood poles (33–47 feet in height)with 44 weathered steel poles (max height 52 feet) • Overhead relocation along Viejas Grade Road • 0.1 mile of existing access roads would be maintained.
C157: Existing 3.5-mile 12 kV circuit from Sky Valley Road to Sky Valley Ranch	Reconductor 1.7 miles	—	—	—	City of San Diego Reconductor 1.2	Reconductor 0.6	• Replace wood poles (30–43 feet in height) with 57 weathered steel poles (max height 47.5 feet) • 0.4 mile of existing access roads would be maintained.
C442: Existing 6.2-mile 12 kV circuit near the community of Pine Valley. Reconstruction of C442 would remain 6.2 miles.	Reconductor 3.7 miles	—	—	—	—	Reconductor 2.5	• Replace wood poles (24–49 feet in height) with 129 weathered steel poles (max height 61 feet) • 4.0 miles of existing access roads would be maintained, of which 0.6 mile to be removed.

Table B-2
Summary of Applicant's Proposed Power Line Replacement Projects

Project Components	CNF	Land Owner Type – Occupied Area (Miles)					Description
		State	*BIA/Tribal*	*BLM*	*Other Public*	*Private*	
C440: Existing 24-mile circuit from Glencliff Substation to Mt. Laguna. Reconstruction of C440 would be 25 miles.	Remove 5.8 miles Underground 4.3 miles Reconductor 11.9 miles	Reconductor <0.1	—	—	County of San Diego remove <0. 1 Underground 4.1 Reconductor 0.4	Remove 1.4 Reconductor 4.7	• Remove 7.1 miles of existing overhead 12 kV circuit from Glencliff Substation north to Sunrise Highway • Replace with new 8.4-mile underground segment along Sunrise Highway • Replace remaining wood poles (19–52 feet in height) with 441 weathered steel poles (max height 62 feet) • Remove 4.0 miles of existing access roads • 4.7 miles of existing access roads would be maintained.
C449: Existing 6.7-mile circuit runs from Old Highway 80 south and southwest. Reconstruction of C449 would be 1.5 miles.	Remove 4.9 miles Underground 0.4 miles Reconductor 1.7 miles	—	—	—	City of San Diego remove 0.5 Reconductor 0.4 School District Underground 0.1	Remove 0.2 Underground 0.2 Reconductor 0.2	• Remove 5.6 miles of existing overhead 12 kV circuit and replace with 0.6-mile underground segment and 2.3 miles underbuilt along TL629 • Replace remaining wood poles (24–48 feet in height) with 48 weathered steel poles (max height 62 feet) • Remove 2.4 miles of existing access roads • 2.8 miles of existing access roads would be maintained.

Table B-2
Summary of Applicant's Proposed Power Line Replacement Projects

Project Components	CNF	Land Owner Type – Occupied Area (Miles)					Description
		State	*BIA/Tribal*	*BLM*	*Other Public*	*Private*	
Subtotal: 31.13 miles of 12 kV distribution circuit replacement	*Underground 4.7 miles Reconductor 20.8 miles*	*New 2.8-mile underground and reconductor 0.1 miles*	*Reconductor 0.1 mile*	—	*Underground 4.2 Reconductor 2.2*	*Underground 0.2 Reconductor 8.0*	• Remove total of 16.4 miles of 12 kV overhead circuit • Replace with total of 11.8 miles of underground circuit • Replace existing wood poles with a total of 720 weathered steel poles • Remove 11.2 miles of access roads • Maintain 12 miles of access roads.
Total: 145.91 Miles of Power Line and Distribution Circuit Replacement	**Underground 4.7 miles Reconductor 48.5 miles**	**0.9 Existing 2.8 New (underground)**	**3.9**	**—**	**Underground 4.2 Reconductor 23.2**	**Underground 0.2 Reconductor 57.2**	• **Replace existing wood poles with 2,104 weathered steel poles** • **Remove 16.4 miles of 12 kV overhead circuit** • **Replace with 11.8 miles of underground** • **Remove 11.2 miles of access roads** • **Maintain 42.9 miles of access roads**

Source: SDG&E 2013a and 2013b.
Note that all mileages are approximately based on SDG&E engineering data and Forest Service-provided GIS layer depicting administrative boundary of the CNF. Information may vary depending on which GIS layer is used for these calculations. For purposes of the analysis conducted in this EIR/EIS information presented in SDG&E's revised POD (SDG&E 2013a) and updated in response to CPUC Data Request No. 3 (SDG&E 2013b) are used.

Project Components

As illustrated in Figure B-3, reconstruction of TL682 would include wood–to-steel pole replacement.

- **Wood–to-Steel Conversion:** Replace existing wood poles at an approximate one-to-one ratio with 259 weathered steel poles (175 tangent and 84 angle weathered steel poles). Steel poles would be located within the existing right-of-way (ROW), typically within 8 feet of existing wood poles in-line with the existing conductors. Tangent poles would be used when the alignment continues generally in a straight line, and angle poles would be used when the alignment changes direction.

  Maximum height of replacement poles would be 110 feet with a typical diameter of approximately 30 inches (see Figures B-8 and B-9, Proposed Single-Circuit Tangent Transmission Pole and Proposed Single-Circuit Angle Transmission Pole). Existing wood poles to be removed range in height from approximately 40–90 feet with an approximate 20-inch diameter.
- **Conductor Installation:** Each pole would be configured to carry three 69 kV conductors along with one communication circuit and have an average conductor span length of 400 feet. The lowest 69 kV conductor would be installed with a minimum ground clearance of approximately 30 feet, and 25 feet where there is pedestrian access only.
- **Installation of Other Facilities:** In addition to the replacement steel poles and conductors, SDG&E may install all necessary and proper guys, anchorage, crossarms and braces, and other fixtures for use in connection therewith, including but not limited to, ancillary facilities such as pole- or pad-mounted transformers and other equipment needed to effectively support and enable electric transmission and distribution across the system. In addition to this equipment, SDG&E may also install appurtenant facilities (i.e., weather stations, fire safety and early fire detection equipment, smart-grid system data collection equipment, or other technologies or facilities which may include surveillance cameras) on the replacement steel poles within existing ROWs, as needed, to collect additional information needed to further increase fire safety and service reliability as new technologies become available. Any appurtenant facilities located on Forest Service lands require Forest Service review and approval.
- **Access Roads:** SDG&E maintains 1.1 miles of existing access roads to provide access to TL682 (see Table B-8). Replacement poles would be located in close proximity to existing poles, and therefore existing access roads would be used to support construction and O&M. No new access roads are proposed.

B.3.1.2 69 kV Power Line TL626

Route Description

As shown in Figures B-2 and B-4, the existing TL626 is approximately 18.8 miles in length and runs from the Santa Ysabel Substation near the unincorporated community of Santa Ysabel, south to the Descanso Substation near the unincorporated community of Descanso.

From Santa Ysabel Substation—Located less than approximately 0.1 mile north of SR-78 and approximately 0.2 mile east of SR-79, TL626 travels south for approximately 0.9 mile before entering the CNF west of Inaja Memorial Park. The line then travels for approximately 0.4 mile southeast through the CNF, leaves the CNF for approximately 4.1 miles, and reenters the CNF approximately 0.5 mile near Eagle Peak Road. The line continues south from Eagle Peak Road for approximately 1.0 mile before tapping into the Boulder Creek Substation.

From the Boulder Creek Substation—TL626 heads south for approximately 0.1 mile before entering the CNF. TL626 then continues south through the CNF for approximately 2.6 miles and crosses Cedar Creek, Kelly Creek, and Boulder Creek Road. The line then leaves the CNF for approximately 0.3 mile near McCoy Ranch Road, reenters the CNF for approximately 0.2 mile, crosses McCoy Ranch Road, leaves the CNF for approximately 0.3 mile, and reenters the CNF near King Creek. The line then continues approximately 1.1 miles southeast through the CNF, exits the CNF for approximately 0.6 mile near the intersection of Tule Springs Road and Boulder Creek Road, and reenters the CNF west of Boulder Creek Road. From Boulder Creek Road, the line then travels for approximately 0.5 mile, leaves the CNF for approximately 0.6 mile, reenters and travels through the CNF for approximately 1.2 miles. The line then leaves the CNF near Forest Route 14S09, travels for approximately 0.6 mile, and reenters the CNF near the intersection of Boulder Creek Road and Sherilton Valley Road for approximately 0.5 mile. The line then leaves the CNF and travels for approximately 0.5 mile before reentering near the intersection of Boulder Creek Road and Echo Hills Road. From Echo Hills Road, the line travels through the CNF for approximately 1.2 miles before exiting the CNF and traveling for approximately 1.6 miles south to Descanso Substation located on Oak Grove Drive.

Project Components

As illustrated in Figure B-4, reconstruction of TL626 would include wood-to-steel pole replacement.

- **Wood-to-Steel Conversion:** Replace existing wood poles at an approximate one-to-one ratio with 279 weathered steel poles (221 tangent and 58 angle weathered steel poles). Steel poles would be located within the existing ROW as described for TL682 (see Section B.3.1.1).

Maximum height of replacement poles would be 100 feet with a typical diameter of approximately 36 inches to 60 inches (see Figures B-8 and B-9, Proposed Single-Circuit Tangent Transmission Pole and Proposed Single-Circuit Angle Transmission Pole). Existing wood poles to be removed range in height from approximately 40–90 feet with an approximate 20-inch diameter.

- **Conductor Installation**: Each pole would be configured to carry three 69 kV conductors along with one communication circuit and have an average conductor span length of 400 feet. The lowest 69 kV conductor would be installed with a minimum ground clearance of approximately 30 feet, and 25 feet where there is pedestrian access only.
- **Installation of other Facilities**: Installation of other facilities associated with TL626 may include those as described for TL682 (see Section B.3.1.1).
- **Access Roads**: SDG&E maintains 10.1 miles of existing access roads to provide access to TL626 (see Table B-8). Replacement poles would be located in close proximity to existing poles, and therefore existing access roads would be used to support construction and O&M. No new access roads are proposed.

  The existing access road crossing at Boulder Creek between poles Z372130 and Z372131 (see Figure B-4) would be eliminated, and turnarounds would be installed at either side to permit safe vehicle maneuvering.

B.3.1.3 69 kV Power Line TL625

Route Description

TL625 is located near the unincorporated communities of Alpine and Descanso in central San Diego County. As shown in Figures B-2 and B-5, the existing TL625 is approximately 22.5 miles long and runs from the Loveland Substation east to the Barrett Tap where the line runs both north to the Descanso Substation and south to the Barrett Substation. As shown in Figure B-5, TL625, C78, C157 Overview Map, TL625 consists of the following three segments.

The Loveland Substation to Barrett Tap segment travels east out of Loveland Substation, located on the Sycuan Road (also known as) Sequan Truck Trail south of the Alpine and north of the Loveland Reservoir, for approximately 4.5 miles along Loveland Reservoir and Japatul Road before entering the CNF southeast of the intersection of Japatul Road and Abrams Ridge Road. The line then continues approximately 0.3 mile southeast before crossing Japatul Road, after which it continues 0.3 mile southeast before exiting the CNF. The line then travels approximately 0.1 mile through private land, reenters the CNF near Japatul Road for approximately 0.4 mile, then exits the CNF and travels approximately 0.5 mile southeast through private land before reaching Barrett Tap on Japatul Road.

The Barrett Tap to Descanso Substation segment travels northeast from the Barrett Tap for approximately 1.3 miles through private land, enters the CNF for approximately 0.1 mile, then heads northeast along Japatul Valley Road for approximately 5.1 miles through private land, and reenters the CNF near Interstate 8 (I-8). From I-8, the line continues for approximately 0.5 mile through the CNF, exits the CNF for approximately 0.3 mile, and reenters the CNF near Wildwood Glen Lane. From Wildwood Glen Lane, the line traverses the CNF for approximately 1 mile, exits for approximately 0.1 mile, and reenters the CNF for approximately 0.1 mile near Viejas Grade Road, then travels approximately 0.5 mile north through private land before reaching the Descanso Substation located south of Oak Grove Drive at Boulder Creek Road.

The Barrett Tap to Barrett Substation segment travels south from Barrett Tap for approximately 0.1 mile and enters the CNF. The line then travels for approximately 0.2 mile south through the CNF, crosses Carveacre Road, and continues south for approximately 0.1 mile before exiting the CNF. The line leaves the CNF for approximately 0.3 mile and then reenters the CNF between Carveacre Road and Spirit Trail. After reentering the CNF, the line travels for approximately 0.3 mile, exits the CNF for approximately 0.1 mile, then reenters the CNF northeast of the intersection of Carveacre Road and Fog Ridge and continues southeast through the CNF for approximately 0.2 mile. The line then exits the CNF and travels approximately 0.7 mile southwest through private land before reentering the CNF near Forest Route 16S03. The line then continues approximately 1.3 miles southwest from Forest Route 16S03, exits the CNF near Lyons Valley Road, continues for approximately 1.1 miles through private land, and reenters the CNF near Lyons Valley Road for approximately 0.3 mile. The line then leaves the CNF for approximately 0.8 mile, reenters the CNF west of the intersection of Skye Valley Road and Barrett Lake Road, and travels through the CNF for approximately 0.9 mile west of Barrett Lake. After crossing Forest Route 17S10 east of Barber Mountain, the line continues south for approximately 0.2 mile. The line then exits the CNF for approximately 0.5 mile, reenters the CNF for approximately 0.5 mile near Turmeric Way, then leaves the CNF and travels approximately 0.1 mile to reach Barrett Substation, located north of Manzanita Way and east of Deerhorn Valley Road.

Project Components

As illustrated in Figure B-5, reconstruction of TL625 would include wood-to-steel pole replacement along with single-circuit to double-circuit conversion along one segment.

- **Wood-to-Steel Conversion:** Replace existing wood poles at an approximate one-to-one ratio with 267 weathered steel poles (158 tangent and 109 angle weathered steel poles). Steel poles would be located within the existing ROW as described for TL682 (see Section B.3.1.1).

  Maximum height of replacement poles would be 120 feet with a typical diameter of approximately 36–60 inches (see Figures B-8 and B-9, Proposed Single-Circuit Tangent

Transmission Pole and Proposed Single-Circuit Angle Transmission Pole, and also Figures B-10 and B-11 for Proposed Double-Circuit Tangent Transmission Pole and Proposed Double-Circuit Transmission Angle Pole). Existing wood poles to be removed range in height from approximately 40 feet to 90 feet with an approximate 20-inch diameter.

- **Single-Circuit to Double-Circuit Conversion:** The project proposes to convert the existing Loveland Substation to Barrett Tap segment from a single to a double-circuit segment.
- **Conductor Installation**: Each pole would be configured to carry three 69 kV conductors along with one communication circuit and have an average conductor span length of 400 feet. For the double-circuit segment, up to six 69 kV conductors would be installed. The lowest 69 kV conductor would be installed with a minimum ground clearance of approximately 30 feet, and 25 feet where there is pedestrian access only.
- **Installation of Other Facilities**: Installation of other facilities associated with TL625 may include those as described for TL682 (see Section B.3.1.1).
- **Access Roads**: SDG&E maintains 11.3 miles of existing access roads to provide access to TL625 (see Table B-8). Replacement poles would be located in close proximity to existing poles, and therefore existing access roads would be used to support construction and O&M. No new access roads are proposed.

B.3.1.4 69 kV Power Line TL629

Route Description

As shown in Figures B-2 and B-6, the existing TL629 is located near the communities of Descanso, Guatay, Pine Valley, and Campo in central San Diego County. TL629 is approximately 29.8 miles in length and runs from the Descanso Substation east to the Glencliff Substation, and then south to the Cameron Tap where the line runs both south to the Cameron Substation and west to the Crestwood Substation.

The Descanso Substation to Glencliff Substation segment travels east for approximately 5.6 miles through private land and Cuyamaca Rancho State Park land before it enters the CNF east of the unincorporated community of Guatay. The line travels 1.2 miles southeast through the CNF along Old Highway 80, exits the CNF for approximately 1.9 miles, then reenters the CNF south of the unincorporated community of Pine Valley. From Pine Valley, the line travels east between Old Highway 80 and I-8 for approximately 3.4 miles before crossing I-8. From I-8, the line travels southeast for approximately 1.2 miles before reaching Glencliff Substation, located in the CNF between Old Highway 80 and I-8.

The Glencliff Substation to Cameron Tap segment travels southeast through the CNF from Glencliff Substation along Old Highway 80 for approximately 1.5 miles and exits the CNF for approximately 3.1 miles. The line reenters the CNF west of I-8 and travels an additional 1.6 miles through the Cameron Tap, located south of the intersection of Old Highway 80 and I-8 at Kitchen Road.

The Cameron Tap to Cameron Substation segment travels south for approximately 0.4 mile before exiting the CNF. The line leaves the CNF for approximately 0.5 mile and reenters the CNF near Cameron Truck Trail. The line then continues approximately 0.8 mile south, crosses Cameron Truck Trail, and exits the CNF near the intersection of Cameron Truck Trail and Hyde Park Lane. From Hyde Park Lane, the line continues south for approximately 3.0 miles through private land and BLM-administered land before entering the Cameron Substation, located on Buckman Springs Road.

The Cameron Tap to Crestwood Substation segment travels east from Cameron Tap for approximately 1.5 miles before entering the CNF near the intersection of Cameron Truck Trail and Old Highway 80. The line travels east through the CNF along I-8 for approximately 1.7 miles, crossing La Posta Road. From La Posta Road, the line exits the CNF for approximately 4.4 miles and travels through private land, BLM-administered land, and the Campo Indian Reservation before entering Crestwood Substation, located southwest of the Golden Acorn Casino and I-8.

Project Components

As illustrated in Figure B-6, reconstruction of TL629 would include wood-to-steel pole replacement along with undergrounding and single-circuit to double-circuit conversion for certain segments.

- **Wood-to-Steel Conversion:** Replace existing wood poles at an approximate one-to-one ratio with 442 weathered steel poles (334 tangent and 108 angle weathered steel poles). Steel poles would be located within the existing ROW as described for TL682 (see Section B.3.1.1).
- Maximum height of replacement poles would be 110 feet with a typical diameter of approximately 36 inches to 60 inches (see Figures B-8 and B-9, Proposed Single-Circuit Tangent Transmission Pole and Proposed Single-Circuit Angle Transmission Pole, and also Figures B-10 and B-11 for Proposed Double-Circuit Tangent Transmission Pole and Proposed Double-Circuit Transmission Angle Pole). Existing wood poles to be removed range in height from approximately 40–90 feet with an approximate 20-inch diameter.
- **Single-Circuit to Double-Circuit Conversion:** The project proposes to convert the existing Cameron Tap to Crestwood Substation segment from a single- to a double-circuit segment.

- **Conductor Installation**: Each pole would be configured to carry three 69 kV conductors along with one communication circuit and have an average conductor span length of 400 feet. For the double-circuit segment, up to six 69 kV conductors would be installed. TL629 would also be configured to carry one optical ground wire. The lowest 69 kV conductor would be installed with a minimum ground clearance of approximately 30 feet, and 25 feet where there is pedestrian access only.
- **Undergrounding:** As part of the single-circuit to double-circuit conversion from the Cameron Tap to the Crestwood Substation, an approximate 792-foot segment of TL629 entering into the Crestwood Substation would be undergrounded.

  This underground connection would begin at the replacement steel pole west of Crestwood Substation, proceed east to the western shoulder of Old Highway 80, continue north along the western shoulder of Old Highway 80, cross under Old Highway 80 to the west via jack-and-bore construction (as described further in the following paragraphs), continue east along SDG&E's access road to Crestwood Substation, and finally turn south into the substation where it would connect to the existing rack.
- **Installation of other facilities**: Installation of other facilities associated with TL629 may include those as described for TL682 (see Section B.3.1.1).
- **Access Roads**: SDG&E maintains 7.0 miles of existing access roads to provide access to TL629 (see Table B-8). Replacement poles would be located in close proximity to existing poles, and therefore existing access roads would be used to support construction and O&M. No new access roads are proposed.

B.3.1.5 69 kV Power Line TL6923

Route Description

As shown in Figures B-2 and B-7, the existing TL6923 is located near the communities of Potrero and Campo in central San Diego County. TL6923 is approximately 13.4 miles in length and runs from the Barrett Substation east to the Cameron Substation.

From Barrett Substation, the line travels east for approximately 6.3 miles south of Barrett Lake, through private land and BLM-administered land. The line then travels approximately 1.5 miles along the boundary between the CNF and BLM-administered land, through private land for approximately 0.2 mile, then along the CNF boundary for another 0.2 mile, crossing into Potrero Creek. The line then travels northeast for approximately 0.4 mile through private land, then traverses the CNF boundary for approximately 2.8 miles and crosses Hauser Creek before traveling approximately 2.1 miles to Cameron Substation.

Project Components

As illustrated in Figure B-7, reconstruction of TL6923 would include wood-to-steel pole replacement.

- **Wood-to-Steel Conversion:** Replace existing wood poles at an approximate one-to-one ratio with 137 weathered steel poles (88 tangent and 49 angle weathered steel poles). Steel poles would be located within the existing ROW as described for TL682 (see Section B.3.1.1).

  Maximum height of replacement poles would be 100 feet with a typical diameter of approximately 36–60 inches (see Figures B-8 and B-9, Proposed Single-Circuit Tangent Transmission Pole and Proposed Single-Circuit Angle Transmission Pole). Existing wood poles to be removed range in height from approximately 40–90 feet with an approximate 20-inch diameter.
- **Conductor Installation**: Each pole would be configured to carry three 69 kV conductors along with one communication circuit and have an average conductor span length of 400 feet. The lowest 69 kV conductor would be installed with a minimum ground clearance of approximately 30 feet, and 25 feet where there is pedestrian access only.
- **Installation of Other Facilities**: Installation of other facilities associated with TL6923 may include those as described for TL682 (see Section B.3.1.1).
- **Access Roads**: SDG&E maintains 1.4 miles of existing access roads to provide access to TL6923 (see Table B-8). Replacement poles would be located in close proximity to existing poles, and therefore existing access roads would be used to support construction and O&M. No new access roads are proposed.

B.3.1.6 12 kV Distribution Circuit C79

Route Description

As shown in Figures B-2 and B-4, the existing 12 kV distribution circuit (C)79 is located approximately 5 miles north of the community of Descanso in central San Diego County. C79 is approximately 2.2 miles in length and runs from its intersection with TL626 east to the Cuyamaca Peak communication site within Cuyamaca Rancho State Park.

Project Components

As illustrated in Figure B-4, reconstruction of C79 would include removal of existing overhead line and replacement with new relocated underground segment.

- **Removal:** As shown in Figure B-4, the existing 2.2-mile overhead C79 from its intersection with TL626 to the Cuyamaca Peak communication site would be removed.

Sixty-four existing wood poles (from pole P377371 to pole P377405 and from pole P676926 to pole P377414) would be removed and replaced with a new underground segment as described below.

- **Undergrounding**: The existing overhead C79 proposed for removal would be replaced with a new approximately 2.8-mile underground 12 kV circuit through Cuyamaca Rancho State Park from the Cuyamaca Peak communication site west in Lookout Road where it would connect to an existing overhead 12 kV distribution circuit via a new 45-foot-tall riser pole on the eastern side of SR-79 (see Figure B-13, Proposed Distribution Riser Pole).

  Underground cables would be installed in a 1.5-foot-wide by 1.5-foot-deep ducts bank. Approximately 19 splice vaults would also be installed along the new underground segment. Splice vaults would be approximately 5.5 feet wide by 8 feet long by 7 feet deep.

- **Access Roads**: Removes 4.2 miles of existing access roads maintained by SDG&E to provide access to C79 (see Table B-8). Undergrounding would be located in Lookout Road, and therefore existing access roads would be used to support construction and O&M. No new access roads are proposed.

B.3.1.7 12 kV Distribution Circuit C78

Route Description

As shown in Figures B-2 and B-5, the existing C78 is located east of the Viejas Indian Reservation, approximately 3 miles west of the community of Descanso in central San Diego County. C78 is approximately 1.8 miles in length and runs from approximately 400 feet east of the eastern boundary of the Viejas Indian reservation east to its termination point near the intersection of Viejas Grade Road and Via Arturo Road.

Project Components

As illustrated in Figure B-5, reconstruction of C78 would include wood-to-steel pole replacement and relocation.

- **Wood–to-Steel Conversion/Overhead Relocation:** Replace existing wood poles with 44 weathered steel poles (9 tangent and 35 angle weathered steel poles). Steel poles would be located within the existing ROW (as described in Section B.3.1.1) from poles P172686 to P176290 (approximate distance of 1,600 feet). The remaining C78 and associated steel poles would be relocated along Viejas Grade Road.

Maximum height of replacement poles would be 52 feet with a typical diameter of approximately 14 inches (see Figures B-12a and B-12b, Proposed Steel Distribution Pole). Existing wood poles to be removed range in height from approximately 33 feet to 47 feet.

- **Conductor Installation**: Each pole would be configured to carry two to four 12 kV conductors and have an average span length of 230 feet. The lowest 12 kV conductor would be installed with a minimum ground clearance of 25 feet, and 17 feet where there is pedestrian access only.
- **Installation of Other Facilities**: Installation of other facilities associated with C78 may include those as described in Section B.3.1.1.
- **Access Roads**: SDG&E maintains 0.1 mile of existing access roads to provide access to C78 (see Table B-8). Replacement poles would be located in close proximity to existing poles and Viejas Grade Road, and therefore existing access roads would be used to support construction and O&M. No new access roads are proposed.

B.3.1.8 12 kV Distribution Circuit C157

Route Description

As shown in Figures B-2 and B-5, the existing C157 is located east of TL625 and north of Barrett Lake in central San Diego County. C157 is approximately 3.5 miles in length and runs from Sky Valley Road just east of Lyons Valley Road east through portions of the congressionally designated Pine Creek and Hauser Wilderness Areas to Sky Valley Ranch.

Project Components

As illustrated in Figure B-5, reconstruction of C157 would include wood-to-steel pole replacement.

- **Wood-to-Steel Conversion:** Replace existing wood poles at an approximate one-to-one ratio with 57 weathered steel poles (51 tangent and 6 angle weathered steel poles). Steel poles would be located within the existing ROW as described in Section B.3.1.1.

  Maximum height of replacement poles would be 47.5 feet with a typical diameter of approximately 14 inches (see Figures B-12a and B-12b, Proposed Steel Distribution Pole). Existing wood poles to be removed range in height from approximately 30 feet to 43 feet.
- **Conductor Installation**: Each pole would be configured to carry two to four 12 kV conductors and have an average span length of 230 feet. The lowest 12 kV conductor would be installed with a minimum ground clearance of 25 feet, and 17 feet where there is pedestrian access only.

- **Installation of Other Facilities**: Installation of other facilities associated with C157 may include those as described in Section B.3.1.1.
- **Access Roads**: SDG&E maintains 0.4 miles of existing access roads to provide access to C157 (see Table B-8). Replacement poles would be located in close proximity to existing poles, and therefore existing access roads would be used to support construction and O&M. No new access roads are proposed.

B.3.1.9 12 kV Distribution Circuit C442

Route Description

As shown in Figures B-2 and B-6, the existing C442 is located near the community of Pine Valley in central San Diego County. C442 is approximately 6.2 miles in length consisting of both a northern and southern segment.

The northern segment is located entirely within the CNF and travels south along Pine Creek Road for approximately 1.0 mile, traveling to the west of Noble Canyon National Recreation Trail and associated trailhead, with approximately 0.5 mile along three branches to the east.

The southern segment travels southwest from Pine Valley Road, just south of I-8 and the unincorporated community of Pine Valley, for approximately 2.2 miles through the CNF, passing to the west of Long Valley Peak. The line then exits the CNF and travels southwest for approximately 2.5 miles before terminating near Los Pinos Mountain.

Project Components

As illustrated in Figure B-6, reconstruction of C442 would include wood-to-steel pole replacement.

- **Wood-to-Steel Conversion:** Replace existing wood poles at an approximate one-to-one ratio with 129 weathered steel poles (109 tangent and 20 angle weathered steel poles). Steel poles would be located within the existing ROW as described in Section B.3.1.1.

  Maximum height of replacement poles would be 61 feet with a typical diameter of approximately 14 inches (see Figures B-12a and B-12b, Proposed Steel Distribution Pole). Existing wood poles to be removed range in height from approximately 24 feet to 49 feet.
- **Conductor Installation**: Each pole would be configured to carry two to four 12 kV conductors and have an average span length of 230 feet. The lowest 12 kV conductor would be installed with a minimum ground clearance of 25 feet, and 17 feet where there is pedestrian access only.
- **Installation of Other Facilities**: Installation of other facilities associated with C442 may include those as described in Section B.3.1.1.

- **Access Roads**: SDG&E maintains 4.0 miles of existing access roads to provide access to C442, of which approximately 0.6 mile would be removed (see Table B-8). Replacement poles would be located in close proximity to existing poles, and therefore existing access roads would be used to support construction and O&M. No new access roads are proposed.

B.3.1.10 12 kV Distribution Circuit C440

Route Description

As shown in Figures B-2 and B-6, the existing C440 is located east of the community of Pine Valley in central San Diego County. C440 is approximately 24 miles in length and runs from the Glencliff Substation north and northeast within the vicinity of the Sunrise Highway, with short branches heading both east and west past Mount Laguna where it terminates near Monument Peak Road.

Project Components

As illustrated in Figure B-6, reconstruction of C440 would include some overhead line removal replaced with undergrounding, along with wood–to-steel pole replacement.

- **Removal:** As shown in Figure B-6, approximately 7.2 miles of the existing overhead C440 would be removed starting from the Glencliff Substation north to the Sunrise Highway. As described below, approximately 99 existing wood poles would be removed and replaced with a new underground segment along Sunrise Highway.
- **Undergrounding:** As shown in Figure B-6, the existing overhead C440 proposed for removal would be replaced with a new approximately 8.4-mile underground 12 kV circuit. The new underground circuit would run approximately 6.9 miles from near I-8 along the Sunrise Highway to Pole P40152 west of Morris Ranch Road. In addition, a new approximately 0.6-mile-long underground portion of C440 would run from P45860 to P40229 in the Laguna Campground area, and a new approximately 0.9-mile long underground portion of C440 would be placed in the vicinity of Sheep Head Mountain Road.

  Underground cables would be installed in a 1.5-foot-wide by 1.5-foot-deep ducts bank. Approximately 55 splice vaults would also be installed along the new underground segment. Splice vaults would be approximately 5.5 feet wide by 8 feet long by 7 feet deep.
- **Wood-to-Steel Conversion:** Replace remaining existing wood poles at an approximate one-to-one ratio with 441 weathered steel poles (292 tangent, 145 angle, and 4 riser weathered steel poles). Steel poles would be located within the existing ROW as described in Section B.3.1.1.

  Maximum height of replacement poles would be 62 feet with a typical diameter of approximately 14 inches (see Figures B-12a and B-12b, Proposed Steel Distribution Pole). Existing wood poles to be removed range in height from approximately 19 feet to 52 feet.

- **Conductor Installation**: Each pole would be configured to carry two to four 12 kV conductors and have an average span length of 230 feet. The lowest 12 kV conductor would be installed with a minimum ground clearance of 25 feet, and 17 feet where there is pedestrian access only.
- **Installation of Other Facilities**: Installation of other facilities associated with C-440 may include those as described in Section B.3.1.1.
- **Access Roads**: Approximately 4.0 miles of existing access roads maintained by SDG&E to provide access to C440 would be removed. Undergrounding would be located along Sunrise Highway, and therefore existing access roads would be used to support the new underground portion of C440.

  SDG&E would continue to maintain 4.7 miles of existing access roads to provide access to the remaining overhead portions of C440 (see Table B-8). Replacement poles would be located in close proximity to existing poles, and therefore existing access roads would be used to support construction and O&M. No new access roads are proposed. Where existing access roads are damaged, repair consisting of smoothing, stabilizing and improving the surface would occur.

B.3.1.11 12 kV Distribution Circuit C449

Route Description

As shown in Figures B-2 and B-6, the existing C449 is located near the community of Cameron Corners in central San Diego County. C449 is approximately 6.7 miles in length and runs from Old Highway 80 south along Buckman Springs Road to Oak Drive and southwest along Morena Stokes Road to Camp Morena.

Project Components

As illustrated in Figure B-6, reconstruction of C449 would include some overhead line removal replaced primarily with undergrounding, along with wood-to-steel pole replacement.

- **Removal**: As shown in Figure B-6, approximately 5.7 miles of the existing overhead 12 kV distribution circuit would be removed. Approximately 102 existing wood poles would be removed and replaced with new underground segment as described below, along with 12 kV underbuilt along TL629 and tie into existing C441.
- **Undergrounding**: As shown in Figure B-6, the existing overhead C449 proposed for removal would be replaced with a new approximately 1.8-mile underground 12 kV circuit. The new underground circuit would run along Buckman Springs Road and Moreno Stokes Valley Road.

Underground cables would be installed in a 1.5-foot -wide by 1.5-foot-deep ducts bank. Approximately 12 splice vaults would also be installed along the new underground segment. Splice vaults would be approximately 5.5 feet wide by 8 feet long by 7 feet deep.

- **12 kV distribution underbuilt along TL629:** The 12 kV underbuilt would occur along TL629 from the Cameron Substation to pole P192945 and become part of C441 underbuilt on TL629 from pole P192945 to Glencliff Substation.
- **Wood-to-Steel Conversion:** Remove remaining existing wood poles and replace with 48 weathered steel poles (28 tangent, 18 angle, and 2 riser weathered steel poles). Steel poles would be located within the existing ROW as described in Section B.3.1.1.

  Maximum height of replacement poles would be 62 feet with a typical diameter of approximately 14 inches (see Figures B-12a and B-12b, Proposed Steel Distribution Pole). Existing wood poles to be removed range in height from approximately 24 feet to 48 feet.
- **Conductor Installation**: Each pole would be configured to carry two to four 12 kV conductors and have an average span length of 230 feet. The lowest 12 kV conductor would be installed with a minimum ground clearance of 25 feet, and 17 feet where there is pedestrian access only.
- **Installation of other facilities**: Installation of other facilities associated with C440 may include those as described in Section B.3.1.1.
- **Access Roads**: Removes approximately 2.4 miles of existing access roads SDG&E maintains to provide access to C449. Undergrounding would be located adjacent to Buckman Springs Road and Morena Stokes Valley Road, and therefore existing access roads would be used to support the new underground portion of C449.

SDG&E would continue to maintain 2.8 miles of existing access roads to provide access to the remaining overhead portions of C449 (see Table B-8). Replacement poles would be located in close proximity to existing poles, and therefore existing access roads would be used to support construction and O&M. No new access roads are proposed.

B.3.2 Federal Proposed Action

As described in Section A, Introduction, to this EIR/EIS, the Forest Service reviewed and accepted the application for an MSUP with modifications to certain actions on National Forest System lands. In addition, the Bureau of Indian Affairs, as cooperating agency to the Forest Service and in consultation with the La Jolla Indian Tribe, proposes modifications to TL682 located on tribal lands. This modified proposal is the federal proposed action, which modifies the applicant's proposed project along four project alignments, including TL626, C157, C440, and TL682 (the BIA proposed action). With regards to appurtenant facilities, the Forest Service

proposes to authorize electrical control devices and weather stations not otherwise specified in the permit, subject to Forest Service review and approval of final design and location. The Forest Service is not proposing to authorize surveillance cameras on National Forest System lands. The Forest Service proposed action for TL626, C157, C440, and the BIA proposed action (TL682) is described in detail below. The BLM proposed action does not modify SDG&E's proposed project and includes portions of SDG&E's proposed power line replacement projects for TL629, TL625, and TL6923.

The federal proposed action described in this chapter has been modified from the action described in the Notice of Intent. These modifications were made in response to suggestions from the public and agencies during scoping, and by the cooperating federal agencies. These modifications consider five options for rerouting segments of TL626, two options for relocating C157 from designated wilderness areas, additional undergrounding for C440, and undergrounding a segment of TL682 (proposed by BIA). Modifications of the proposed action are consistent with the Forest Service NEPA regulations found at 36 CFR 220.5(e)(1). The federal proposed actions will be considered as alternatives in accordance with California Environmental Quality Act (CEQA) Guidelines (Section 15126.6; 14 CCR 15000 et seq.).

B.3.2.1 TL626 Alternative Routes

The existing TL626 access roads are impacting the Cedar Creek riparian area and are in conflict with the Land Management Plan (LMP) standards for Riparian Conservation Areas. The steep road gradients prevent effective implementation of erosion control treatments. This area is also being evaluated for recommended wilderness zoning in the LMP. Relocation of TL626 will avoid riparian impacts and restore the undeveloped character of the landscape. This federal proposed action is to relocate a section of TL626 out of the Cedar Creek undeveloped area. In order to accomplish this, the Forest Service is evaluating options 1 through 4 as outlined below and shown in Figures B-4a and B-4b. The section of line that is replaced would be removed and the affected area restored. The relocated section of line would be constructed to the same standard described by the applicant for each of the following routes described.

Option 1: SDG&E Proposed Overhead Alignments through Inaja and Cosmit Reservation Lands

Option 1 would reroute TL626 between poles Z213680 and Z372134 to approximately 2 miles directly east of the existing alignment at its farthest point (SDG&E 2014a). The rerouted segment of Option 1 would measure approximately 5.5 miles in length from pole Z213680 to pole Z372134, as depicted in Figure B-4a. In order to continue serving Boulder Creek Substation and the associated customers in the vicinity of the substation, the existing TL626 alignment in the northern section ending at Boulder Creek Substation would remain as is described in Section

B.3.1 under the applicant's proposed project. The portion of TL626 from Boulder Creek Substation south to pole Z372134 would be removed, a length of approximately 3.7 miles. Approximately 1.1 miles of the rerouted portion of the line would be located within the CNF. In addition, the rerouted portion of Option 1 would cross approximately 0.2 mile of the Inaja and Cosmit Reservation and approximately 4.2 miles of private land. Specifically, the route would travel southeast from pole Z213680 for approximately 0.4 mile through private land, enter the CNF for approximately 0.2 mile, leave the CNF for approximately 0.3 mile, then reenter the CNF for less than approximately 0.1 mile. The line would then continue southeast for approximately 1.1 miles across private land, travel south through the CNF for approximately 0.4 mile, then leave the CNF and travel southwest for approximately 1.8 miles, of which approximately 0.2 mile is located on the Inaja and Cosmit Reservation. The line would then continue southwest, entering the CNF for approximately 0.2 mile, leave the CNF for approximately 0.8 mile, then reenter the CNF and travel south for approximately 0.3 mile before terminating at pole Z372134. The total length of Option 1 would be approximately 20.6 miles long, 1.8 miles longer than SDG&E's proposed project, which is approximately18.8 miles long.

Option 1 would include the following components:

- **Wood-to-Steel Replacement**: Replacement of 24 existing poles along the approximately 1.7-mile portion of the existing power line from pole Z213680 to Boulder Creek Substation, as described in Section B.3.1 (same as the applicant's proposed project).
- **New Steel Poles**: Installation of approximately 45 new steel poles.
- **Removal:** Removal of 58 poles along an approximately 3.7-mile portion of the existing power line from Boulder Creek Substation to pole Z372134.
- **Access Roads**: Approximately 3.9 miles of new access roads would be required to access the new pole locations. In addition, approximately 5.8 miles of existing access roads and approximately 3.7 miles of existing ROW would be restored for Option 1. New access roads would be approximately 20 feet in width to accommodate construction as well as operation and maintenance vehicles. Approximately 3 of the 45 poles would be installed by helicopter. For construction, operations, and maintenance access purposes, landing areas in the vicinity of the three poles locations would be required.

Construction of the 5.5-mile alignment would result in approximately 23.3 acres of temporary ground disturbance and less than 0.1 acre of permanent impacts (see Table B-3).

This option would require CPUC and Forest Service approval.

Option 2: SDG&E Proposed Overhead Alignments around Inaja and Cosmit Reservation Lands

Option 2 would also reroute TL626 between poles Z213680 and Z372134 to approximately 2 miles directly east of the existing alignment at its farthest point, following a path generally similar to Option 1 (SDG&E 2014a). However, the Option 2 alignment would avoid the Inaja and Cosmit Reservation by taking a more easterly path, as shown in Figure B-4a. The rerouted segment of Option 2 would be approximately 5.6 miles in length from pole Z213680 to pole Z372134. Specifically, Option 2 would travel southeast from pole Z213680 for approximately 0.4 mile through private land, enter the CNF for approximately 0.3 mile, leave the CNF for approximately 0.3 mile, then reenter the CNF for less than 0.1 mile. The line would then continue southeast for approximately 1.1 miles on private land, travel south through the CNF for approximately 0.4 mile, then leave the CNF and travel southwest for approximately 2.1 miles. The line would then continue southwest, enter the CNF for less than 0.1 mile, leave the CNF for approximately 0.8 mile, then reenter the CNF and travel south for approximately 0.3 mile before terminating at pole Z372134. The total length of Option 2 would be approximately 20.7 miles long, 1.9 miles longer than SDG&E's proposed project, which is approximately18.8 miles long.

Option 2 would include the following components:

- **Wood-to-Steel Replacement**: Replacement of 24 existing poles along the approximately 1.7-mile portion of the existing power line from pole Z213680 to Boulder Creek Substation, as described in Section B.3.1 (same as the applicant's proposed project).
- **New Steel Poles**: Installation of approximately 53 new steel poles.
- **Removal:** Removal of 58 poles along the approximately 3.7-mile portion of the existing power line from Boulder Creek Substation to pole Z372134.
- **Access Roads:** Construction of access roads would be as described under Option 1. Approximately 4 of the 53 poles would be installed by helicopter. For construction, operations, and maintenance access purposes, landing areas in the vicinity of the four poles locations would be required.

Construction of the 5.6-mile alignment would result in approximately 29.3 acres of temporary ground disturbance and less than 0.1 acre of permanent impacts (see Table B-3).

Table B-3
TL626 Options 1 and 2: Temporary and Permanent Footprints

Construction Activity	Temporary Footprint (Acres)		Permanent Footprint (Acres)	
	Option 1	*Option 2*	*Option 1*	*Option 2*
New Steel Poles	1.29	1.52	<0.1	<0.1

Table B-3
TL626 Options 1 and 2: Temporary and Permanent Footprints

Construction Activity	Temporary Footprint (Acres)		Permanent Footprint (Acres)	
	Option 1	*Option 2*	*Option 1*	*Option 2*
	(45 new poles)	(53 new poles)	(45 new poles)	(53 new poles)
Landing Zone	0.45	0.45	0	0
Staging Areas	6.17	6.17	0	0
Stringing Sites	0.40	0.60	0	0
Access Roads	11.7	16.4	9.5	9.7
Total	**20.0**	**25.14**	**9.6**	**9.8**

Source: SDG&E 2014a (GIS data).

This option would require CPUC and Forest Service approval. In addition, the portion of the rerouted TL626 that crosses the Inaja and Cosmit Reservation lands would require approval from the Tribe and BIA.

Option 3: Partial Underground Relocation in Boulder Creek Road

Under this alternative, a portion of TL626 would be partially undergrounded within the vicinity of the Forest Service TL626 study corridor and within Boulder Creek Road (SDG&E 2014b). All other aspects of SDG&E's proposed project would remain unchanged. As shown in Figure B-4b, two options have been identified for undergrounding in the roadway. Option 3a (full distance along Boulder Creek Road (11.4 miles)) starts at the southernmost pole location (Z372116) and ties back into the overhead portion of TL626 near pole Z213680. Option 3b (partial distance along Boulder Creek Road (6.3 miles)) starts at pole Z372142 north of C79 and would tie back into the overhead portion of TL626 near pole Z213680.

- **Option 3a – Full distance along Boulder Creek Road – Pole Z372116 to Pole Z213680** (removal of a 4.88-mile segment of TL626 from pole Z372116 to Boulder Creek Substation): Under this option, approximately 11.4 miles of TL626 along Boulder Creek Road would be undergrounded beginning at pole Z372116. An additional approximately 1 mile of overhead alignment would be required across private lands to reconnect the underground alignment with the existing overhead alignment at pole Z213680. Along the approximately 11.4-mile-long segment of Boulder Creek Road, approximately 12 turns have an insufficient radius within the existing roadbed to permit construction of underground duct packages or stringing of conductors due to minimum design requirements of the materials proposed to be used. Approximately 25 locations along this segment of Boulder Creek Road exceed 12% slope, which is the maximum slope feasible for underground conductor installation. Additionally, this segment of Boulder Creek Road crosses approximately 10 hydrological features through which open trenching would not be

feasible. For the purposes of this analysis, these 47 locations would require jack-and-bore or horizontal directional drill (HDD) construction techniques to be used, resulting in approximately 75,200 square feet (approximately 1.7 acres) of temporary impacts during construction. The remaining approximately 10.5 miles of Boulder Creek Road would be open trenched, resulting in approximately 138,600 square feet (approximately 3.2 acres) of temporary impacts during construction. This option would result in approximately 90,000 cubic yards of temporary excavation for the jack-and-bore pits (estimated at 20 feet in depth) and approximately 60 splice vaults (assuming 1 splice vault every 1,000 feet of the duct package). The total length of Option 3a would be approximately 26.3 miles long, 7.5 miles longer than SDG&E's proposed project, which is approximately18.8 miles long.

- **Option 3b – Partial distance along Boulder Creek Road – Pole Z372142 to Pole Z213680** (removal of a 3.18-mile segment of TL626 from pole Z372142 to Boulder Creek Substation): This option would include undergrounding TL626 from pole Z372142, approximately 0.45 mile along McCoy Ranch Road until it intersects with Boulder Creek Road, then continuing underground along Boulder Creek Road for approximately 5.8 miles, at which point the line would return to an aboveground configuration. An additional approximately 1 mile of overhead alignment would be required to be constructed across private lands to reconnect the underground alignment with the existing overhead alignment at pole Z213680. Along the approximately 5.8-mile-long segment of Boulder Creek Road, approximately 9 turns have an insufficient radius within the existing roadbed to permit construction of underground duct packages or stringing of conductors due to minimum design requirements of the materials proposed to be used. Approximately 12 locations along this segment of Boulder Creek Road exceed 12% slope, which is the maximum slope feasible for underground conductor installation. Additionally, this segment of Boulder Creek Road crosses approximately five hydrological features through which open trenching would not be feasible. For the purposes of this analysis, these 26 locations would require jack-and-bore construction techniques to be used, resulting in approximately 41,600 square feet (approximately 1 acre) of temporary impacts during construction. The remaining approximately 5.3 miles of Boulder Creek Road would be open trenched, resulting in approximately 69,960 square feet (approximately 1.6 acres) of temporary impacts during construction. Option 2 would result in approximately 48,286 cubic yards of temporary excavation for the jack-and-bore pits (estimated at 20 feet in depth) and approximately 33 splice vaults (assuming 1 splice vault every 1,000 feet of the duct package). The total length of Option 3b would be approximately 22.9 miles long, 4.1 miles longer than SDG&E's proposed project, which is approximately 18.8 miles long.

Under both underground options stringing sites would generally be placed along the road in disturbed areas, and would be required every approximately 1 mile to conduct stringing

activities. The stringing sites would be approximately 20 feet wide and 100 feet long to accommodate stringing equipment and materials. Staging of materials and equipment would also be required along Boulder Creek Road or in the vicinity of work areas; assuming three staging areas along Boulder Creek Road are used, and each is approximately 2 acres in size, an additional approximately 6 acres of temporary impacts would occur during construction.

Further, for both options the approximately 1-mile overhead alignment to reconnect at pole Z213680 would require an additional approximately 15 steel poles and associated conductors. This would result in approximately 0.4 acre of additional temporary impacts and approximately 0.01 acre of permanent impacts. See Table B-4 for the temporary and permanent impacts resulting from the various construction activities required to underground TL626 in Boulder Creek Road.

Table B-4
TL626 Option 3: Underground in Boulder Creek Road
Temporary and Permanent Footprints

Construction Activity	Temporary Footprint (Acres)		Permanent Footprint (Acres)	
	Option 3a	*Option 3b*	*Option 3a*	*Option 3b*
Jack-and-Bore	1.7	1	<0.1	<0.1
Open Trenching	3.2	1.6	<0.1	<0.1
Staging Areas	6	6	0	0
Stringing Sites	0.5	0.3	0	0
Overhead Alignment (including two riser poles*)	0.4	0.4	<0.1	<0.1
Total	**11.8**	**9.3**	**0.1**	**0.1**

* Based on average of 15 poles per mile.

Note: Temporary and permanent footprints are based on preliminary evaluations conducted by SDG&E, as well as a desktop-level assessment of local conditions along Boulder Creek Road, to estimate approximate locations where jack-and bore or HDD construction techniques may be required. In order to provide a worst-case estimate for the temporary and permanent footprints, SDG&E assumed that jack-and-bore would be used (SDG&E 2014b).

Construction Methods

Underground duct bank installation methods would be similar to that described in Section B.5.2.2 of this EIR/EIS. Where local topography and surface conditions warrant, open trenching would be used to install underground duct packages. Unique constraints along Boulder Creek Road include hydrological features, hairpin turns, and road slopes in excess of 12%. Jack-and-bore or HDD would be used in areas where surface features, such as creek crossings or other hydrological features, are present. A minimum turning radius of approximately 25 feet is required when installing underground duct packages and cables at road turns.

The depth of the trench would be determined by localized topography and potential conflicts, but is anticipated to be approximately 6 to 10 feet deep, with a width of approximately 2.5 feet. Once installed, the depth from grade to the top of the concrete duct package would be at least 3 feet.

As described in Section B, the trench alignment would proceed to a riser pole at either end of the undergrounded segment and support the transition from the underground to overhead conductors.

Underground power lines would be installed in a duct bank containing between four and nine 4-inch to 6-inch-diameter polyvinyl chloride (PVC) conduits encased in concrete with a cover of slurry or engineered or native backfill. The underground concrete splice vaults would be approximately 21 feet long by 9 feet wide by 10 to 12 feet deep to facilitate the pulling and splicing of the cables, and would be installed in-line with the underground duct banks approximately every 1,000 to 1,500 feet depending on terrain, or at shorter intervals where horizontal road bends or slopes in excess of 12% grade are encountered. These vaults would also provide access to the 69 kV underground conduits for maintenance, inspection, and repair during operation. Each vault would include an approximately 5.5-foot by 6.5-foot access cover to allow for personnel and equipment entry during maintenance activities, resulting in an approximately 35-square-foot permanent impact.

Jack-and-Bore

Due to the unique constraints along Boulder Creek Road, SDG&E would use jack-and-bore construction where open trenching is not feasible due to the presence of surface waters, such as where TL626 crosses Boulder or Cedar creeks, or where other surface features exist that prohibit the use of open trenching. The jack-and-bore technique consists of a boring operation that simultaneously pushes a casing under an obstacle and removes the spoil inside the casing with a rotating auger. Boring operations would begin with excavating bore pits at the sending and receiving ends of the bore. Boring and receiving pits would typically measure approximately 20 feet by 40 feet. The depth of the proposed bore pits would be between 10 and 20 feet, depending on local site conditions. After establishing the bore pits, boring equipment would be delivered to the site and then installed into the bore pit at the sending end. The casing would be installed at least 3 feet below the surface feature, as practicable. Once the casing is in place, Schedule 80 PVC cable ducts would be installed within the casing using spacers to hold them in place. The casing would then be injected with a high-strength grout or cement to remove all voids and provide additional rigidity. The casing would be left in place to protect the conduit once it has been installed. Following the completion of all boring, installation of the casing and conduits, and completion of the concrete duct bank, the bore pits would be backfilled using native or engineered material. Soil not used for backfill would be hauled off site and disposed of at an approved facility, such as the Allied Otay Landfill.

Horizontal Directional Drill

Where open trenching or jack-and-bore techniques are infeasible due to local topography or environmental or engineering constraints, the use of HDD methods may be required. When HDD

is required, SDG&E would identify and excavate an entry point on the ground surface, behind which the HDD equipment would be staged. A drilling rig and working space would be established behind the entry point to conduct drilling operations and accommodate handling and disposal of drilling mud and spoils that result from the activity. The HDD then drills into the subsurface along an angled path until reaching a depth sufficient so that the final pipeline will not contact or destabilize the surface feature under which the conductors are being placed; drilling is multi-directional and is controlled in an assembled control house staged within the work area. Drilling mud is injected through the drill augers to serve as a cooling agent and lubricant during drilling operations. Once the drill has cleared the surface feature to be avoided, the HDD would then drill back to the surface along the designed drill path. Once the pilot hole has been established, a second, larger auger bit would be pulled back through the pilot hole to enlarge the hole. This process is repeated using successively larger auger bits until the hole has reached a diameter sufficient to accommodate the bundled underground high-density polyethylene (HDPE) conduits in which the power line cables would be placed. Once the proper diameter has been achieved, the contractor stages the HDPE conduits in-line behind the HDD and chemically fuses the entire assembly length; the HDPE conduits would then be bundled together and pulled through the length of the bore hole in a single pull. Once the HDPE conduits are in place, they would be cleaned, swabbed, and mandreled prior to being connected to the duct packages at either end of the bore hole. Once this is completed, the ground surface would be restored to near preconstruction conditions.

This option would require CPUC and Forest Service approval. In addition, the portion of the undergrounded segment of TL626 that crosses the Inaja and Cosmit Reservation lands would require approval from the Tribe and BIA.

Option 4: Overhead Relocation along Boulder Creek Road

Under this alternative, a portion of TL626 would be relocated within the vicinity of the Forest Service TL626 study corridor along Boulder Creek Road. Beginning at pole Z372116, a segment of TL626 would be relocated along a 7.5-mile segment of the Boulder Creek Road before merging with the alignment proposed in Options 1 and 2, near the Pine Hills Fires Station (see Figure B-4a). From this point the alignment would go overland approximately 2.1 miles to interconnect with the existing TL626 at pole Z213680. The relocated alignment between poles Z372116 and Z213680 would be approximately 9.6 miles long. New steel poles would be installed adjacent to the roadway, with no new access roads needed. The total length of Option 4 would be approximately 23.5 miles long, 4.7 miles longer than SDG&E's proposed project, which is approximately 18.8 miles long.

A portion of the relocation (to pole Z372153) would be a dual circuit line for the 69 kV TL626 and the 12 kV C79. The existing line from poles Z372116 through Z372120, and poles Z372138 to Z372153 would be converted to 12 kV only to continue service to the private land inholdings.

This option would require CPUC and Forest Service approval. In addition, the portion of the undergrounded segment of TL626 that crosses the Inaja and Cosmit Reservation lands would require approval from the Tribe and BIA.

Option 5: Reroute and Undergrounding around Inaja Picnic Area

TL626 in its current location crosses due south of the Inaja National Recreation Trail and Inaja Memorial Picnic Area. (This site honors the 11 firefighters who lost their lives battling the 1956 Inaja Forest Fire.) The TL626 poles, conductors, marker balls, and support cables impair the view of the fire area from the National Recreation Trail.

Under this alternative, a portion of TL626 would be relocated around the Inaja Picnic Area to restore the scenic view (Figure B-4c). Beginning at pole Z213738, TL626 would be extended approximately 1,060feet northeast along the ridge, before turning northwest to a point adjacent to SR-78. The line would transition to an underground line traversing approximately 400 feet of parking lot to the west. The line would transition again to an overhead alignment for approximately 1,000 feet, joining the current alignment at pole Z213744.

This option would require CPUC and Forest Service approval.

B.3.2.2 C157 Partial Relocation to Avoid Designated Wilderness

The Forest Service proposed action would relocate the section of C157 out of the Pine Creek and Hauser Wilderness areas and into the area between the Hauser and Pine Creek Wilderness areas. Two options for the alignment have been identified as shown in Figure B-5a and described below. The section of line that is replaced would be removed and the affected area restored consistent with wilderness objectives. The relocated section of line would be constructed to the same standard described by the applicant. Under these two options, no new access roads will be required.

Option 1 – SDG&E Proposed Alignment Between Two Wilderness Areas: Under this option, in order to avoid the Pine Creek and Hauser Wilderness areas, approximately 1.1 miles of the existing line would be realigned from poles P278722 to P278741 (see Figure B-5; SDG&E 2014c). This realignment would be located approximately 0.25 mile south from the existing alignment at its farthest point. The alignment would measure approximately 4.1 miles in total length with approximately 1.8 miles crossing Forest Service-administered land, and would be approximately 0.6 mile longer than SDG&E's proposed project, which is 3.5 miles long.

Specifically, the C157 line would travel northeast from Skye Valley Road for approximately 0.2 mile before entering the CNF. The line would then travel for approximately 0.6 mile southeast through the CNF along Skye Valley Road. The line would then exit the CNF and continue southeast for approximately 1.1 miles through private land before crossing the northern inlet of Barrett Lake. The line would continue east for approximately 0.2 mile before entering the CNF, and then would travel through the CNF along Forest Route 17504 for approximately 1 mile. The line would exit the CNF for less than 0.1 mile, and then continue through the CNF for approximately 0.4 mile. The line would travel northeast through private land for approximately 0.5 mile to terminate at Skye Valley Ranch. No new access roads are anticipated to be required. Construction of this option would result in a temporary impact area of approximately 1.07 acres and a permanent impact area of approximately 0.01 acre.

Option 2 – City of San Diego Modified Alignment: As described under Option 1, the Forest Service proposed action would relocate the section of C157 out of the Pine Creek and Hauser Wilderness areas. However, under Option 2 the segment of the line on City-owned property would be shifted to the north as shown in Figure B-5a. From pole P4, the alignment would move in straight line to P278724. In addition, poles P4, P5, and P6 would be moved closer to the edge of the existing private road north of Barrett Lake. Also, under this alternative pole P7 would be moved to the west side of the road to avoid crossing the road in two places. In addition, under this Option, pole P13 would be eliminated or set and maintained by helicopter. The remaining section of the line outside the City boundary would be constructed as outlined under Option 1. This alignment would be approximately 0.02 mile longer than Option 1. Overall the alignment is approximately 4.1 miles in total length, which is approximately 0.6 miles longer than SDG&E's proposed project, which is approximately 3.5 miles. The section of line that is replaced would be removed and the affected area restored consistent with wilderness objectives. The relocated section of line would be constructed to the same standard described by the applicant. No new access roads are anticipated to be required. Construction of this option would result in similar temporary impacts described above under Option 1.

Options 1 and 2 would require CPUC and Forest Service approval. In addition, the portion of the rerouted C157 that crosses the City of San Diego jurisdictional lands under these options would require consideration of City of San Diego requirements.

B.3.2.3 C440 Mount Laguna Underground Alternative

In addition to the underground segments proposed by SDG&E (see Section B.3.1.10, SDG&E's proposed rebuild on C440), the segments of C440 located within the Mount Laguna Recreation Area would also be placed underground. This would include approximately 14.3 miles of existing 12 kV line, with 1.5 miles of line on private inholdings, and 12.8 miles of line on National Forest System lands. These lines would be relocated underground along existing roads.

The existing 348 poles would be removed and any existing access roads not used for underground locations would be restored.

This option would require CPUC and Forest Service approval.

B.3.2.4 BIA Proposed Action

The BIA, as cooperating agency and in consultation with the La Jolla Indian Tribe, proposes modifications to TL682 located on tribal lands as part of the federal proposed action. Under this action, approximately 1,500 feet of TL682 would be placed underground between poles Z118079 to Z118082, through an economic development zone located on the La Jolla Reservation. The transition pole for Z118082 would be moved northeast from its current location. In addition, pole Z118085 would be moved to the south from its current location. Further, several poles to the west of pole Z118079 would be realigned onto tribal lands to avoid allotted properties on the reservation.

This option would require CPUC and Forest Service approval. In addition, the relocated and undergrounded segments of TL682 that cross La Jolla Reservation lands would require approval from the Tribe and BIA.

B.3.2.5 BLM Proposed Action

In addition to the power line replacement work included in SDG&E's proposed project, the BLM would be issuing new or renewed ROW grants for the transmission lines on public lands administered by the BLM. This includes portions of SDG&E's proposed power line replacement project for TL629, TL625, and TL6923 as described in Table B-2. The ROW grants would be issued under the authority of Title V of the Federal Land Policy and Management Act of 1976. The ROW grants would authorize the ongoing operation and maintenance of the transmission lines.

B.4 Permanent Land Requirements

B.4.1 MSUP

The area occupied within the CNF study area by existing SDG&E electric facilities, including power lines, distribution circuits, and associated facilities, is approximately 225 acres. The area occupied by maintenance roads within the CNF is approximately 64 acres.

B.4.2 Right-of-Ways

SDG&E currently has existing ROWs, or franchise rights, for those portions of the 12 kV distribution lines to be undergrounded along public roadways and along the entire lengths of the 69 kV power lines and 12 kV distribution lines. Within the CNF, existing ROWs for overhead 69 kV power lines are 30 feet wide, and existing ROWs for overhead distribution

lines are 20 feet wide. Outside the CNF, existing ROWs have varying widths based on individual property owner agreements.

B.4.3 Access Roads

As discussed in Section B.3 the project proposes to remove approximately 11.2 miles of existing access roads within and outside the CNF. No new access roads are proposed. Repair of existing access roads is anticipated to occur within the existing footprint of the road.

B.4.4 New Power Line Structures

As described in Section B.3, SDG&E's proposed project would involve the replacement of existing wood poles with weathered steel poles. The permanent footprint for each direct-bury steel pole would range from 1.1–2.8 feet in diameter, with an average of approximately 2 feet in diameter. Installation of 1,645 direct bury steel poles would result in a total permanent footprint of less than 0.2 acre and installation of 457 micro-piled steel poles would result in a total permanent footprint of less than 0.5 acre.

Sample steel pole with reflective tape and climbing pegs.

In accordance with GO 95 each new power line will require reflective tape that is no more than 40 inches below the lowest conductor whose voltage is above 750 (see inset). In addition, poles will include climbing pegs for workers to access power lines during operations and maintenance activities.

B.4.5 Undergrounding

Table B-5, Underground Trenching Summary, provides the approximate dimensions, footprint, and number of vaults to be used for each underground segment. As shown in Table B-5, the total approximate permanent footprint for undergrounding is 3.9 acres.

Table B-5
Underground Trenching Summary

Distribution Line	Approximate Length (Miles)			Approximate Width (Feet)	Approximate Footprint (Acres)			Approximate Number of Vaults		
	Within CNF	*Outside CNF*	*Total*		*Within CNF*	*Outside CNF*	*Total*	*Within CNF*	*Outside CNF*	*Total*
C79	0.0	2.8	2.8	2.5	0.0	0.9	0.9	0	19	19
C440	7.5	0.8	8.4	2.5	2.3	0.3	2.5	51	4	55
C449	1.5	0.3	1.8	2.5	0.4	0.1	0.5	10	2	12
Total	**9.0**	**4.0**	**13.0**	**—**	**2.7**	**1.2**	**3.9**	**61**	**25**	**86**

Source: SDG&E 2013a.

B.5 Project Construction

This section presents an overview of the construction schedule, activities, and methods typically used for removal and construction of replacement poles and power and distribution lines as well as undergrounding activities.

B.5.1 Construction Schedule

Construction of SDG&E's proposed project is anticipated to require 5 years to complete from site development through final energization. Table B-6, Construction Schedule, provides SDG&E's proposed schedule for the proposed project, as defined in its PTC application. While the schedule would be modified to begin after CPUC approval, this table illustrates the approximate length of each construction phase.

Construction activities would generally be limited to no more than 12 hours per 24-hour period, 6 days per week, as needed. On occasion, construction activities may be required at night or on weekends to minimize impacts to schedules and to facilitate cutover work, and as required by other property owners or agencies, such as the California Independent System Operator (CAISO), which may require outages of certain portions of the electric system.

Table B-6
Construction Schedule

Power Lines	Approximate Duration (Months)
TL682	9
TL626	15
TL625	21
TL629	29
TL6923	8
C79 overhead and underground	10
C78	4
C157	4
C442	6
C440 overhead and underground	18
C449	6

Source: SDG&E 2013a.

B.5.2 Construction Activities and Methods

For all access, fly yard, and staging areas discussed below, SDG&E anticipates using disturbed areas and does not plan extensive vegetation clearing or any tree removal. However, during the 5-year construction period, trees may require trimming, and some mature bushes and other scrub vegetation may be cleared to reduce or eliminate potential safety hazards. Where clearing is needed, including in pole, stringing, trench, and guard structure work areas, mowing and clearing

of vegetation to ground level would be done with gas-powered weed abatement tools, sickles, rakes, or other hand tools as required for safe use of the areas. During construction, SDG&E would access all proposed work areas by motor vehicle if access roads are available, or by helicopter if surface access is unavailable or infeasible due to site conditions. Following construction, all areas temporarily disturbed by construction would be restored to preconstruction conditions (to the extent practicable).

B.5.2.1 Temporary Work Area Requirements

Anticipated workspace requirements are described in detail in the following subsections and are summarized in Table B-7, Temporary Work Area Summary.

Table B-7
Temporary Work Area Summary

Work Area Type		Approximate Quantity			Required Improvements	Approximate Dimensions (Feet)	Total Approximate Area (Acres)		
		Within CNF	*Outside CNF*	*Total*			*Within CNF*	*Outside CNF*	*Total*
69 kV Power Line									
TL682	Direct-Bury Steel Pole Work Area	23	169	192	Vegetation removal and minor grading may be required.	40-foot diameter	0.7	4.9	5.6
	Self-Supported Steel Pole Work Area	7	60	67	Vegetation removal and minor grading may be required.	40-foot diameter	0.2	1.7	1.9
	Staging Area	0	3	3	Vegetation removal, minor grading, and gravel laydown may be required.	Varies	0.0	4.1	4.1
	Stringing Site	4	31	35	Vegetation clearing may be required.	Varies	2.1	12.2	14.3
	Fly Yard	0	2	2	Vegetation clearing may be required.	Varies	0.0	5.2	5.2
	Guard Structure	2	27	29	Vegetation clearing may be required.	3-foot diameter	<0.1	<0.1	<0.1
TL626	Direct-Bury Steel Pole Work Area	93	114	207	Vegetation removal and minor grading may be required.	40-foot diameter	2.7	3.3	6.0
	Self-Supported Steel Pole Work Area	27	45	72	Vegetation removal and minor grading may be required.	40-foot diameter	0.8	1.3	2.1
	Wood Pole Removal Area	0	1	1	Vegetation removal and minor grading may be required.	40-foot diameter	0.0	<0.1	<0.1
	Staging Area	0	2	2	Vegetation removal, minor grading, and gravel laydown may be required.	Varies	0.0	0.9	0.9
	Stringing Site	8	20	28	Vegetation clearing may be required.	Varies			12.1
TL625	Direct-Bury Steel Pole Work Area	48	124	172	Vegetation removal and minor grading may be required.	40-foot diameter	1.4	3.5	4.9
	Self-Supported Steel Pole Work Area	24	71	95	Vegetation removal and minor grading may be required.	40-foot diameter	0.7	1.9	2.6
	Wood Pole Removal Area	6	7	13	Vegetation removal and minor grading may be required.	40-foot diameter	0.2	0.2	0.4

Table B-7
Temporary Work Area Summary

	Work Area Type	Approximate Quantity			Required Improvements	Approximate Dimensions (Feet)	Total Approximate Area (Acres)		
		Within CNF	*Outside CNF*	*Total*			*Within CNF*	*Outside CNF*	*Total*
	Staging Area	0	14	14	Vegetation removal, minor grading, and gravel laydown may be required.	Varies	0.0	14.9	14.9
	Stringing Site	12	34	46	Vegetation clearing may be required.	Varies	6.1	14.7	20.8
	Fly Yard	2	4	6	Vegetation clearing may be required.	Varies	0.4	6.5	6.9
	Guard Structure	8	30	38	Vegetation clearing may be required.	3-foot diameter	<0.1	<0.1	<0.1
TL629	Direct-Bury Pole Work Area	88	187	275	Vegetation removal and minor grading may be required.	40-foot diameter	2.5	5.4	7.9
	Self-Supported Pole Work Area	49	118	167	Vegetation removal and minor grading may be required.	40-foot diameter	1.4	3.3	4.7
	Wood Pole Removal Area	0	2	2	Vegetation removal and minor grading may be required.	40-foot diameter	0.0	0.1	0.1
	Staging Area	0	5	5	Vegetation removal, minor grading, and gravel laydown may be required.	Varies	0.0	9.7	9.7
	Stringing Site	6	48	54	Vegetation clearing may be required.	Varies	3.1	23.8	26.9
	Fly Yard	0	3	3	Vegetation clearing may be required.	Varies	0.0	1.3	1.3
	Guard Structure	4	4	8	Vegetation clearing may be required.	3-foot diameter	<0.1	<0.1	<0.1
TL6923	Direct-Bury Steel Pole Work Area	18	63	81	Vegetation removal and minor grading may be required.	40-foot diameter	0.4	1.7	2.1
	Self-Supported Steel Pole Work Area	1	55	56	Vegetation removal and minor grading may be required.	40-foot diameter	<0.1	1.4	1.5
	Stringing Site	4	29	33	Vegetation clearing may be required.	Varies	0.5	5.2	5.7
	Guard Structure	0	1	1	Vegetation clearing may be required.	3-foot diameter	0.0	<0.1	<0.1

Table B-7
Temporary Work Area Summary

Work Area Type		Approximate Quantity			Required Improvements	Approximate Dimensions (Feet)	Total Approximate Area (Acres)		
		Within CNF	*Outside CNF*	*Total*			*Within CNF*	*Outside CNF*	*Total*
12 kV Distribution Line									
C79	Wood Pole Removal Area	46	18	64	Vegetation removal and minor grading may be required.	20-foot diameter	0.3	0.1	0.4
	Staging Area	1	4	5	Vegetation removal, minor grading, and gravel laydown may be required.	Varies	0.3	0.2	0.5
	Fly Yard	1	0	1	Vegetation clearing may be required.	Varies	<0.1	0.0	<0.1
	Stringing Site	2	23	25	Vegetation clearing may be required.	Varies	<0.1	0.2	0.3
	Underground Duct Bank	0	1	1	Vegetation removal and minor grading may be required.	<12-foot width	0	4.1	4.1
C78	Direct-Bury Steel Pole Work Area	30	14	44	Vegetation removal and minor grading may be required.	20-foot diameter	0.2	0.1	0.3
	Wood Pole Removal Area	21	0	21	Vegetation removal and minor grading may be required.	20-foot diameter	0.2	0.0	0.2
	Stringing Site	0	4	4	Vegetation clearing may be required.	Varies	0.0	0.1	0.1
C157	Direct-Bury Steel Pole Work Area	28	29	57	Vegetation removal and minor grading may be required.	20-foot diameter	0.2	0.2	0.4
	Staging Area	1	1	2	Vegetation removal, minor grading, and gravel laydown may be required.	Varies	0.1	0.2	0.3
	Stringing Site	1	2	3	Vegetation clearing may be required.	Varies	<0.1	0.1	0.2
C442	Direct-Bury Steel Pole Work Area	82	47	129	Vegetation removal and minor grading may be required.	20-foot diameter	0.6	0.3	0.9
	Staging Area	1	1	2	Vegetation removal, minor grading, and gravel laydown may be required.	Varies	<0.1	0.3	0.4
	Stringing Site	6	4	10	Vegetation clearing may be required.	Varies	0.1	0.1	0.2
C440	Direct-Bury Steel Pole Work Area	323	117	440	Vegetation removal and minor grading may be required.	20-foot diameter	2.3	0.8	3.1

Table B-7
Temporary Work Area Summary

		Within CNF	*Outside CNF*	*Total*			*Within CNF*	*Outside CNF*	*Total*
	Wood Pole Removal Area	81	18	99	Vegetation removal and minor grading may be required.	20-foot diameter	0.6	0.1	0.7
	Staging Area	10	0	10	Vegetation removal, minor grading, and gravel laydown may be required.	Varies	0.8	0.0	0.8
	Stringing Site	107	13	120	Vegetation clearing may be required.	Varies	1.7	0.3	2.0
	Underground Duct Bank	3	1	4	Vegetation removal and minor grading may be required.	<12-foot width	10.9	13	12.2
C449	Direct-Bury Steel Pole Work Area	35	13	48	Vegetation removal and minor grading may be required.	20-foot diameter	0.2	0.1	0.3
	Wood Pole Removal Area	87	15	102	Vegetation removal and minor grading may be required.	20-foot diameter	0.6	0.1	0.7
	Staging Area	0	1	1	Vegetation removal, minor grading, and gravel laydown may be required.	Varies	0.0	0.2	0.2
	Stringing Site	22	8	30	Vegetation clearing may be required.	Varies	0.3	0.1	0.4
	Underground Duct Bank	1	1	2	Vegetation removal and minor grading may be required.	<12-foot width	2.2	0.4	2.6

Source: SDG&E 2013a.

Access

As discussed in Section B.3.1, SDG&E currently maintains a network of access roads, spur roads, and turnarounds to support and provide access to each of the power lines proposed for replacement. Access roads are approximately 12–15 feet wide and 20 feet wide at curves.

Table B-8, Access Road Summary, provides a summary of the number of miles and acreage of access roads associated with each power and distribution line. In areas where the power or distribution lines would be removed or relocated, access roads would be removed and the areas returned to pre-construction vegetative conditions (to the extent practicable). Where existing access roads are damaged, repair consisting of smoothing, stabilizing, and improving the surface would occur. SDG&E's proposed project would remove approximately 11 miles of existing access roads.

Table B-8
Access Road Summary

Power Lines	Approximate Length (Miles)			Approximate Width (Feet)	Approximate Area (Acres)		
	Within CNF	*Outside CNF*	*Total*		*Within CNF*	*Outside CNF*	*Total*
69 kV Power Lines							
TL682	1.1	—	1.1	12–20	2.7	—	2.7
TL626	9.9	0.2	10.1		24.0	0.5	24.5
TL625	11.0	0.3	11.3		26.7	0.7	27.4
TL629	6.9	0.1	7.0		16.8	0.4	17.1
TL6923	1.1	0.3	1.4		2.6	0.9	3.5
Total	**30.0**	**0.9**	**30.9 miles**		**72.8**	**2.5**	**75.2 acres**
12 kV Distribution Lines							
C79	4.1	0.1	4.2	12–20	9.4	0.2	9.6
C78	<0.1	<0.1	0.1		0.1	0.1	0.2
C157	0.3	0.1	0.4		0.9	0.2	1.1
C442	3.6	0.4	4.0		8.8	1.1	9.8
C440	4.7	<0.1	4.7		11.3	0.0	11.4
C449	2.8	—	2.8		6.7	—	6.7
Total	**15.6**	**0.8**	**16.4 miles**		**37.1**	**1.5**	**38.6 acres**

Source: SDG&E 2013a.
Note: A 20-foot-wide buffer was used for spatial analysis to capture the maximum width of access road area.

Where existing road access is not feasible, SDG&E would access sites by helicopter. The helicopters would be used to deliver and remove construction material and personnel from areas with rugged terrain and where ground access would not safely accommodate the required construction equipment and vehicles. Helicopter models typically used for pole replacements include the Erickson Air Crane, Hughes 500D, Kaman KMAX, or Bell 206L Long Ranger.

SDG&E proposes the use of helicopters at approximately 514 pole locations. Helicopters would typically be used between 6:30 a.m. and 4:00 p.m., and their flight path would follow the ROW to the extent practicable.

Staging Areas

SDG&E would utilize approximately 37 staging areas for 69 kV power line activities and 7 staging areas for 12 kV distribution line activities. As provided in Table B-7, total area required for staging areas is anticipated to be approximately 31.8 acres. Staging areas would be used for storage and preparation of construction materials, including replacement poles and conductors, as well as construction equipment before delivery to the individual pole work areas. The poles would be assembled at the staging areas, fly yards, and/or in pole work areas. Equipment, materials, and vehicle parking would be accommodated at these locations for the duration of construction associated with each staging area. Staging areas would be accessed using public roadways and existing access roads.

Pole Work Areas

In order to accommodate construction equipment and activities during pole replacement and reconductoring of the 69 kV power lines, temporary construction areas may be cleared at each pole location. Each pole work area would require less than 0.1-acre work area, measuring approximately 20–40 feet in diameter. A total of approximately 44.7 acres of temporary disturbance would be required to facilitate pole installation.

Stringing Sites

Approximately 388 stringing sites would be required for installing new conductors. Each stringing site would vary in size depending on site conditions, but would result in an average temporary disturbance of approximately 0.2 acre per site. SDG&E does not anticipate grading would be required for most stringing sites. Stringing sites would be spaced approximately 7,000 feet apart for 69 kV power lines, and approximately 1,500 feet apart for 12 kV distribution lines.

Fly Yards

A total of three fly yards within the CNF and nine fly yards outside the CNF would be utilized for helicopter take-off and landing, pole and equipment temporary storage, and pole assembly. Fueling would typically be conducted at airports or at off-site fueling locations, but may occur at fly yards. Helicopters would also utilize existing access roads and staging areas for landings. Fly yards would vary in size depending on site conditions, but would result in an average temporary disturbance of approximately 1.1 acres per fly yard—approximately 0.5 acre of total temporary

disturbance within Forest Service-administered lands and 13.0 acres of total temporary disturbance outside of Forest Service-administered lands. Fly yards would be accessed using public roadways and existing access roads.

Trench Work Areas

To accommodate the installation of the underground duct banks and vaults, temporary workspaces centered on the duct bank alignments would be established. These areas would be cleared and graded as needed to provide a safe working space for the operation of construction equipment. The duct banks would require an approximately 10- to 12-foot-wide workspace. A total of approximately 1.3 miles of workspace, requiring approximately 19 acres, would be established prior to construction. Trench work areas would be accessed using public roadways and existing access roads.

Guard Structures

Approximately 76 guard structures would be required for safe road crossings during conductor stringing. Where possible, SDG&E would utilize bucket trucks as temporary guard structures to minimize temporary impacts. Where guard structures must be installed, they would typically consist of two approximately 1.5-foot-wide wood poles supporting a cross arm or wood pole section secured horizontally in between the wood poles. Assuming a scenario where no bucket trucks are used as guard structures, these guard structures would result in a total temporary disturbance of less than 0.1 acre.

Existing Pole Removal

Removal of existing wood poles would require a less than 0.1-acre work area, measuring 20 feet to 40 feet in diameter. A total of approximately 45.7 acres of temporary disturbance would be required to facilitate pole removal.

B.5.2.2 Construction Methods

The following provides a description of the proposed methods of each construction activity.

Access Road

Where existing access roads need repair, a grader would be used to blade and smooth the road in accordance with the engineered specifications. Importing and compacting more stable materials on existing facilities in unstable areas may also be required.

Existing Pole Removal

Once the replacement poles have been constructed, the new conductor has been installed, and any third-party lines have been relocated to the replacement poles, SDG&E would remove the existing wood poles. Pole-removal activities would utilize bucket trucks to remove crossarms and the conductor, or in locations where there is no truck access, helicopters would be utilized to remove poles. Poles would be completely removed where possible. The holes would be backfilled with native soil or materials similar to the surrounding area, and the site would be restored. If complete removal is not practical (e.g., if the pole cannot be pulled from the ground), the pole would be sectioned and cut at the base, or 6–12 inches below the surface, and covered with native material. In addition, all anchors and stub poles for 69 kV power lines would also be removed. Old poles, associated hardware, and any other debris generated from construction activities would be removed from the site and placed on flatbed trucks for recycling or disposal at an approved facility.

Steel Pole Installation

SDG&E would notify the Underground Service Alert a minimum of 48 hours in advance of excavating or conducting other ground-disturbing activities in order to identify buried utilities. Exploratory excavations (potholing) would also be conducted to verify the locations of existing facilities in the field, if necessary.

Direct-Bury Steel Poles: Installation of direct-bury steel poles would begin with the excavation of holes approximately 20–48 inches in diameter and approximately 7–12 feet deep, depending on the height of the pole. Pole holes would be excavated using a small, truck-mounted or track-mounted drill rig if the site is land-accessible, or by platform-mounted drilling equipment if accessible only by helicopter. Rock splitting/blasting may be required if crews encounter rock while digging. Pole-hole drilling would excavate between approximately 0.7 cubic yard (CY) and 2.2 CY of soil per pole. New poles would be delivered to the site by a flatbed truck or by helicopter and placed in holes dug using a machine digger and/or hand digger. The annular space between 69 kV power line poles and hole walls would then be backfilled with concrete, with an additional foot of crushed rock placed beneath the bearing plate if needed due to drainage and soil conditions. Should access or site conditions prohibit the use of a concrete backfill, 69 kV power line pole holes may be backfilled and compacted with the previously excavated soil. Any remaining excavated material would be placed around the holes or spread onto access roads and adjacent areas.

Self-Supported Steel Poles: Poles required to resist terminal loads would be installed on micro-pile foundations where local subsurface conditions warrant the use of this foundation

type.[1] Micro-pile foundation installation would begin with the excavation of holes approximately 8 inches in diameter by approximately 10–40 feet deep (requiring the removal of approximately 0.1–0.5 CY of soil), depending on the properties of the soil or rock underlying the surface. A steel rod would be inserted into the hole, centered, and the remaining space filled with a mixture of water, cement, and sand. The steel rod would protrude above grade and would connect to the structure or a small concrete cap supporting the structure above grade. Holes for micro-pile foundations would be drilled using a small drill rig operated from the top of an elevated platform, measuring approximately 8 feet by 8 feet on 4–6 legs, and approximately 6 feet above grade. Depending on requirements for foundation strength, 4–12 micro-piles would be arranged in a circular pattern to take the place of a poured concrete foundation. New poles would be delivered to the site by a flatbed truck and assembled on site using a truck-mounted crane, or sections would be flown in by helicopter. If there is no truck access to the job site, poles would be partially assembled at a staging area and flown to the work area in sections by helicopter. Any remaining excavated material would be placed around the holes or spread onto access roads and adjacent areas.

Conductor Installation

SDG&E would coordinate with the CAISO to obtain all the necessary line clearances prior to beginning new conductor installation. This would ensure that SDG&E can take the electric lines out of service and redistribute power to service centers and customers. Prior to stringing the new conductor, temporary guard structures—typically consisting of vertical wood poles with crossarms—would be installed at road crossings and crossings of energized electric and communication lines, preventing the conductors from sagging onto roadways or other lines during conductor installation. In some cases, bucket trucks may also be used as guard structures. As an alternative to using temporary guard structures, SDG&E may use flaggers to halt traffic for brief periods while overhead conductors are installed at road crossings. Conductor stringing would take place within the designated stringing sites. A rope would be pulled through the rollers from structure to structure. The rope may be pulled through the rollers using a helicopter in instances where terrain is difficult; during this operation, the rope may drag between structures in some spans. Once the rope is in place, it would be attached to a steel or synthetic cable and pulled back through the sheaves, and into place using conventional tractor-trailer pulling. The conductor would be pulled through each structure under a controlled tension to keep the conductor elevated and away from obstacles, thereby minimizing damage to the line and protecting the public.

[1] As an alternative to micro-pile foundation poles, poured foundation poles may be installed where local subsurface conditions warrant the use of this foundation type. The maximum permanent footprint and total footprint associated with poured foundation poles would be the same as for micro-pile foundation poles.

The lowest 69 kV conductor would be installed with a minimum ground clearance of approximately 30 feet and 25 feet where there is pedestrian access only. The lowest 12 kV conductor would be installed with a minimum ground clearance of 25 feet and 17 feet where there is pedestrian access only.

Removal of Existing Conductors

SDG&E would accomplish the removal of existing conductors in a method similar to the reverse of the conductor installation process. The old conductors would be wound onto wooden spools, placed on flatbed trucks, and recycled at an approved facility.

Underground Duct Package and Installation

Prior to trenching for underground distribution lines, SDG&E would notify other utility companies (via Underground Service Alert) to locate and mark existing underground utilities along the proposed underground alignments. Exploratory excavations (potholing) would also be conducted to verify the locations of existing facilities in the field, if necessary.

Trenches would be excavated using a backhoe, saw cutter, and other trenching equipment as warranted by site conditions. The depth of the trench would be determined by localized topography and potential conflicts, but is anticipated to be approximately 5 feet deep, with a width of approximately 2.5 feet. Dewatering of the trenches is not anticipated, but may be required based on weather conditions during construction. If trench water is encountered, trenches would be dewatered using a portable pump and disposed of in accordance with applicable regulations and permits. Once installed, the depth from grade to the top of the concrete duct package would be approximately 2.5 feet, and the depth from grade to the top of the conduit in the duct package would be approximately 3 feet. The trench alignment would proceed to the riser pole and support the transition from the underground to overhead conductors. Eight new riser poles would be installed with the same equipment previously described for installation of the steel poles.

The underground distribution lines would be installed in a duct bank containing two to three 4- to 5-inch-diameter polyvinyl chloride (PVC) conduits encased in concrete or placed in sand or native fill. In order to facilitate the pulling and splicing of the cables, underground concrete splice vaults measuring approximately 8 feet long, 5.5 feet wide, and 7 feet deep would be installed in line with the underground duct banks every approximately 500–800 feet. These vaults would also provide access to the underground cables for maintenance, inspection, and repair during operation.

During trenching activities, the trench would be widened at the underground vault locations to allow for approximately 2 feet of additional clearance. The pre-formed, steel-reinforced, precast concrete splice vaults would be transported to the associated work areas on flatbed trucks and lowered into place using small, truck-mounted cranes. The splice vaults would then be connected to the underground duct banks before being covered with at least 3 feet of compacted fill. The trench alignment would proceed to the riser pole and support the transition between the underground and the overhead conductors. After installation of the concrete duct bank, approximately 26,058 CY of excavated trench material would be used to backfill the trench. SDG&E does not anticipate that engineered backfill would be required. The remainder of the excavated material would be spread across the ROW or access roads, if possible, or disposed of at an approved facility, such as the Mountain Empire Construction and Operations (MECO) yard in Pine Valley.

After trenching activities for the underground duct banks have been completed, the PVC cable conduits would be installed (and separated by spacers), and concrete would be poured around the conduits to form the duct banks. Upon completion of the duct bank, the trenches would be backfilled with these materials and the cables would be installed in the duct banks. Each cable segment would be pulled into the duct bank and terminated at the riser pole where the line converts to an overhead configuration. To pull the cable through the ducts, a cable reel would be placed at one end of the section and a pulling rig at the other end. A larger rope would then be pulled into the duct using a fish line and attached to the cable puller, which pulls the cable through the duct. Lubricant would be applied to the cable as it enters the duct to decrease friction during pulling. After installation of the conductor, the ground surface would be restored to near pre-construction conditions and repaved or reseeded as appropriate.

Cleanup and Post-Construction Restoration

All areas that are temporarily disturbed around each structure, areas used for conductor pulling, and all staging areas would be restored to pre-construction conditions, to the extent practicable, following installation of the replacement poles and reconductoring of the lines. This would include the removal of all construction materials and debris, returning areas to their original contours, and reseeding, as needed.

B.5.3 Construction Personnel and Equipment

According to the preliminary construction schedule proposed by SDG&E, peak construction personnel anticipated to be on site for construction would range from 33 individuals on TL682 and TL6923 to a maximum of 132 individuals on TL629 during peak construction activity. For TL626, 66 individuals, and TL625, 99 individuals, would be anticipated to be on site during peak construction activity. The peak construction personnel anticipated for overhead and underground activities range from 6–12 individuals to be on site for construction of the distribution lines. The

overall peak number of individuals working on SDG&E's proposed projects in the study area are approximately 100 crewmembers. Table B-9, Peak Construction Personnel, presents the peak construction personnel anticipated for each of SDG&E's proposed projects.

Table B-10, Typical Construction Equipment by Activity, presents the equipment requirements of the power and distribution lines for the various activities associated with the construction phases of the projects, including the anticipated duration of equipment use. Project construction would involve the use of a wide variety of heavy construction equipment on site. In addition to this equipment, pickup trucks and worker vehicles would travel to and from SDG&E's proposed projects work sites daily. It is anticipated that delivery trucks would travel to and from the staging areas 12 times per week, or up to 24 times per week during peak activities. During active construction activities, approximately one water truck, completing an average of two trips per day, may be required to deliver water to each active construction site for dust control.

During peak construction, a maximum of 38 crews working could be required at one time, resulting in between approximately 304 and 532 trips per day for construction crews and equipment/material deliveries during peak conditions across the 563,200-acre project area. However, the average number of crews working at one time would be 10, resulting in between 80 and 140 trips per day across the entire project area. Further, the maximum number of helicopter flights would not exceed 64 flights per day across the project area.

Table B-9
Peak Construction Personnel

Project Components	Position	Number of Personnel Required
TL682	Foremen	3
	Operators	10
	Linemen	20
TL626	Foremen	6
	Operators	20
	Linemen	40
TL625	Foremen	9
	Operators	30
	Linemen	60
TL629	Foremen	12
	Operators	40
	Linemen	80
	Underground Crew	8
TL6923	Foremen	3
	Operators	10
	Linemen	20

Table B-9
Peak Construction Personnel

Project Components	Position	Number of Personnel Required
C79	Foremen	1
	Operators	2
	Linemen	2
	Underground Crew	5
C78	Foremen	1
	Operators	6
	Linemen	2
	Underground Crew	0
C442	Foremen	1
	Operators	5
	Linemen	2
	Underground Crew	0
C440	Foremen	1
	Operators	2
	Linemen	2
	Underground Crew	6
C157	Foremen	1
	Operators	3
	Linemen	2
	Underground Crew	0
C449	Foremen	1
	Operators	2
	Linemen	2
	Underground Crew	7
	Total	**419**

Source: SDG&E 2013a and 2013b.

Table B-10
Typical Construction Equipment by Activity

Project Components	Activity	Equipment	Use	Approximate Quantity	Approximate Duration of Activity (Days)	Average Duration of Use (Hours per day)
Power Lines	Improve Access Roads (per mile)	Bulldozer	Grade access roads	1	4	10
		Road Grader	Grade access roads	1	4	10
		Loader	Load haul trucks, transport materials	1	4	2

Table B-10
Typical Construction Equipment by Activity

Project Components	Activity	Equipment	Use	Approximate Quantity	Approximate Duration of Activity (Days)	Average Duration of Use (Hours per day)
		1-ton Pickup Truck	Transport personnel	1	4	3
		Water Truck	Suppress dust	2	4	8
		Mower	Mow vegetation	1	4	3
	Construct Micro-pile Foundations (per foundation)	*Helicopter Set*				
		Portable Water Tank	Dust control	1	2	4
		Drilling Rig	Drill foundation holes	1	2	8
		Compressor	Operate tools	1	4	8
		1-ton Pickup Truck	Transport personnel	1	4	3
		Helicopter	Deliver materials, set plate	1	4	2
		Truck Set				
		Water truck	Dust/fire control	1	2	2
		Fork Lift	Moving equipment in the ROW	1	1	6
		Drilling Rig	Drill foundation holes	1	2	8
		Compressor	Operate tools	1	4	8
		Boom Truck	Set plate	1	1	4
		Flatbed Truck	Deliver materials	1	4	3
		1-ton Pickup Truck	Transport personnel	1	4	3
Power Lines	Install Micro-pile Poles	*Helicopter Set*				
		Helicopter	Deliver equipment, set pole base and top sections	1	1	1
		Compressor	Operate tools	1	1	1
		1-ton Pickup	Transport crews	1	1	1
		Flatbed Truck	Transport equipment to helicopter landing zone	1	1	1
		Truck Set				
		Boom Truck	Set base and top section	1	1	3

Table B-10
Typical Construction Equipment by Activity

Project Components	Activity	Equipment	Use	Approximate Quantity	Approximate Duration of Activity (Days)	Average Duration of Use (Hours per day)
		Bucket Truck	Frame structures/spread existing phases	1	1	3
		Water Truck	Dust control	1	1	2
		1-ton Pickup Truck	Transport personnel	1	1	2
		Flatbed Truck	Transport equipment	1	1	2
	Construct Direct-Bury Poles (per pole)	*Helicopter Set*				
		Compressor	Dig hole by hand	1	4	8
		Concrete	Concrete backfill	1	1	2
		Helicopter	Deliver equipment, bottom section, and top section of pole	1	2	0.5
		1-ton Pickup Truck	Transport personnel	1	5	3
		Truck Set				
		Drilling Rig	Drill anchor holes	1	3	8
		Loader	Load spoil and waste	1	1	4
Power Lines	Construct Direct-Bury Poles (per pole)	Water Truck	Dust/fire control	1	3	1
		Air Compressor	Operate tools	1	3	8
		Concrete Truck	Deliver slurry	1	1	2
		Bucket Truck	Set the top section of the pole	1	1	2
		Flatbed Truck	Deliver pole sections	1	1	3
		1-ton Pickup Truck	Transport personnel	1	3	3
		Boom Truck	Set base and top section	1	1	2
	String Conductor (per phase)	Puller and Tensioner	Pull new conductor into place and secure at correct tension	1	1	3

Table B-10
Typical Construction Equipment by Activity

Project Components	Activity	Equipment	Use	Approximate Quantity	Approximate Duration of Activity (Days)	Average Duration of Use (Hours per day)
		Reel Trailer	Feed new conductor to the pulling rig	1	1	3
		Bucket Truck	Install conductor and act as guard structure	1	1	3
		1-ton Pickup Truck	Transport personnel	2	1	3
		Water Truck	Dust/fire control	2	1	3
	Undergrounding (TL629E, per 300 feet)	Saw Cut	Cut pavement and road materials	1	1	8
		Backhoe	Excavate	2	1	8
		Bobcat	Moving dirt and steel plates	1	1	2
		Dump Truck	Hauling dirt and asphalt	3	1	8
		Water Truck	Dust control, fire patrol	1	1	8
		Concrete Truck	Slurry hauling	5	1	2
		Foreman Truck	Transport personnel	3	1	8
Power Lines	Undergrounding (TL629E, per 300 feet)	Crew Truck	Transport personnel	2	1	8
		Air Compressor	Jackhammering, blowing rope in conduits	1	1	8
		Pavement Roller	Asphalt	1	1	8
		Vibrating Plate	Asphalt	1	1	2
		Bitumen (emulsion) Sprayer, Trailer-Mounted	Final street repair	1	1	1
		4-inch Grinder	Final street repair	1	1	3
		Spreader Box (large)	Final street repair	1	1	2
		Arrowboard	Traffic control	2	1	8
	Restore ROW	Grader	Recontour work area	1	2	10

Table B-10
Typical Construction Equipment by Activity

Project Components	Activity	Equipment	Use	Approximate Quantity	Approximate Duration of Activity (Days)	Average Duration of Use (Hours per day)
		Haul Truck	Remove waste	1	7	10
		Mini-Excavator	For water bars	1	2	10
		Bobcat	For water bars	1	2	10
		Water Truck	Dust control	1	7	10
		Hydroseed Truck	Replant vegetation	1	1	10
		1-ton Pickup Truck	Transport personnel	1	7	3
	Pole Removal – Ground Access	Boom Truck with Hydraulic Pole Puller	Remove existing pole	1	1	1
	Pole Removal – No Ground Access	Hydraulic Pole Puller	Remove existing pole	1	1	2
		Helicopter	Remove existing pole	1	1	0.5
Distribution Lines	Improve Access Roads (per mile)	Bulldozer	Grade access roads	1	4	8
		Road Grader	Grade access roads	1	4	8
		Loader	Load haul trucks, transport materials	1	4	1.6
Distribution Lines	Improve Access Roads (per mile)	1-ton Pickup Truck	Transport personnel	1	4	2.4
		Water Truck	Suppress dust	2	4	6.4
		Mower	Mow vegetation	1	4	2.4
	Construct Direct-Bury Poles (per pole)	*Helicopter Set*				
		Compressor	Dig hole by hand	1	4	6.4
		Concrete	Concrete backfill	1	1	16
		Helicopter	Deliver equipment, bottom section, and top section of pole	1	2	0.4
		1-ton Pickup Truck	Transport personnel	1	5	2.4
		Truck Set				
		Drilling Rig	Drill anchor holes	1	3	6.4
		Loader	Load spoil and waste	1	1	3.2

Table B-10
Typical Construction Equipment by Activity

Project Components	Activity	Equipment	Use	Approximate Quantity	Approximate Duration of Activity (Days)	Average Duration of Use (Hours per day)
		Water Truck	Dust/fire control	1	3	0.8
		Air Compressor	Operate tools	1	3	6.4
		Concrete Truck	Deliver slurry	1	1	1.6
		Bucket Truck	Set the top section of the pole	1	1	1.6
		Flatbed Truck	Deliver pole sections	1	1	2.4
		1-ton Pickup Truck	Transport personnel	1	3	2.4
		Boom Truck	Set base and top section	1	1	1.6
	String Conductor (per phase)	Puller and Tensioner	Pull new conductor into place and secure at correct tension	1	1	3
		Reel Trailer	Feed new conductor to the pulling rig	1	1	3
Distribution Lines	String Conductor (per phase)	Bucket Truck	Install conductor and act as guard structure	1	1	3
		1-ton Pickup Truck	Transport personnel	2	1	3
		Water Truck	Dust/fire control	2	1	3
	Undergrounding (C79, C440, and C449, per 300 feet)	Saw Cut	Cut pavement and road materials	1	1	8
		Backhoe	Excavate	2	1	8
		Bobcat	Moving dirt and steel plates	1	1	2
		Dump Truck	Hauling dirt and asphalt	3	1	8
		Water Truck	Dust control, fire patrol	1	1	8
		Concrete Truck	Slurry hauling	5	1	2
		Foreman Truck	Transport personnel	3	1	8
		Crew Truck	Transport personnel	2	1	8

Table B-10
Typical Construction Equipment by Activity

Project Components	Activity	Equipment	Use	Approximate Quantity	Approximate Duration of Activity (Days)	Average Duration of Use (Hours per day)
		Air Compressor	Jackhammering, blowing rope in conduits	1	1	8
		Pavement Roller	Asphalt	1	1	8
		Vibrating Plate	Asphalt	1	1	2
		Bitumen (emulsion) Sprayer, Trailer-Mounted	Final street repair	1	1	1
		4-inch Grinder	Final street repair	1	1	3
		Spreader Box (large)	Final street repair	1	1	2
		Arrowboard	Traffic control	2	1	8
Distribution Lines	Restore ROW (per mile)	Grader	Recontour work area	1	2	8
		Haul Truck	Remove waste	1	7	8
		Mini-Excavator	For water bars	1	2	8
		Bobcat	For water bars	1	2	8
		Water Truck	Dust control	1	7	8
		Hydroseed Truck	Replant vegetation	1	1	8
		1-ton Pickup Truck	Transport personnel	1	7	2.4
	Pole Removal – No Ground Access (per pole)	Boom Truck with Hydraulic Pole Puller	Remove existing pole	1	1	1
		Hydraulic Pole Puller	Remove existing pole	1	1	2
		Helicopter	Remove existing pole	1	1	0.5

Source: SDG&E 2013a.

B.5.4 Water Usage

Construction-related water usage is needed primarily to provide for dust control, fire suppression, and minimal earthwork activities. Approximately 5–10 million gallons of water would be required on site during the construction of SDG&E's proposed project over the 5-year

construction period. Water would be obtained through a number of sources, including purchasing and transporting water from local water districts, such as the cities of San Diego, La Mesa, and/or El Cajon, and private groundwater extraction operations (SDG&E 2014d).

B.6 Operations and Maintenance

To ensure continued safe and reliable electric service of the existing facilities in the project study area, SDG&E would conduct standard O&M activities and procedures for their facilities within and outside the CNF. Table B-11, Typical Maintenance Activities, lists and describes the types of maintenance activities that would occur, lists the equipment that would be used for these activities, and provides the estimated frequency. The activities range from routine preventive maintenance to emergency repairs and replacements required to maintain service continuity and reliability. In addition, aerial and ground inspections of electric line facilities and patrols aboveground components would be conducted on a regular basis. Inspection for corrosion, equipment misalignment, loose fittings, and other common mechanical problems is performed every 3 years (per CPUC General Order 165) for overhead 69 kV power lines. Underground electric lines would be inspected every 3 years from inside the concrete splice vaults. The following list provides the different types of inspections and patrols that SDG&E would conduct to maintain system reliability and to ensure the safety of the general public and personnel engaged in O&M activities.

- Visual aerial inspections—aerial survey conducted by helicopter of overhead structures, conductor spans, and ROW encroachment
- Infrared helicopter inspections—aerial survey of power lines using a specialized camera equipment to identify potential equipment failures
- Ground inspections—detailed ground inspections of underground components, 69 kV overhead structures, and associated facilities are performed to identify possible safety hazards and system defects. In addition, an assessment of access routes, vegetation, ROW encroachment, and vandalism are also conducted
- Vegetation Inspections—inspection conducted to ensure proper vegetation clearances are maintained in accordance with PRC Section 4292 and CPUC General Order 95 requirements
- Special inspections and patrols—occur on a non-routine, as-needed basis. Special inspections may occur when preparing for planned outages associated with construction and/or maintenance projects elsewhere in the larger SDG&E electric transmission and distribution systems. Special inspections and patrols may also be conducted before a line is initially energized after construction or reenergized after an extended outage.

Table B-11
Typical Maintenance Activities

Activity	Description	Equipment Used	Estimated Frequency
Equipment Repair and Replacement	Replacement, repair, and installation of hardware as needed	Four-wheel-drive (FWD) vehicle, helicopter, boom truck, line truck	As needed
Insulator Washing	Removal of dirt from insulators by spraying water	Water Truck	As needed
Routine Vegetation Management	Controlling vegetation to facilitate the use of access roads, allow inspection and maintenance of facilities, expose potential hazards, prevent potential fire hazards, and provide safe working areas	FWD vehicle, large truck, helicopter, chain saw, chipper, weed whip	Biannually, or as required by line inspections
Tree Trimming	Maintaining adequate line clearances between conductors and vegetation	FWD vehicle, helicopter, large truck, chain saw, chipper	Annually
Access Road Maintenance	Vegetation removal, water bar or culvert cleaning/repair, road grading	FWD vehicle, grader, excavator, dozer, water truck, roller	Every 2 years or as needed
Pesticide and Herbicide Application	Controlling undesirable woody and herbaceous vegetation (including aquatic plants), insects, rodents, and other pests and weeds	FWD vehicle, helicopter, large truck, applicator	Annual approval by Authorized Officer required
Gate and Barrier Maintenance	Replacement and repair of hardware	FWD vehicle, forklift, large truck	As needed

Source: SDG&E 2013a.

The following discussion provides an overview of the types of activities that currently take place for existing poles and would continue to occur after construction of SDG&E's proposed project. Unless otherwise noted, all vehicles would have rubber tires.

Water requirements for the operation and maintenance of these power lines typically include access road maintenance and dust control during helicopter operations. Annual estimated water usage is 130,000 gallons and the water is purchased from local sources (SDG&E 2014d).

B.6.1 Right-of-Way Repair

Repair methods would include grading previously built (e.g., road reestablishment) and existing access roads and spot-repair of erosion sites where access roads may be subject to scouring. ROW repairs would be performed as necessary (such as following seasonal rains) and may require the use of a four-wheel-drive pickup truck, a motor grader, a backhoe, and/or a skid steer loader. The skid steer loader has steel tracks while the remaining equipment has rubber tires.

B.6.2 Pole Brushing

Certain poles or structures would require the removal of vegetation to reduce the potential for fire danger and other safety hazards. In accordance with fire break clearance requirements stipulated in PRC 4292 and California Code of Regulations, Title 14, Section 1254, SDG&E would trim or remove vegetation in the area surrounding 69 kV power line and 12 kV distribution line poles to reduce potential fire and other safety hazards. Dead, diseased, or dying limbs and foliage from living, sound trees are removed from approximately 8 feet above ground to the horizontal plane of the highest point of conductor attachment; dead, diseased, or dying trees are also removed. From ground level to approximately 8 feet above ground level, SDG&E removes flammable trash, debris, or other materials; grass; herbaceous and brush vegetation; and limbs and foliage of living trees to a distance of 10 horizontal feet from the outer circumference of the pole. For all steel poles, SDG&E clears to bare ground an approximately 5-foot-radius around the poles that have exposed, external ground wires, and trims all encroaching trees or other vegetation within approximately 10 feet of the pole. Vegetation would be removed using mechanical equipment, such as chainsaws, weed trimmers, rakes, shovels, and brush hooks. A crew of three workers would typically conduct this work. Poles are typically inspected on an annual basis to determine if pole brushing is required.

B.6.3 Application of Pesticides and Herbicides

Consistent with SDG&E Safety Standard G8367 Pesticide Management and as described in the draft MSUP Operating Plan (see POD Attachment C), SDG&E may use one or more of the following insecticides:

- Hit Squad Industrial Insecticide
- Blast ‘Em (Wasp & Hornet Killer).

Similarly, SDG&E may use one or more of the following herbicides during pole brushing, cutstump treatments associated with tree removals, or other operation and maintenance activities where vegetation removal is necessary for fire safety reasons:

- Rodeo
- Roundup
- Roundup Pro
- Accord Concentrate
- Gallery 75DF
- Garlon 4 Ultra

- Landmark XP
- Milestone
- Pathfinder
- Payload
- Stalker
- Spra-Kil SK-26
- Dimension Ultra 40.

The use of pesticides or herbicides are not proposed for facilities on the CNF. If the use of herbicides is determined to be necessary within the CNF in the future, SDG&E would work with the Forest Service to obtain authorization for the specific uses for which herbicides are required. Prior to any herbicide use within the CNF, SDG&E would submit an anticipated schedule to the Forest Service for any proposed herbicide use on an annual basis, or more frequently as needed, and would work with the Forest Service to determine the appropriate herbicide per location. Herbicide application would occur under the direction of a professional pesticide applicator with either a Qualified Applicator License or an Agricultural Pest Control Adviser License in the State of California. This analysis does not evaluate the use of any pesticides or herbicides on the CNF.

B.6.4 Equipment Repair and Replacement

Poles or structures support a variety of equipment, such as conductors, insulators, switches, transformers, lightning arrest devices, line junctions, and other electrical equipment. In order to maintain uniform, adequate, safe, and reliable service, electrical equipment may need to be added, repaired, or replaced during operations. An existing transmission or distribution structure may be removed and replaced with a larger/stronger structure, typically steel if the existing structure is wood, at the same location or a nearby location, due to damage or changes in conductor size. Equipment repair or replacement generally requires a crew to gain access to the location of the equipment to be repaired or replaced. The crew normally consists of four men with two to three trucks, a boom or line truck, an aerial-lift truck, and an assist truck. If no vehicle access exists, the crew and material are flown in by helicopter.

B.6.5 Insulator Washing

In some areas prone to atmospheric moisture, condensation combined with dust on porcelain insulators can create an electrical discharge. This discharge, known as “arcing,” may cause outages. These outages caused by this condition can be prevented by routinely washing the insulators. The process of washing insulators involves driving a washer truck to within 6 feet of the facility and using a high-pressure hose to spray deionized water at the insulators. A crew of

two workers driving a washer truck would be required for this operation. The space needed at each location is approximately 30 feet by 40 feet. Typically, approximately 30 minutes is required to wash and set up each insulator pole set. Insulators are typically inspected on an annual basis to determine if washing is required.

B.6.6 Vegetation Management

Tree limb contact with electric lines may cause power outages and cause arcing that serves as an ignition point for wildfires. Fast-growing or diseased, dying, or dead trees within and adjacent to the ROW may require removal during O&M of the electric lines to prevent circuit interruptions or reduce potential fire hazards. Regular inspection, regardless of habitat type, is necessary to maintain proper tree-to-conductor clearances consistent with PRC Section 4293 and CPUC General Order 95. SDG&E typically conducts tree-trimming activities with a two- to three-person crew, a one-person aerial-lift truck, and a chipper trailer. Although the time required to complete tree trimming varies according to location, SDG&E can complete typical tree-trimming activities in one day. SDG&E annually inspects trees in the SDG&E service area for trimming needs.

B.6.7 Use of Helicopters

Each electric transmission line is inspected several times a year via helicopter. Helicopters may also be used to deliver equipment, position poles and structures, string lines, and position aerial markers, as required by Federal Aviation Administration (FAA) regulations. SDG&E's Transmission and Distribution Departments use helicopters for patrolling transmission and distribution lines during trouble jobs that are in areas of rough terrain or where vehicle access is limited. During trouble job patrolling, the helicopter either picks up the patrolman at the district yard or in the field. If the pickup occurs in the field, a pad or flat field to land on would be required. The area required for small helicopter staging is generally 100 feet by 100 feet, and the size of the crew varies from 4 to 10 crewmembers, 2 helicopter staff, and a water truck driver to apply water for dust control at the staging area. Most helicopter operations typically take 1 day.

B.6.8 Fire Protection

SDG&E would continue to comply with all applicable state and federal regulations, requirements, and procedures when conducting O&M activities. All O&M activities performed would be subject to the fire plan prepared for SDG&E's proposed project. This plan would be consistent with existing SDG&E fire plans and for projects on NFS lands would follow any applicable Project Activity Level (PAL) designations. PALs are forecasted risk levels calculated by the Forest Service to identify potential risks of fire occurring on National Forest System land. PALs are based on fire conditions, including local weather and vegetation conditions, and the designated level is made available by 4:00 p.m. daily for the following day.

B.6.9 Categories of Operation & Maintenance Work

Notifications to the Forest Service for O&M activities under the MSUP are grouped into five categories. Category 1 includes routine inspections with no ground-disturbing activities, and no notification or approval is required. Category 2 includes routine O&M activities within the permit area and may be conducted with notification but without additional review and approval from the Forest Service. Category 3 includes routine work outside of the permit area and requires Forest Service review and approval prior to implementation. Categories 4 and 5 are reserved for Emergency Work and Catastrophic Events, and SDG&E would provide notifications to the Forest Service at the earliest opportunity.

B.7 SDG&E Applicant Proposed Measures and Protocols

B.7.1 Applicant Proposed Measures

SDG&E proposes applicant proposed measures (APMs) that would be followed during all project-related construction activities. APMs are specific to environmental issue areas, such as aesthetics, air quality, biological resources, cultural resources, fire hazards, hydrology, noise, and transportation. Table B-12, Applicant Proposed Measures for Each Issue Area, lists APMs that are applicable to each environmental issue area, while Table B-13, SDG&E Proposed Applicant Proposed Measures, lists the APMs as proposed by SDG&E (SDG&E 2013a).

All project-related construction activity is subject to the APMs. In addition, all project personnel are subject to training prior to beginning work on the project to ensure that the APMs, environmental laws and regulations, and all other agency requirements are understood and followed.

The impact analysis in this EIR/EIS assumes implementation of all APMs as part of SDG&E's proposed project and alternatives. However, where other impacts are identified that are not addressed by these APMs or where the APMs are not considered adequate under CEQA and NEPA to reduce impacts, additional mitigation measures are provided in Section D, Environmental Analysis, of this EIR/EIS.

Table B-12
Applicant Proposed Measures for Each Issue Area

Issue Area	Applicable APMs
General	APM GEN-01 through APM GEN-08
Visual Resources	APM VIS-01 through APM VIS-05
Air Quality	APM AIR-01 through APM AIR-05
Biological Resources	APM BIO-01 through APM BIO-10
Cultural and Paleontological Resources	APM CUL-01 through APM CUL-09

Table B-12
Applicant Proposed Measures for Each Issue Area

Issue Area	Applicable APMs
Fire Hazards	APM HAZ-01 through APM HAZ-06
Hydrology and Water Quality	APM HYD-01 through APM HYD-11
Noise	APM NOI-01 through APM NOI-10
Transportation and Traffic	APM TRANS-01 through APM TRANS-07

Table B-13
SDG&E Proposed Applicant Proposed Measures

APM No.	Description
	General
APM GEN-01	Native soil not used for backfill will be spread on site, if clean, or hauled off site and disposed of at an approved facility. Construction activities that involve placement of native, clean soil will be managed by employing BMPs that minimize soil erosion and impacts on surrounding vegetation per the SDG&E Water Quality BMP Manual. BMPs such as silt fencing or fiber rolls will be installed where necessary (e.g., in high-velocity flow areas and in areas of steep slope), and soil will be placed and compacted in a manner that sufficiently controls erosion and sediment discharge from the site.
APM GEN-02	Where distribution and power lines are removed, the old conductor will be wound onto wooden spools, placed on flatbed trucks, and recycled at an approved facility.
APM GEN-03	Old poles, associated hardware, and any other debris generated from construction activities will be removed from the site and placed on flatbed trucks for recycling or disposal at an approved facility.
APM GEN-04	The entire existing wooden pole will be removed unless protection of an environmental resource requires the pole to be cut off at the surface and the base left in place.
APM GEN-05	Imported material may be used to backfill the holes as needed; however, as much native material as possible will be used on site. Construction activities that involve placement of native, clean soil will be managed by employing BMPs that minimize soil erosion and impacts on surrounding vegetation per the SDG&E Water Quality BMP Manual. BMPs such as silt fencing or fiber rolls will be installed where necessary (e.g., in high-velocity flow areas and in areas of steep slope), and soil will be placed and compacted in a manner that sufficiently controls erosion and sediment discharge from the site.
APM GEN-06	Prior to initiating construction, SDG&E will make all the appropriate and necessary notifications, including landowner notifications.
APM GEN-07	SDG&E will notify the Underground Service Alert a minimum of 48 hours in advance of excavating or conducting other ground-disturbing activities in order to identify buried utilities. Exploratory excavations (potholing) will also be conducted to verify the locations of existing facilities in the field, if necessary.
APM GEN-08	SDG&E will coordinate with CAISO to obtain all the necessary line clearances prior to beginning new conductor installation.
	Visual Resources
APM VIS-01	When construction has been completed, all temporary work areas will be restored to near pre-construction conditions in accordance with landowner agreements, in order to reduce potential visual contrast with the surrounding landscape setting.
APM VIS-02	Construction activities will be kept as clean and inconspicuous as practical. Where practical, construction storage and staging will be screened from close-range residential views with opaque fencing.

Table B-13
SDG&E Proposed Applicant Proposed Measures

APM No.	Description
APM VIS-03	Non-specular conductors will be installed for new and replacement conductors along the electric line alignments in order to minimize the reflectivity and general visibility of new electric line facilities.
APM VIS-04	New and replacement poles to be installed along the electric line alignments will be reddish-brown, weathered-steel that will appear similar in color to existing wood poles seen in the Proposed Action area and will blend in with the surrounding landscape backdrop.
APM VIS-05	Any required lighting will be limited to individual pole work areas and will not exceed more than two hours per evening.
Air Quality	
APM AIR-01	To the extent feasible, unnecessary construction vehicle and idling time would be minimized. The ability to limit construction vehicle idling time is dependent upon the sequence of construction activities and when and where vehicles are needed or staged. Certain vehicles, such as large diesel-powered vehicles, have extended warm-up times following start-up that limit their availability for use following start-up. Where such diesel-powered vehicles are required for repetitive construction tasks, these vehicles may require more idling time. The project would apply a "common sense" approach to vehicle use; if a vehicle is not required for use immediately or continuously for construction activities, its engine would be shut off.
APM AIR-02	To control fugitive dust, SDG&E would apply water or non-toxic soil stabilizers on all unpaved access roads, staging areas, and other work areas if construction activity causes persistent visible emissions of fugitive dust beyond the work area; cover loads in haul trucks or maintain at least six inches of free-board when traveling on public roads; and apply non-toxic soil stabilizers or water to form and maintain a crust on inactive construction areas (disturbed work areas that are unused for four consecutive days).
APM AIR-03	Traffic speeds on unpaved roads would be limited to 15 miles per hour.
APM AIR-04	SDG&E would maintain construction equipment per manufacturing specifications and use low-emission equipment as follows: all off-road and portable construction diesel engines not registered under the CARB Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower (hp) or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, Section 2423(b)(1), unless such an engine is not available for a particular item of equipment. In the event that a Tier 2 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), unless the engine manufacturer indicates that the use of such devices is not practical for that particular engine type.
APM AIR-05	SDG&E would continue to utilize best management practices (BMPs) to minimize dust and erosion.
Biological Resources	
APM BIO-01	SDG&E will consult with the appropriate resource agencies regarding potential impacts to federally and state-listed species, as appropriate.
APM BIO-02	All work areas will be surveyed for special-status plant and wildlife species by a qualified biologist prior to the commencement of construction in accordance with SDG&E's pre-activity survey report requirements.
APM BIO-03	SDG&E will implement the protocols identified in Appendix A: SDG&E NCCP Protocols.
APM BIO-04	SDG&E will implement the protocols identified in SDG&E Quino Checkerspot Butterfly (*Euphydryas editha quino*) Low-Effect Habitat Conservation Plan Sections 3.2 Actions to Minimize Impacts and 3.3 Actions to Mitigate Impacts.
APM BIO-05	Stringing site locations are designed with a preference toward placement within roadways, where possible, to minimize additional potential impacts from grading and vegetation removal that may otherwise be required if these stringing sites were required to be located in vegetated, off-road areas.

Table B-13
SDG&E Proposed Applicant Proposed Measures

APM No.	Description
APM BIO-06	Although Laguna Mountains Skipper is not covered under SDG&E's Natural Community Conservation Plan (NCCP), SDG&E will utilize NCCP protocols 1, 2, 3, 5, 7, 8, 10, 11, 13, 14, 17, 24, 25, 29, 34, 35, 41, 44, 48, 54, 55, and 57 in United States (U.S.) Forest Service- (Forest Service-) modeled critical habitat and occupied habitat to minimize any potential impacts to this species. In addition, SDG&E will have a qualified biologist survey any Laguna Mountains Skipper habitat prior to work.
APM BIO-07	If California spotted owls are identified in the vicinity of proposed work areas during the pre-activity survey process, SDG&E will consult with the appropriate resource agencies to avoid impacts to nesting California spotted owl.
APM BIO-08	SDG&E will design and install all new poles to conform to the guidelines in the Suggested Practices for Avian Protection on Power Lines Manual developed by the Avian Power Line Interaction Committee.
APM BIO-09	If active bat roosts are identified during pre-activity surveys, SDG&E will coordinate with the U.S. Fish and Wildlife Service/California Department of Fish and Wildlife as appropriate.
APM BIO-10	SDG&E will eliminate existing access roads that will no longer be used due to removal or relocation of facilities, and will return the land to near pre-construction conditions.
Cultural and Paleontological Resources	
APM CUL-01	Prior to construction, all SDG&E, contractor, and subcontractor personnel will receive training regarding the appropriate work practices necessary to effectively implement the APMs and to comply with the applicable environmental laws and regulations, including the potential for exposing subsurface cultural, archaeological, and paleontological resources and how to recognize possible buried resources. This training will include a presentation of the procedures to be followed upon discovery or suspected discovery of cultural and archaeological materials, including Native American remains and their treatment, as well as of paleontological resources.
APM CUL-02	Intensive pedestrian surveys will be conducted prior to construction in those areas within the ROWs for which initial survey access was not granted to determine the potential for impacts to cultural resources in these areas. Where possible, engineering design will be re-evaluated to determine whether facilities can be relocated to avoid any cultural resources identified from these additional surveys. If relocation is not feasible, APM CUL-03 will be implemented to minimize impacts to sensitive cultural resources.
APM CUL-03	All potentially National Register-eligible or archaeologically sensitive sites, as defined in the Cultural Resources Technical Report, that will not be directly affected by construction but are within 50 feet of replacement pole locations will be designated as Environmentally Sensitive Areas (ESAs). Potentially eligible resources include those that are recommended eligible, as well as unevaluated sites. Protective fencing or other markers will be erected and maintained to protect these ESAs from inadvertent trespass for the duration of construction in the vicinity. ESAs will not be signed or marked as cultural, historical, or archaeological resources.
APM CUL-04	An archaeological or cultural monitor will be present during construction activities that occur within or adjacent to identified archaeological or cultural resource site boundaries, respectively, as identified in the Cultural Resources Technical Report to ensure conformance with prescribed avoidance measures. The monitor will identify potential archaeological or cultural resources that may be unexpectedly encountered during construction and will have the authority to divert or temporarily halt construction activities in the area of discovery. In the event that archaeological or cultural resources are discovered, the monitor will stop work and notify the Principal Investigator (PI), who will inform SDG&E and the Forest Service Heritage Program Manager (HPM) of the stoppage. The archaeologist, in consultation with the Forest Service HPM and SDG&E's Cultural Resource Specialist, will determine the significance of the discovered resources. The Forest Service HPM and SDG&E's Cultural Resource Specialist and Environmental Project Manager must concur with the evaluation procedures to be performed before construction activities are allowed to resume. For significant cultural resources, preservation in-place will be the preferred manner of mitigating for impacts.

Table B-13
SDG&E Proposed Applicant Proposed Measures

APM No.	Description
	For resources that cannot be preserved in place, a Research Design and Data Recovery Program will be prepared and carried out to mitigate impacts in consultation with the Forest Service HPM, the Tribes, and the State Historic Preservation Office (SHPO). No collection of archaeological or cultural resources will occur on Forest Service property without prior Forest Service HPM consent. Daily logs will be kept by all monitors, and a monitoring report (with appropriate graphics), which describes the results, analyses, and conclusions of the monitoring program, will be prepared at the conclusion of each phase of monitoring. Any new cultural sites or features encountered will be recorded with the South Coastal Information Center. Monitors will also identify and delineate an approved footpath through the archaeological and cultural resource sites for construction crews, as needed.
APM CUL-05	SDG&E will implement all applicable site-specific impact avoidance measures identified and described in the Cultural Resources Technical Report, such as avoiding access road improvements within culturally sensitive areas unless improvements are required for safety reasons; replacing poles within the previously disturbed area (two to four feet) represented by the existing pole locations, where necessary, to avoid sensitive resources; and cutting existing poles off at grade level, where specified and landowner approval is provided. Same-hole pole placement will also be utilized on a case-by-case basis. No new pole locations will be placed within cultural resource boundaries unless the appropriate consultation (including Section 106) has taken place. No temporary poles will be located within sites unless the appropriate consultation (including Section 106) has taken place.
APM CUL-06	In consultation with the Forest Service HPM, BIA Archaeologist, the Tribes, and the SHPO, SDG&E will develop a Cultural Resources Treatment Plan that includes procedures for protection and avoidance, evaluation and treatment, and the curation of any potentially register-eligible cultural materials. Specific protective measures, including a monitoring program, will be defined in the Cultural Resources Treatment Plan to reduce potential adverse impacts on unknown cultural resources to less-than-significant levels.
APM CUL-07	Should any previously unidentified prehistoric or historic artifacts; indicators or examples of cultural, archaeological, or paleontological resources; or potential human remains or funerary items be discovered during the course of site preparation, grading, excavation, construction, or other activities, all operations within 50 feet of an inadvertent discovery during such activities shall cease and the PI will contact the Forest Service HPM and SDG&E's Cultural Resource Specialist. Once a find has been identified, the Forest Service HPM and SDG&E's Cultural Resources Specialist will determine if additional cultural resources work, including but not limited to a formal evaluation or Proposed Action redesign, are required treatment. Ground-disturbing work in the vicinity of the discovery will not resume without authorization by the Forest Service HPM and after the appropriate consultation has taken place.
APM CUL-08	A paleontological monitor will be present for excavation activities conducted at locations with underlying PFYC Class 3 geologic deposits where new steel poles are unable to be installed in the same location as of that of the existing wood pole. In the event that fossils are unexpectedly encountered during construction, a qualified paleontologist will have the authority to divert or temporarily halt construction activities in the area of discovery to allow the recovery of fossil remains in a timely fashion. When significant fossils are discovered, the paleontologist will recover them in accordance with professional standards. Fossil remains collected during monitoring and salvage will be cleaned, repaired, sorted, cataloged, and curated in a scientific institution with permanent paleontological collections. The paleontological monitor will follow the procedures outlined in the Paleontological Monitoring and Treatment Plan, which will be prepared and will include information regarding pre-construction field surveys, construction personnel training, necessary permits, research design, monitoring methodology, fossil discovery and recovery protocols, fossil preparation and curation procedures, and the preparation of a final monitoring report.
APM CUL-09	SDG&E will flag potentially sensitive archaeological resources identified in the vicinity of access roads for avoidance and prohibit any grading activities in the vicinity as part of construction or operation and maintenance.

Table B-13
SDG&E Proposed Applicant Proposed Measures

APM No.	Description
	Public Health (Fire Hazards)
APM HAZ-01	SDG&E will implement its existing Electric Standard Practice (ESP) 113-1, which includes requirements for carrying emergency fire suppression equipment, conducting worker-awareness trainings that cover fire prevention and safety, restrictions on smoking and idling vehicles, and construction restrictions during Red Flag Warnings (RFWs).
APM HAZ-02	SDG&E will implement Electric Distribution Operation 3017 to ensure that the proper steps are taken to maintain fire safety while meeting all operational and service requirements.
APM HAZ-03	Prior to starting construction activities, SDG&E will clear dead and decaying vegetation from Proposed Action work areas where personnel are active or where equipment is in use or being stored within ROWs, staging areas, stringing sites, and access roads.
APM HAZ-04	Prescribed fire tools and backpack pumps with water will be kept within 50 feet of work activities to ensure the capability for rapid extinguishment in the event of a fire.
APM HAZ-05	Weather and fire danger will be monitored daily by SDG&E meteorologists and wildland fire specialists in order to provide timely and immediate communication of significant changes which could impact the Proposed Action.
APM HAZ-06	No construction work will occur for areas affected by a RFW or Project Activity Level E designation.
	Hydrology and Water Quality
APM HYD-01	All concrete washouts will be conducted either into excavations where the concrete was poured within designated concrete washout stations, or will be captured using a washout recycling system. Crews will not be allowed to dispose of concrete directly onto the ground.
APM HYD-02	When construction activities are required adjacent to flowing aquatic resources, sediment barriers will be placed between the work area and flowing water.
APM HYD-03	In areas where topsoil has not been salvaged, construction activities will be limited when the environmental monitor determines that the soil is too wet to adequately support vehicles and equipment. Where soil conditions are deemed too wet to work, one of the following measures will apply: —Access will be limited to the minimum area feasible for construction. Where possible, vehicles and equipment will be routed around wet areas so long as the re-route does not cross into sensitive resource areas. — If wet areas cannot be avoided and soil moisture is too high to strip topsoil, BMPs—including the use of wide-track or low ground pressure equipment or installation of prefabricated equipment pads or timber mats—will be implemented for use in these areas to minimize rutting and off-site sedimentation.
APM HYD-04	Any areas not surveyed for potentially jurisdictional wetlands or waters due to limited access will be surveyed prior to the start of construction activities and potential impacts will be assessed and the appropriate jurisdictional permits will be obtained as needed.
APM HYD-05	SDG&E will prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will identify BMPs based on its Water Quality BMPs Manual for each activity that has the potential to degrade surrounding water quality through erosion, sediment run-off, and other pollutants. These BMPs will then be implemented and monitored by a Qualified SWPPP Practitioner.
APM HYD-06	During any construction activities, SDG&E will flag all hydrological resources occurring within work areas for avoidance, and all construction activities will occur outside of these resources.
APM HYD-07	SDG&E will comply with Forest Service requirements pertaining to hydrology and water quality, as detailed in the Forest Service's Water Quality Management for National Forest System Lands in California, BMPs.

Table B-13
SDG&E Proposed Applicant Proposed Measures

APM No.	Description
APM HYD-08	If dewatering is required, dewatering systems—as outlined in SDG&E's Water Quality BMPs Manual—will be used to dispose of groundwater. Typically, groundwater will be pumped into truck-mounted storage tanks and either discharged to land in accordance with Regional Water Quality Control Board regulations or transported to an authorized discharge location.
APM HYD-09	SDG&E will implement site-specific erosion and sediment control devices and the proper handling of potentially hazardous materials.
APM HYD-10	Following construction, the ROW, work areas, stringing sites, staging areas, and fly yards will be returned to near pre-construction conditions, which include re-establishing drainage patterns and vegetation, where feasible.
APM HYD-11	Existing access roads will be utilized to access the replacement structures where helicopter-only access is not required.
Noise	
APM NOI-01	SDG&E will provide notice of the construction schedule to all property owners within 300 feet of the Proposed Action by mail at least one week prior to the start of construction activities. The announcement will state the construction start date, anticipated completion date, and hours of operation, as well as a telephone number to call with questions or complaints during construction.
APM NOI-02	Operating equipment will be positioned to maximize the distance to residences and to maintain safe and effective operation.
APM NOI-03	All internal combustion engine-driven equipment will be equipped with exhaust mufflers that are in good condition and meet or exceed the manufacturer's specifications. All equipment will be maintained and tuned according to manufacturer recommendations.
APM NOI-04	When backup alarms have more than one loudness setting, they will be set to the lowest setting that meets Occupational Safety and Health Administration safety requirements.
APM NOI-05	When located within 80 feet of residences, a temporary noise barrier with an effective height of approximately three feet will be placed between residences and stationary noise-generating equipment during use. The effective height is that of the barrier above the line-of-sight between the noise source and the noise-sensitive receiver.
APM NOI-06	Helicopters will be required to maintain a height of at least 500 feet when passing over residential areas, except when at temporary construction areas or actively assisting with conductor stringing. All helicopters will be required to maintain a lateral distance of at least 500 feet from all schools. No more than 64 flights per day will be conducted.
APM NOI-07	Residents who experience construction noise levels that exceed the applicable noise thresholds will be temporarily relocated, on an as-needed basis, for the duration of the activities that will impact them.
APM NOI-08	In the event that blasting is required within 325 feet of a residential property line, SDG&E will prepare and provide a blasting plan for the Proposed Projects that is consistent with SDG&E's blasting guidelines to reduce noise and vibration impacts from blasting activities. The blasting contractor will be required to obtain a blasting permit and explosive permit per the San Diego County Regulatory Ordinances.
APM NOI-09	Where appropriate, SDG&E will coordinate with the San Diego County noise control officer regarding helicopter flights between 6:30 a.m. and 7:00 a.m. to avoid any conflicts with the County noise ordinance.
APM NOI-10	If construction occurs outside the hours allowed by San Diego County, SDG&E will follow its established protocols and will provide advance notice by mail to all property owners within 300 feet of planned construction activities. The announcement will state the construction start date, anticipated completion date, and hours of construction.

Table B-13
SDG&E Proposed Applicant Proposed Measures

APM No.	Description
Transportation and Traffic	
APM TRANS-01	To minimize traffic impacts, temporary lane closures will occur during off-peak traffic hours, to the extent practical, in order to minimize disruptions and traffic backups.
APM TRANS-02	Caution signs and/or flagmen will be used to regulate traffic where necessary and to maintain a safe transportation corridor during construction.
APM TRANS-03	Emergency vehicles will be provided access even in the event of temporary road or lane closures.
APM TRANS-04	SDG&E will coordinate isolated, temporary road closures with local jurisdictional agencies, as required, to cross these roadways, and perform work according to agency requirements.
APM TRANS-05	SDG&E will develop and implement a Traffic Control Plan during construction.
APM TRANS-06	SDG&E will coordinate flight patterns with local air traffic control and the Federal Aviation Administration prior to construction to prevent any adverse impacts due to increased air traffic.
APM TRANS-07	Where replacement poles will be close to existing pole locations, existing access roads, spur roads, and turnarounds will be used to the extent possible to support construction activities and will continue to be used for future line maintenance.

Source: SDG&E 2013a.

B.8 References

SDG&E. 2013a. *Master Special Use Permit, Cleveland National Forest, Orange and San Diego Counties, California, Revised Plan of Development.* Prepared by Insignia Environmental. Encinitas, California: Insignia Environmental. April 2013. http://www.cpuc.ca.gov/environment/info/dudek/CNF/DR3Response.htm

SDG&E. 2013b. SDG&E 04/19/13 Response A. 12-10-009 Cleveland National Forest Power Line Replacement Projects PTC Energy Division Data Request 03 Dated February 27, 2013. http://www.cpuc.ca.gov/environment/info/dudek/CNF/DR3_ResponseCombined.pdf

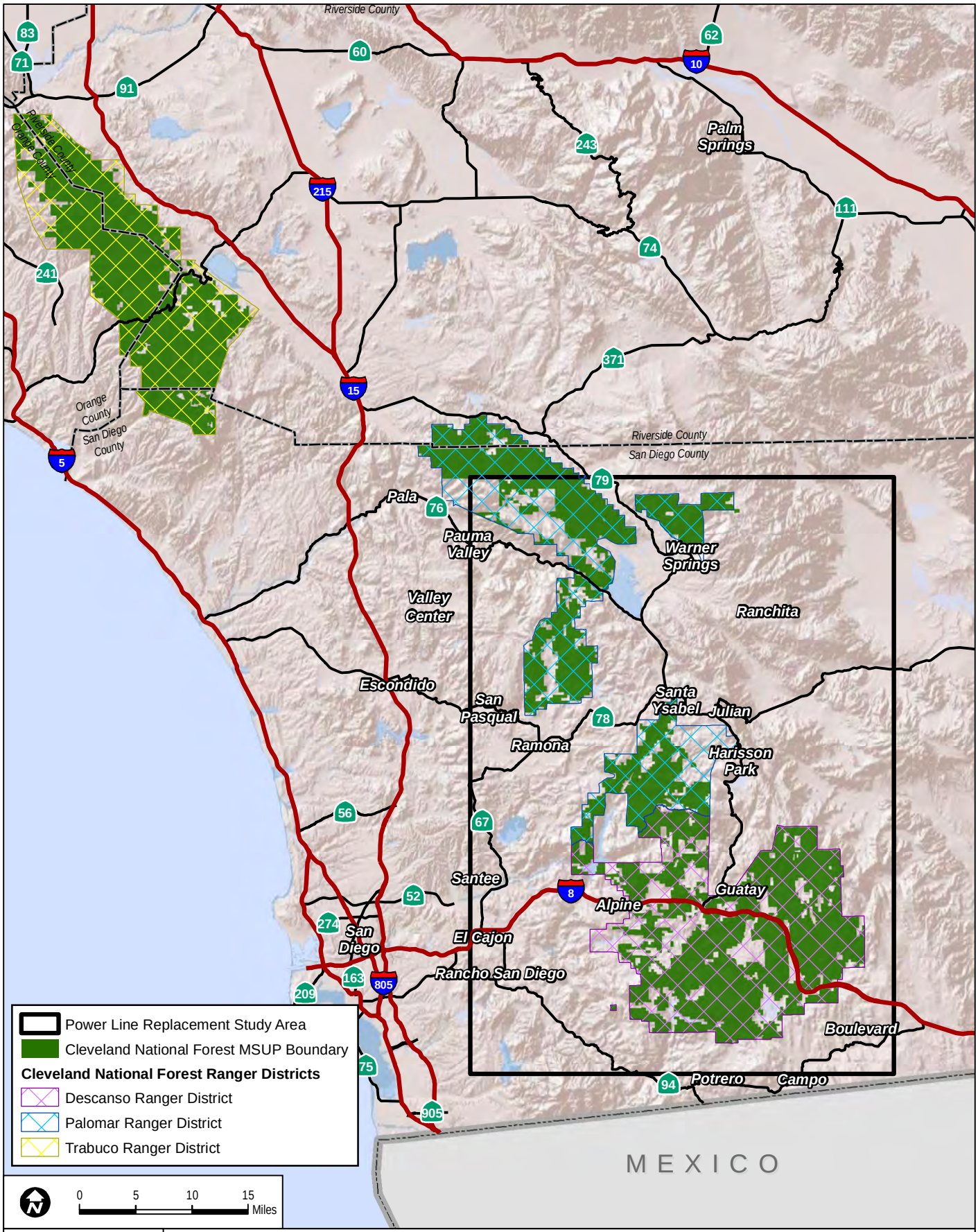
SDG&E. 2013c. *SDG&E Revised Plan of Development, San Diego Gas & Electric Company, Master Special Use Permit, Cleveland National Forest, Orange and San Diego Counties, California*. April 2013. Accessed March 2014. Prepared by Insignia Environmental. http://www.cpuc.ca.gov/environment/info/dudek/CNF/POD2/CNF%20Revised%20POD%20(04-19-13S).pdf.

SDG&E. 2014a. *Power Line TL626 Alternative Route Analysis for the Cleveland National Forest Power Line Replacements Project.* Prepared by Insignia Environmental. Encinitas, California: Insignia Environmental. February 2014. http://www.cpuc.ca.gov/environment/info/dudek/CNF/SDG&E%20TL626%20Alternatives%20Analysis%20(02-03-14S).pdf.

SDG&E. 2014b. Partial Response A. 12-10-009 to Cleveland National Forest Power Line Replacement Projects PTC ED Data Request 5, ED-SDGE-005: Alternative 1. (Dated February 5, 2014). Response dated February 27, 2014. http://www.cpuc.ca.gov/environment/info/dudek/CNF/DR5_ResponseCombined.pdf.

SDG&E. 2014c. *Power Line C157 Alternative Route Analysis for the Cleveland National Forest Power Line Replacements Projects.* Prepared by Insignia Environmental. Encinitas, California: Insignia Environmental. February 2014. http://www.cpuc.ca.gov/environment/info/dudek/CNF/SDG&E%20C157%20Alternatives%20Analysis%20(02-03-14S).pdf.

SDG&E. 2014d. Response A. 12-10-009 to Cleveland National Forest Power Line Replacement Projects PTC Energy Division Data Request 4 (Dated December 19, 2013). Response dated January 17, 2014. http://www.cpuc.ca.gov/environment/info/dudek/CNF/DR4_Response_1.17.14.pdf



DUDEK

7014

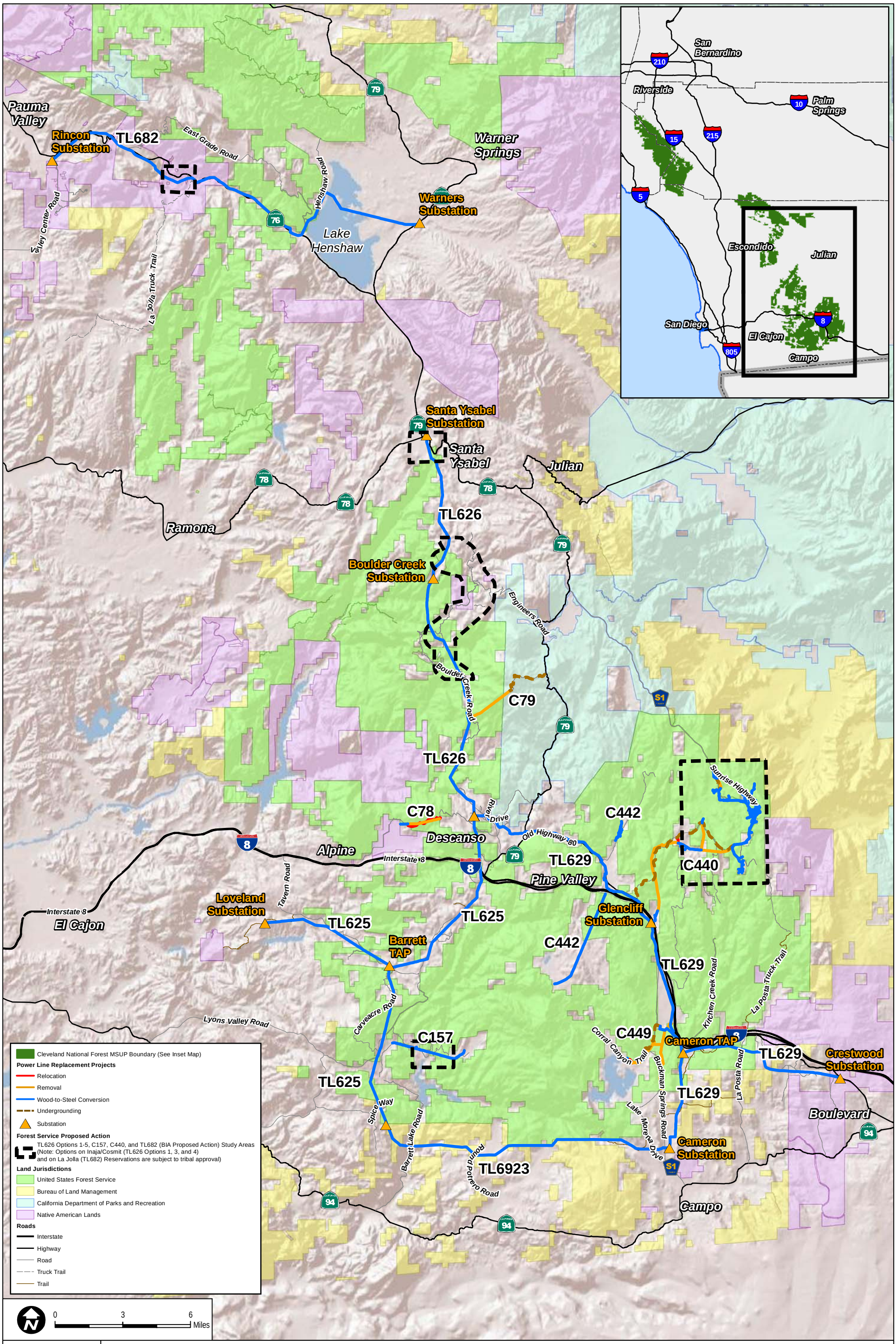
SOURCE: USFS 2013; SDG&E 2013

FIGURE B-1

Regional Overview Map

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

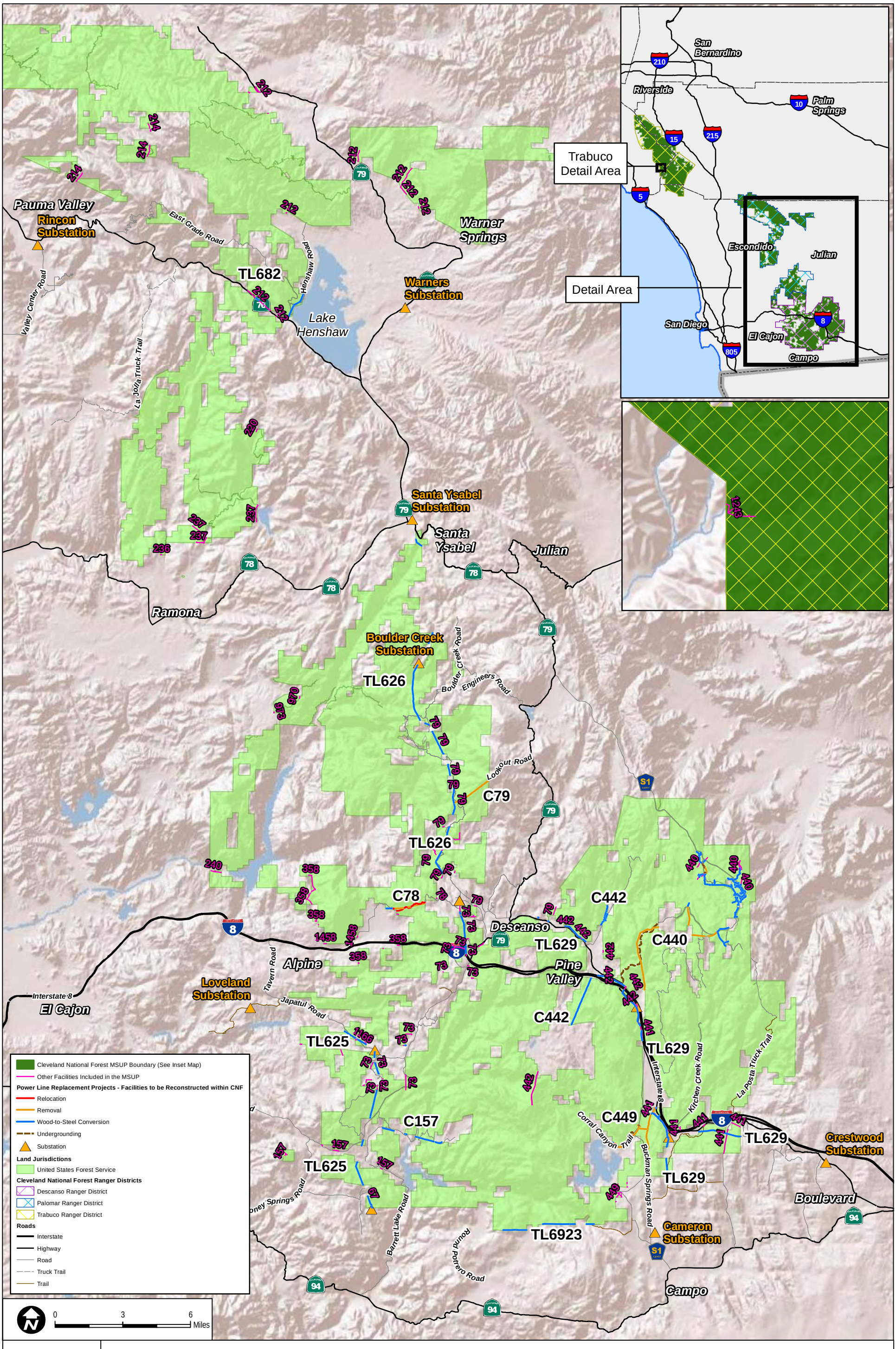
SOURCE: SDG&E 2011; SanGIS 2012; Bing Maps

FIGURE B-2

Power Line Replacement Projects Overview Map

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

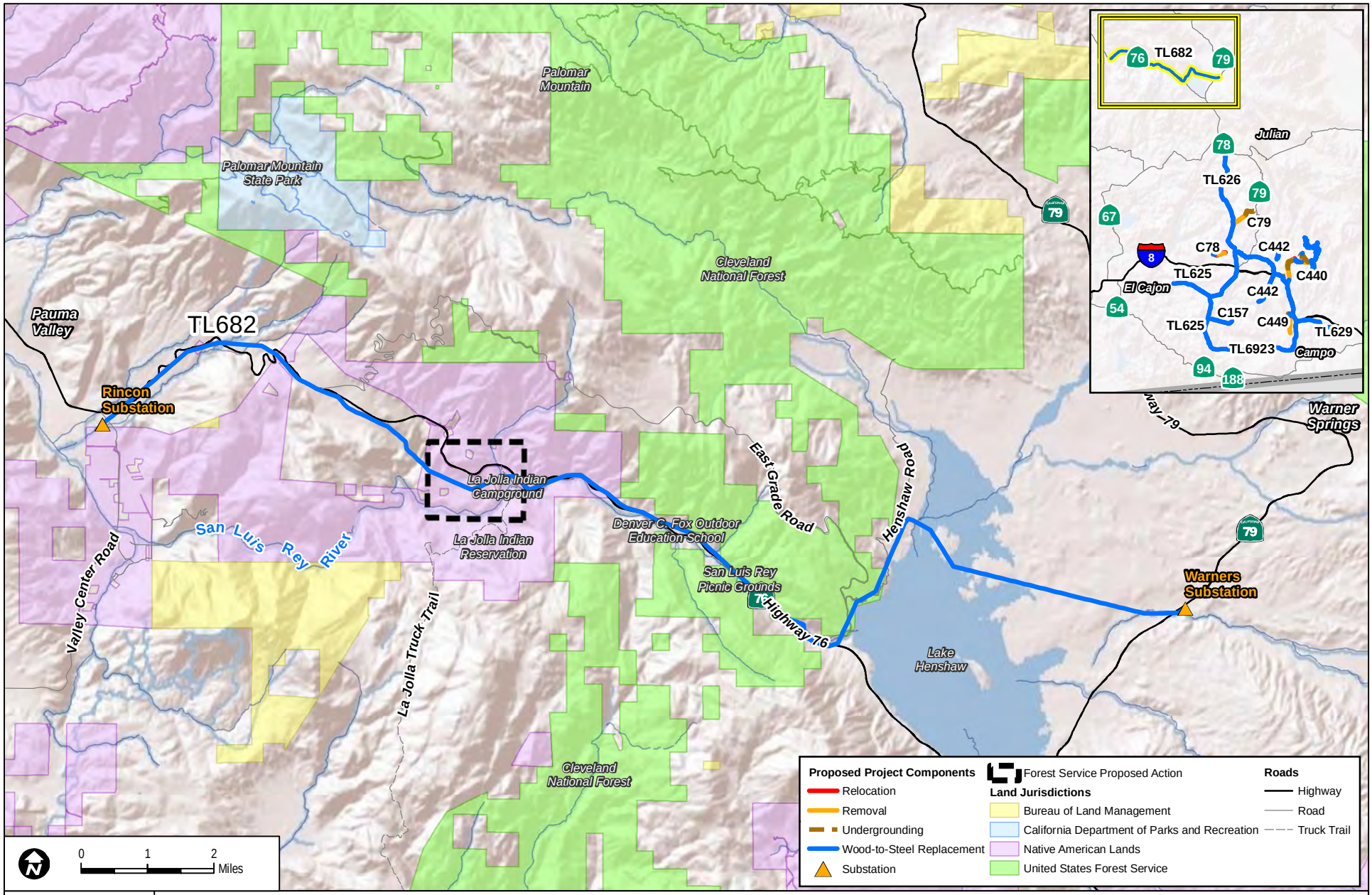
SOURCE: SDG&E 2011; SanGIS 2012; Bing Maps

FIGURE B-2a

Facilities Included Under the MSUP

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

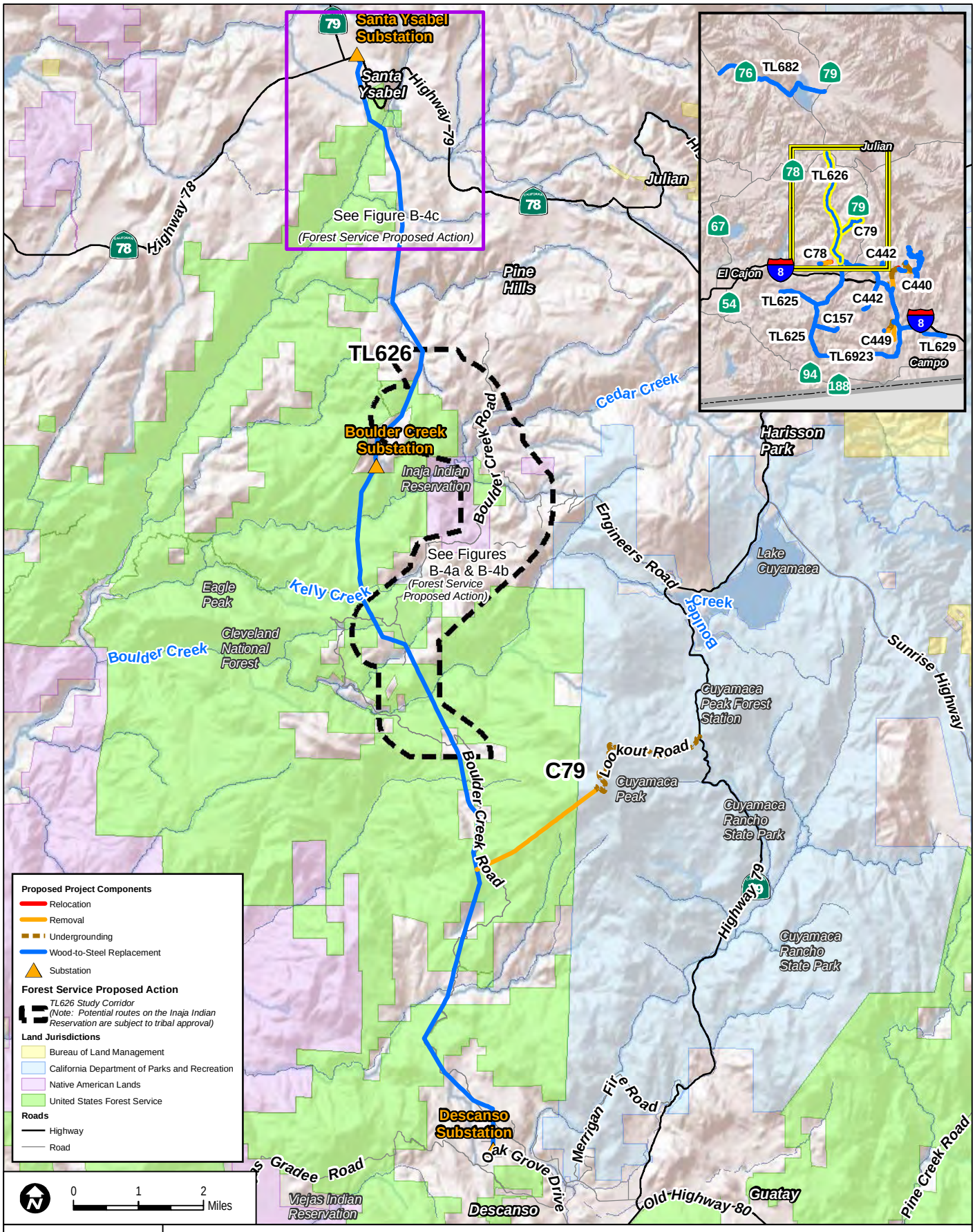
SOURCE: SDG&E 2011; USGS; SanGIS 2012; Bing Maps

FIGURE B-3

TL682 Overview Map

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

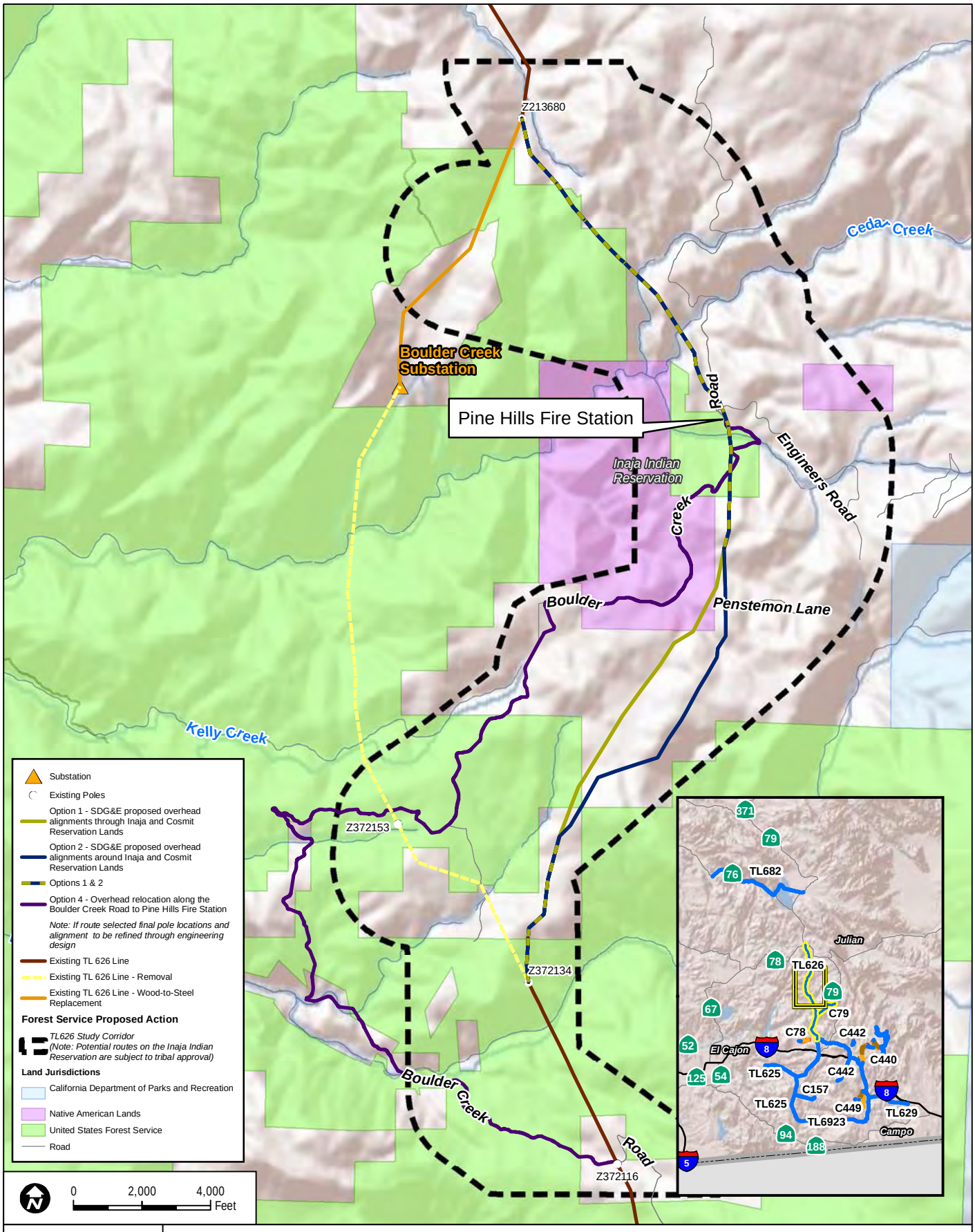
SOURCE: SDG&E 2011; USGS; SanGIS 2009; Bing Maps

FIGURE B-4

TL626, C79 Overview Map

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

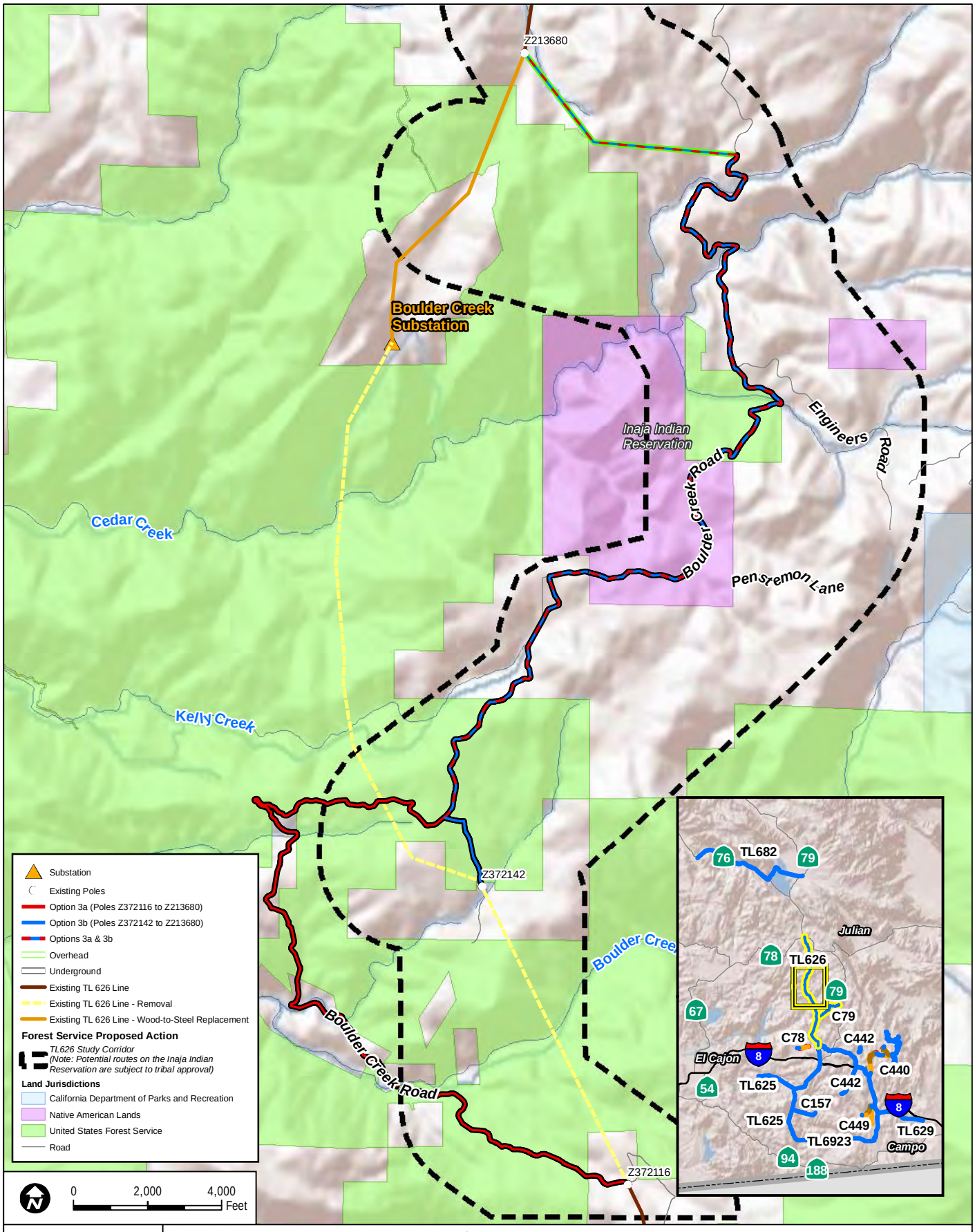
SOURCE: SDG&E 2011, 2014; USGS; SanGIS 2009, 2012; Bing Maps

FIGURE B-4a

Forest Service Proposed Action - TL626 Alternative Overland Routes *(Options 1, 2 & 4)*

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

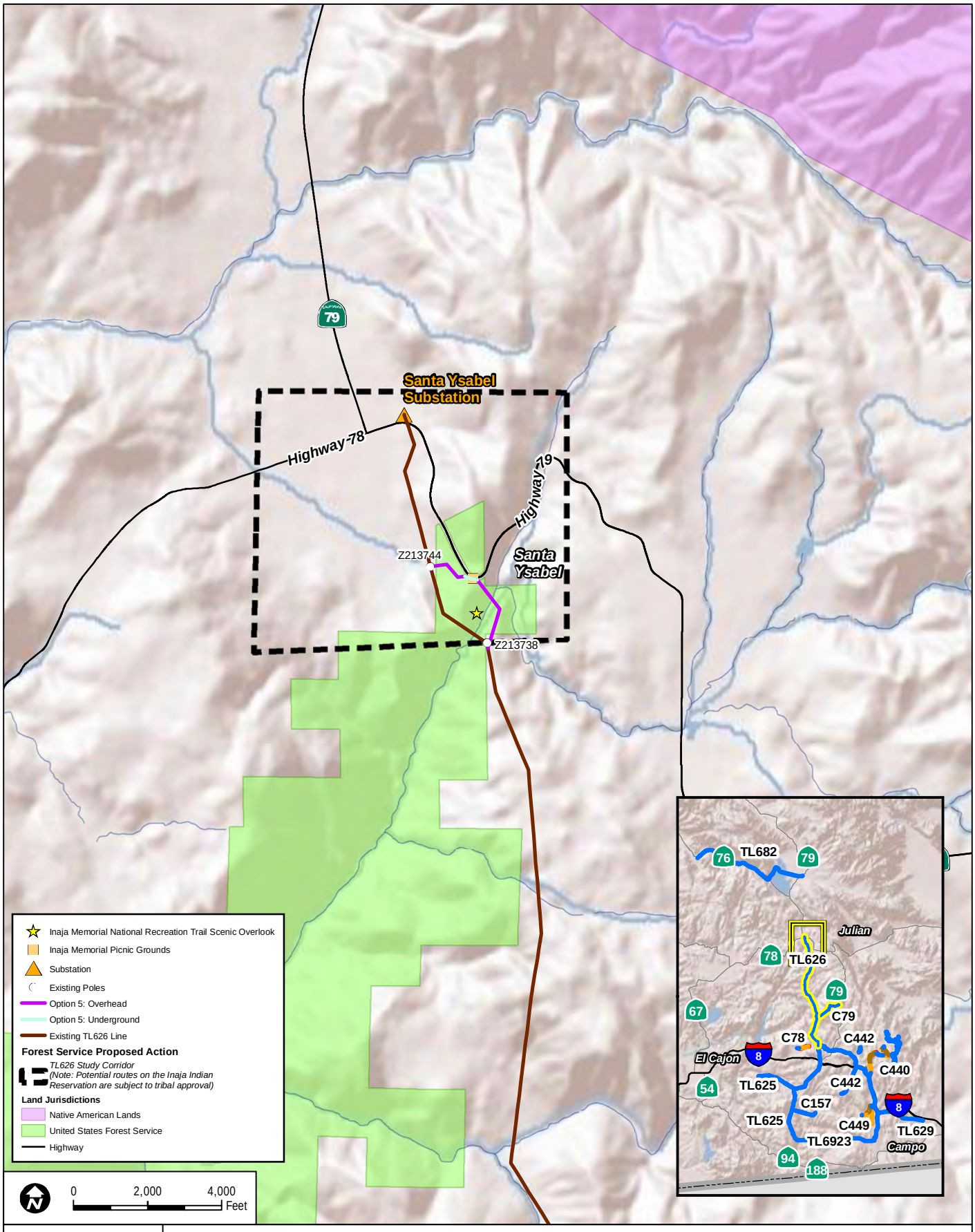
SOURCE: SDG&E 2011, 2014; USGS; SanGIS 2009, 2012; Bing Maps

FIGURE B-4b

Forest Service Proposed Action - TL626 Underground Relocation in Boulder Creek Road *(Options 3a and 3b)*

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

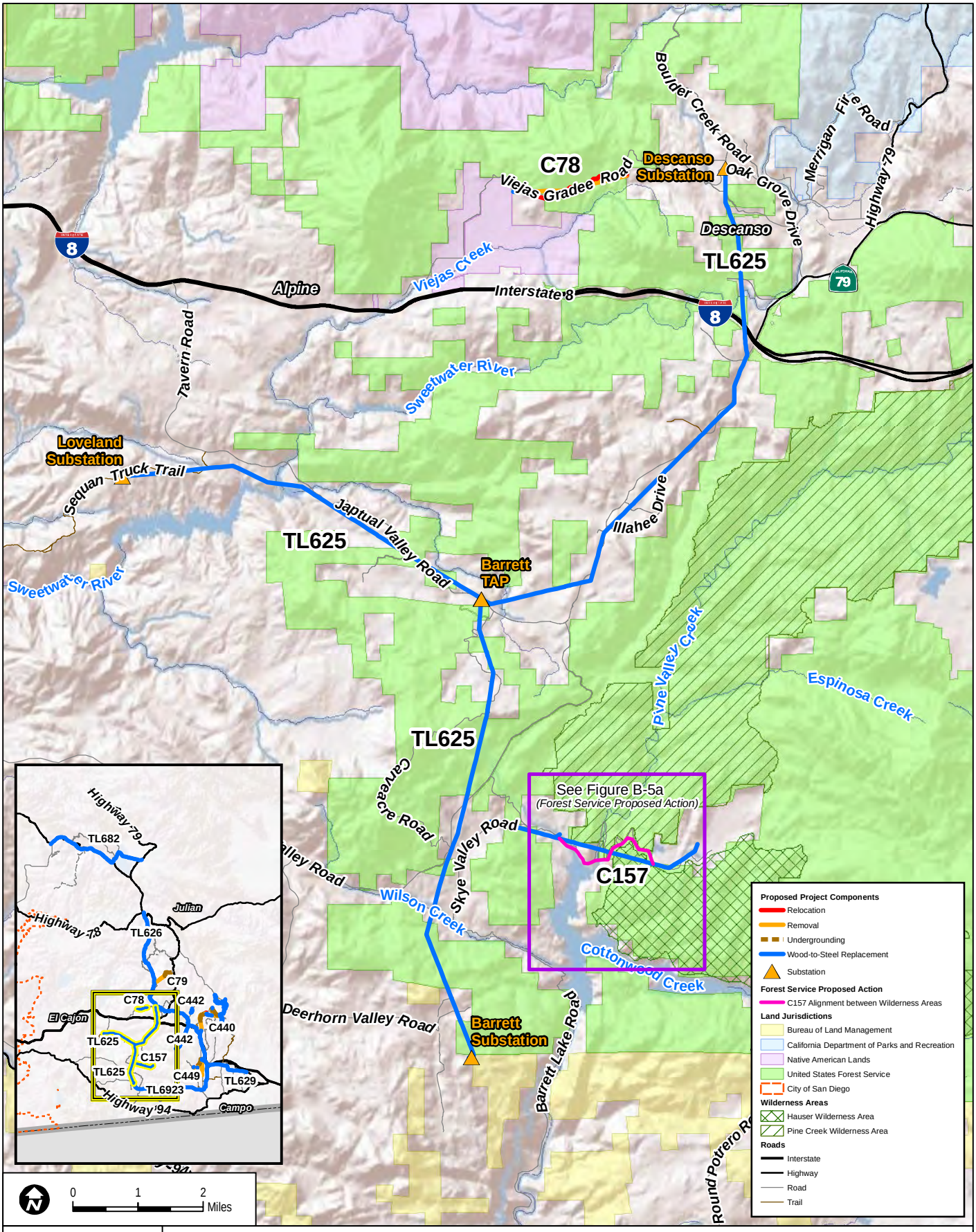
SOURCE: SDG&E 2011; USGS; SanGIS 2012; Bing Maps

FIGURE B-4c

Forest Service Proposed Action - Reroute and Undergrounding around Inaja Picnic Area *(Option 5)*

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

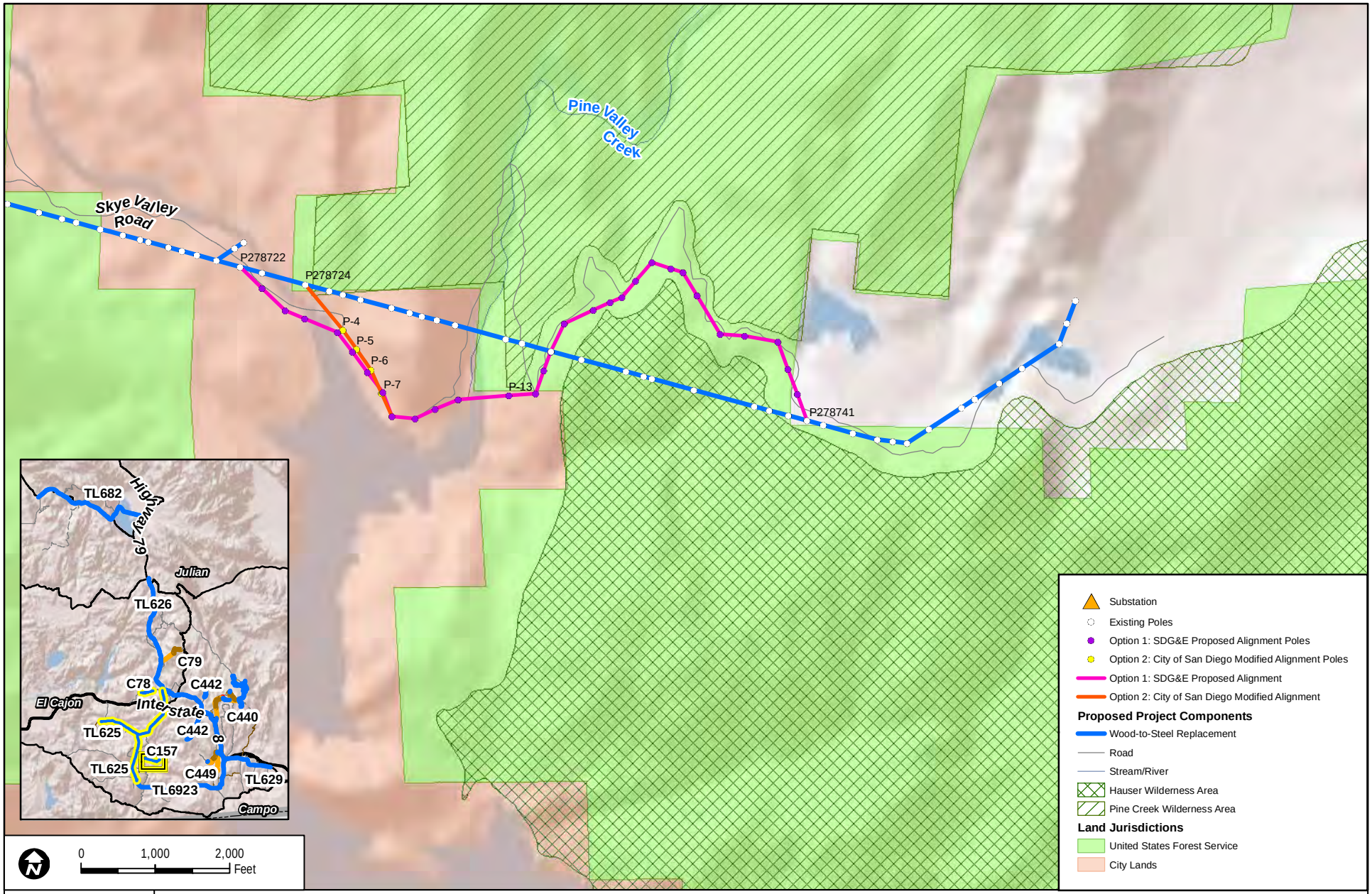
SOURCE: SDG&E 2011, 2014; USGS; SanGIS 2012; Bing Maps

FIGURE B-5

TL625, C78, C157 Overview Map

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

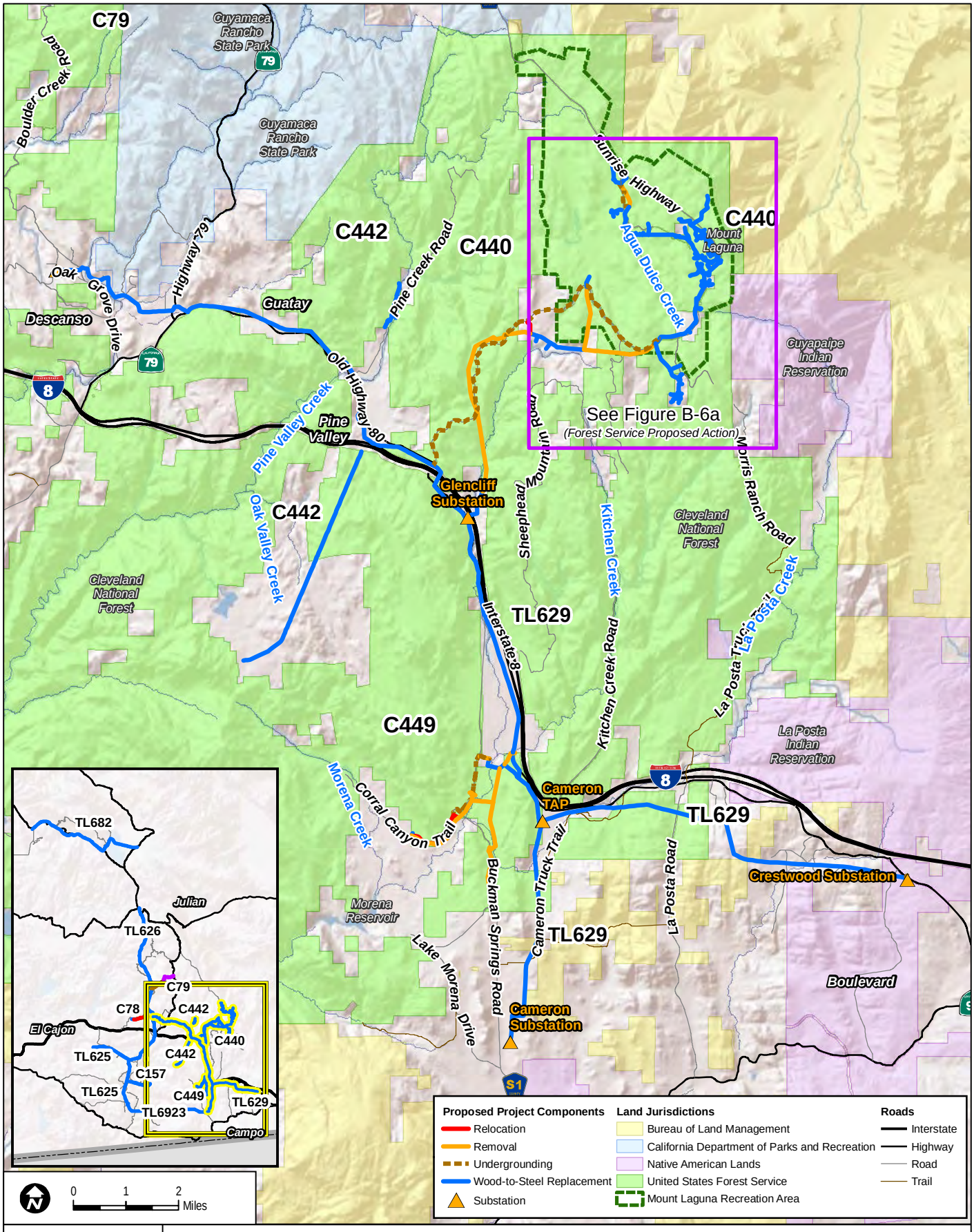
SOURCE: SDG&E 2011, 2014; USGS; SanGIS 2009, 2012; Bing Maps

FIGURE B-5a

Forest Service Proposed Action - C157 Partial Relocation to Avoid Designated Wilderness

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

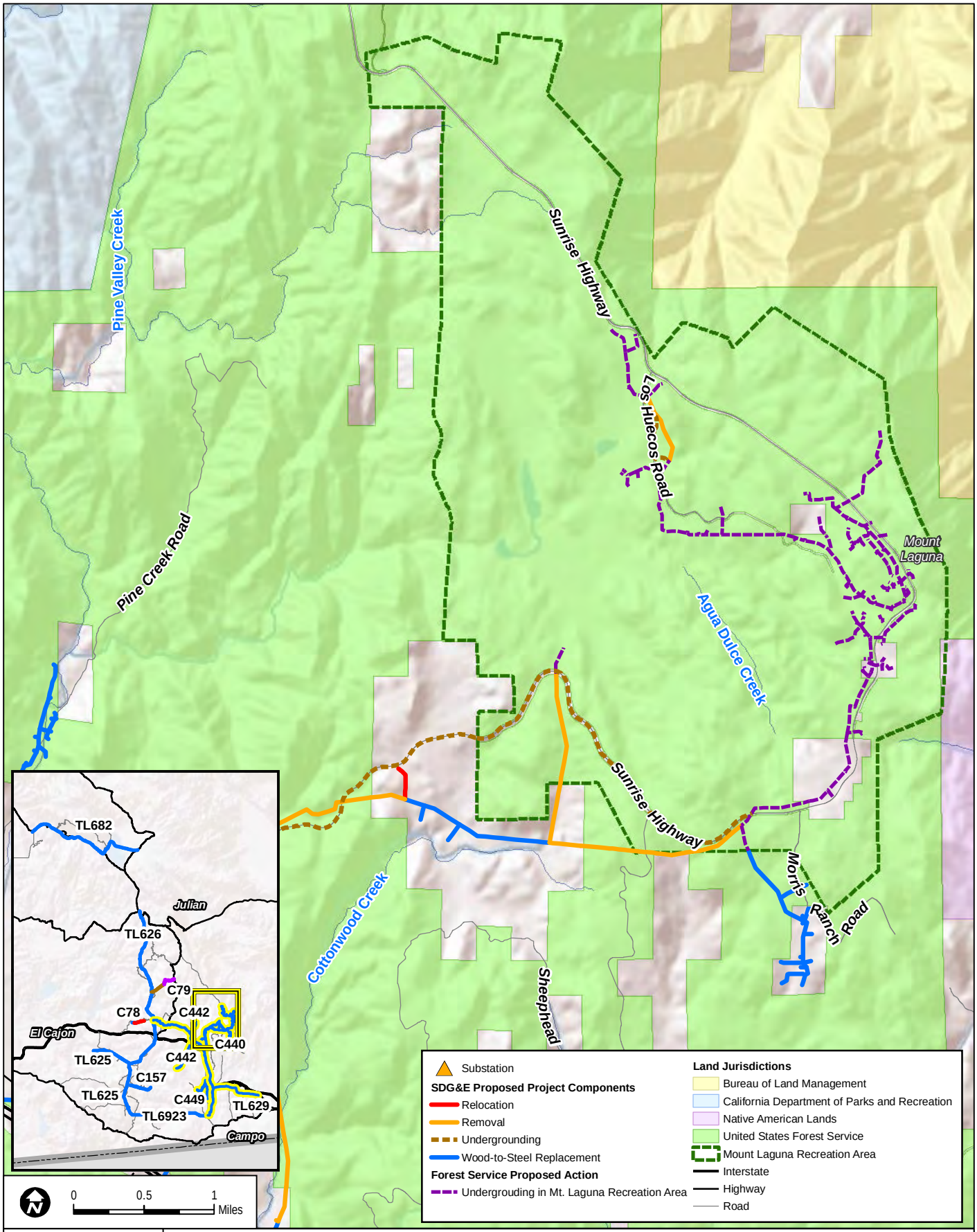
SOURCE: SDG&E 2011; USGS; SanGIS 2012; Bing Maps

FIGURE B-6

TL629, C440, C442, C449 Overview Map

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

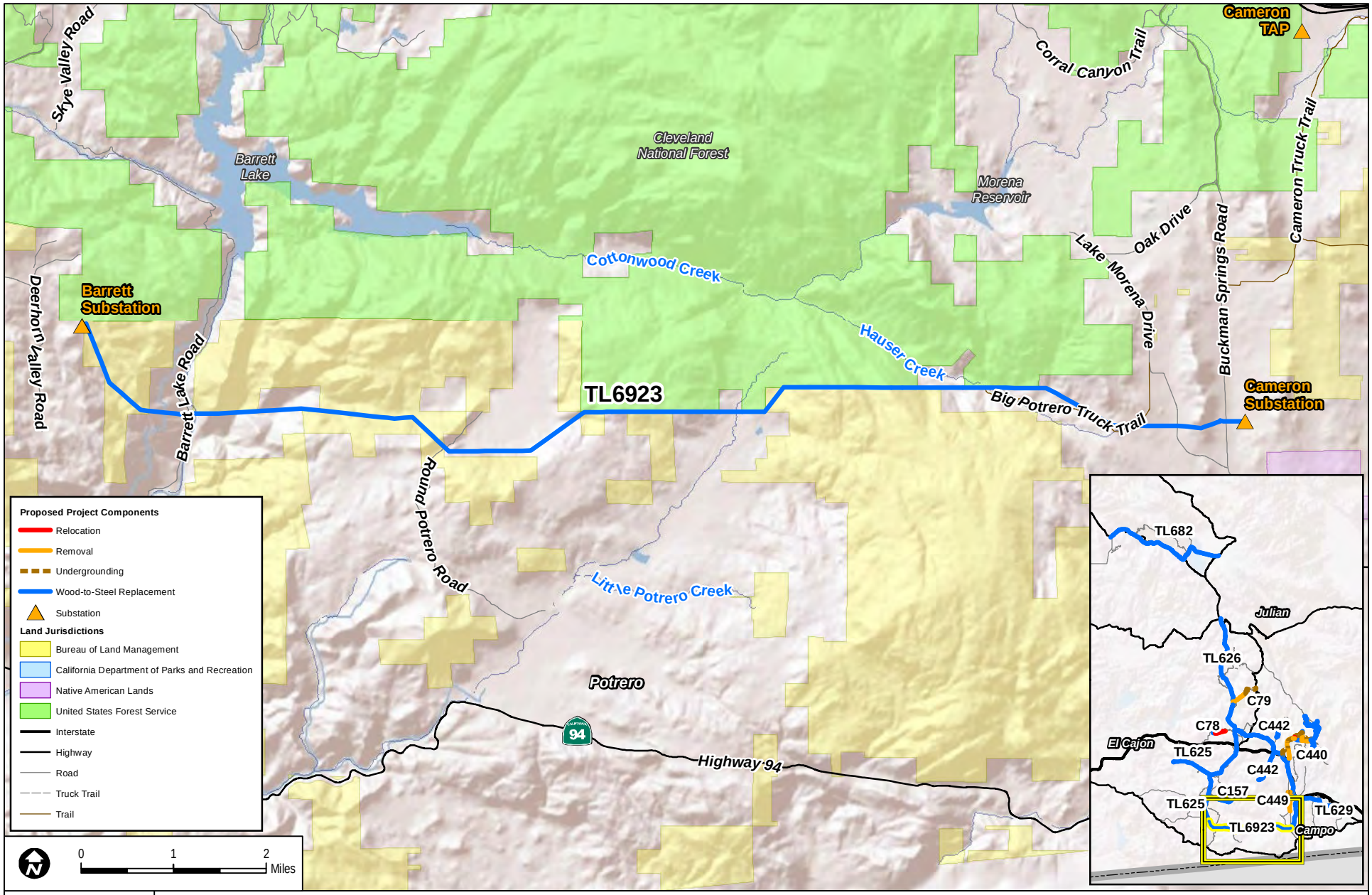
SOURCE: SDG&E 2011; USGS; SanGIS 2012; Bing Maps

FIGURE B-6a

Forest Service Proposed Action - C440 Mount Laguna Recreation Area Underground Alternative

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

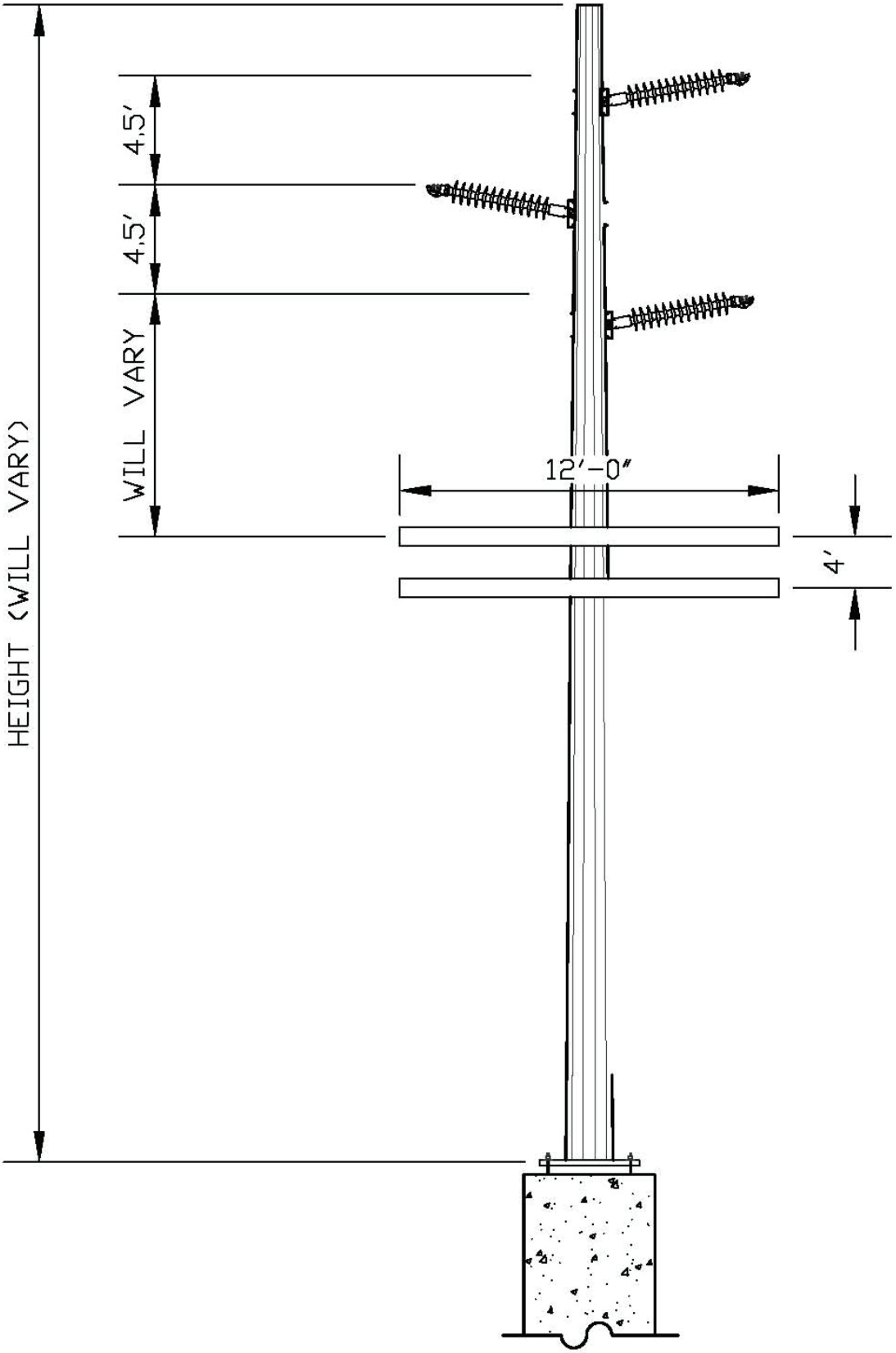
SOURCE: SDG&E 2011; USGS; SanGIS 2012; Bing Maps

FIGURE B-7

TL6923 Overview Map

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

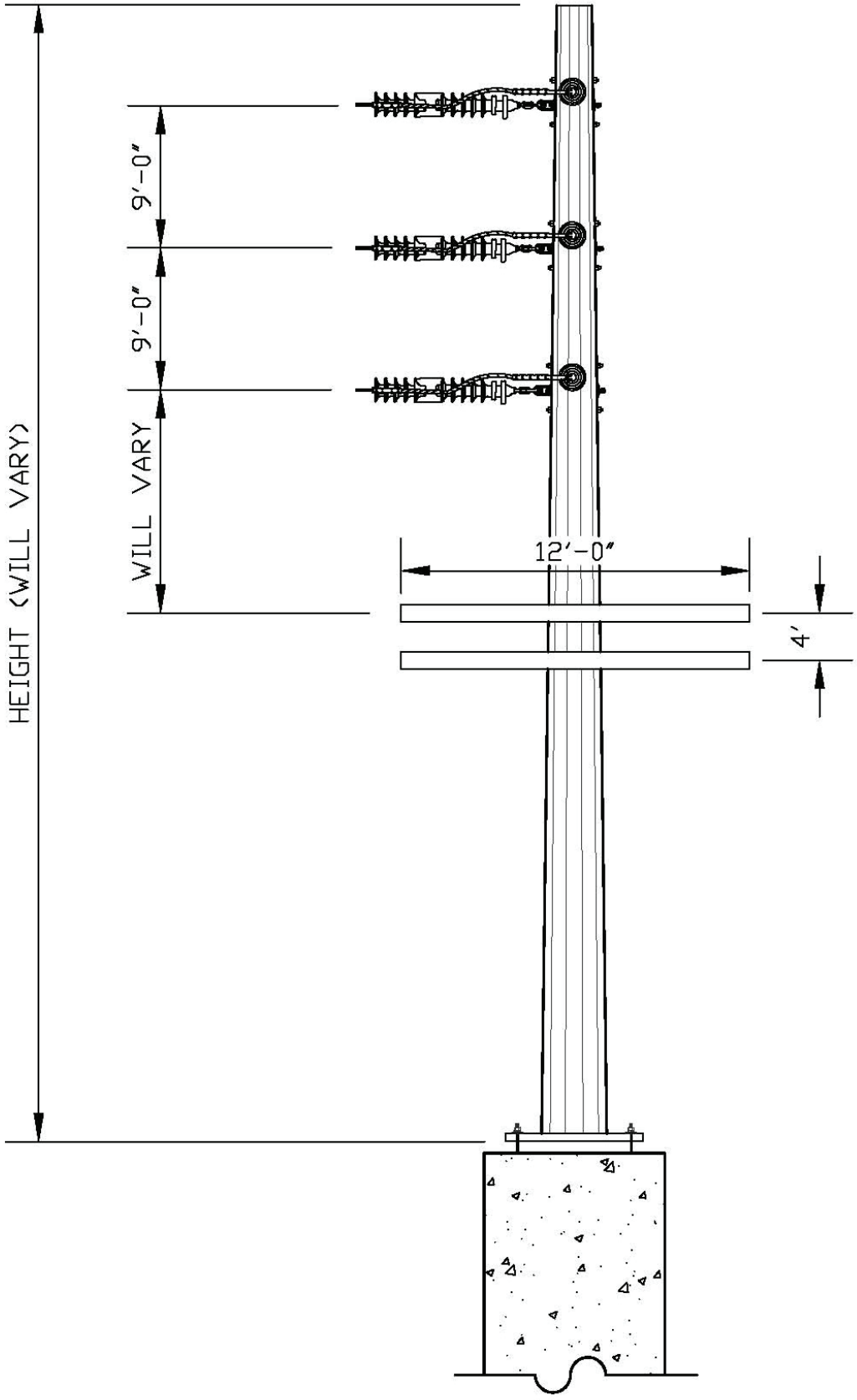
SOURCE: SDG&E 2013a

FIGURE B-8

Proposed Single-Circuit Tangent Transmission Pole

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

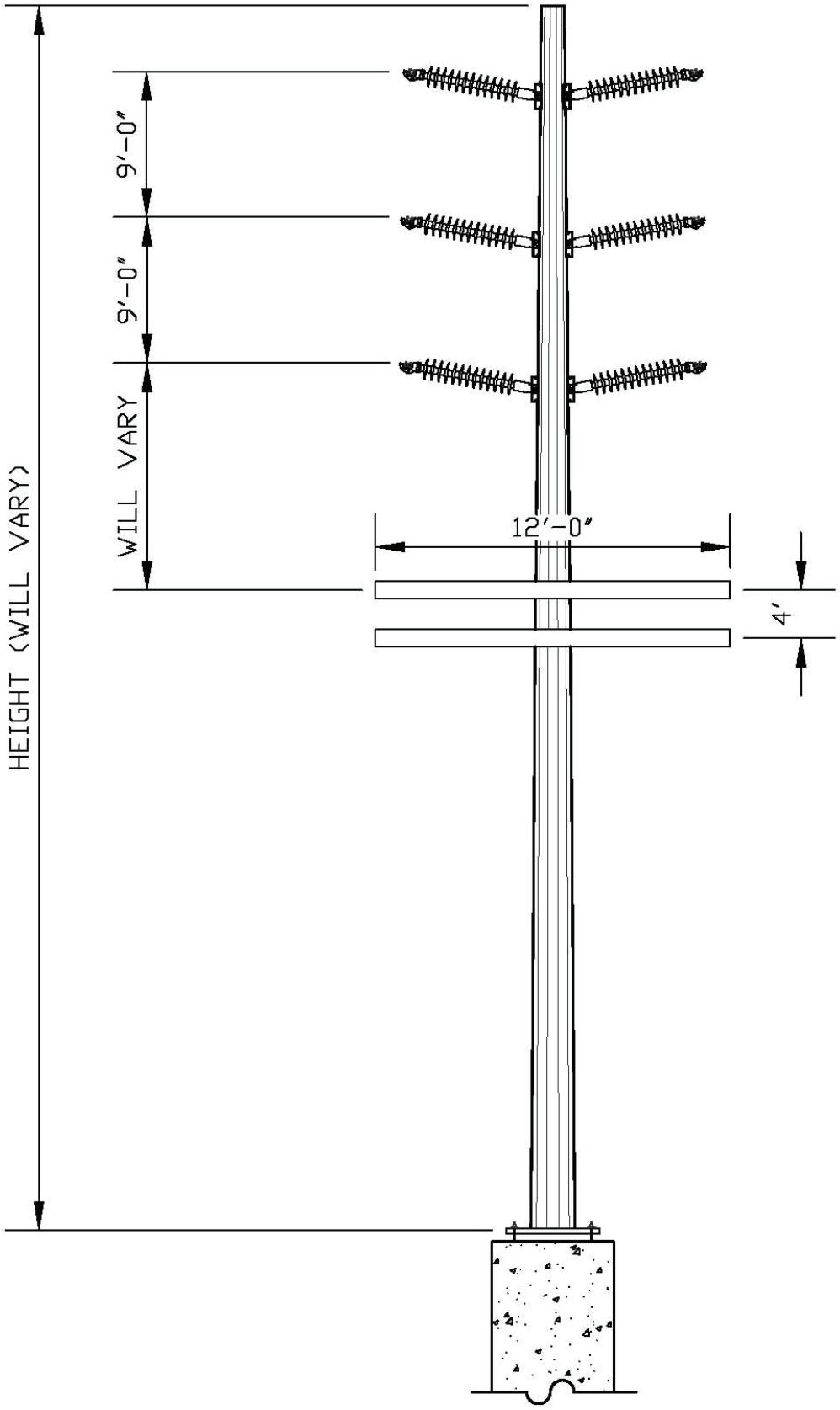
SOURCE: SDG&E 2013a

FIGURE B-9

Proposed Single-Circuit AngleTransmission Pole

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

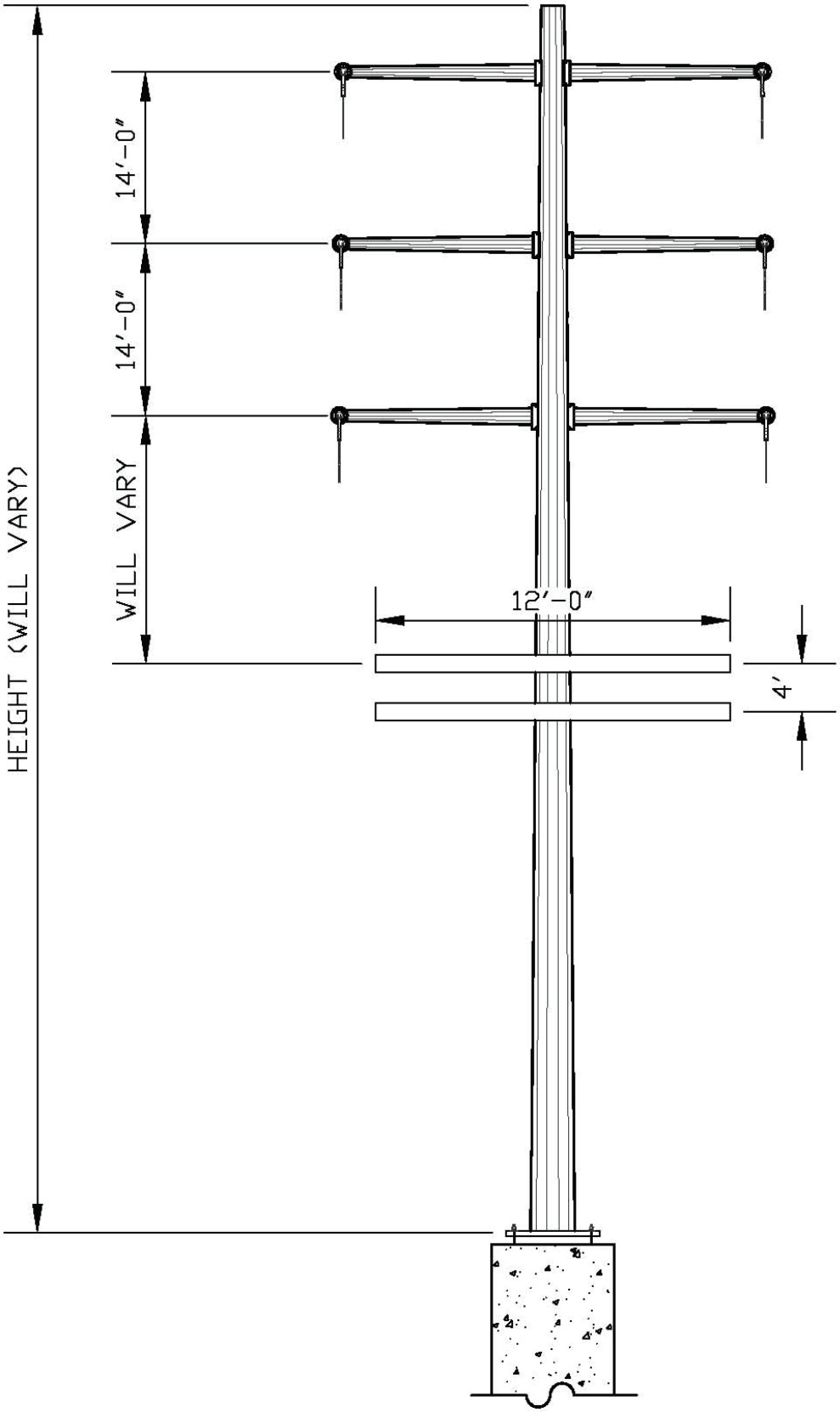
SOURCE: SDG&E 2013a

FIGURE B-10

Proposed Double-Circuit Tangent Transmission Pole

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

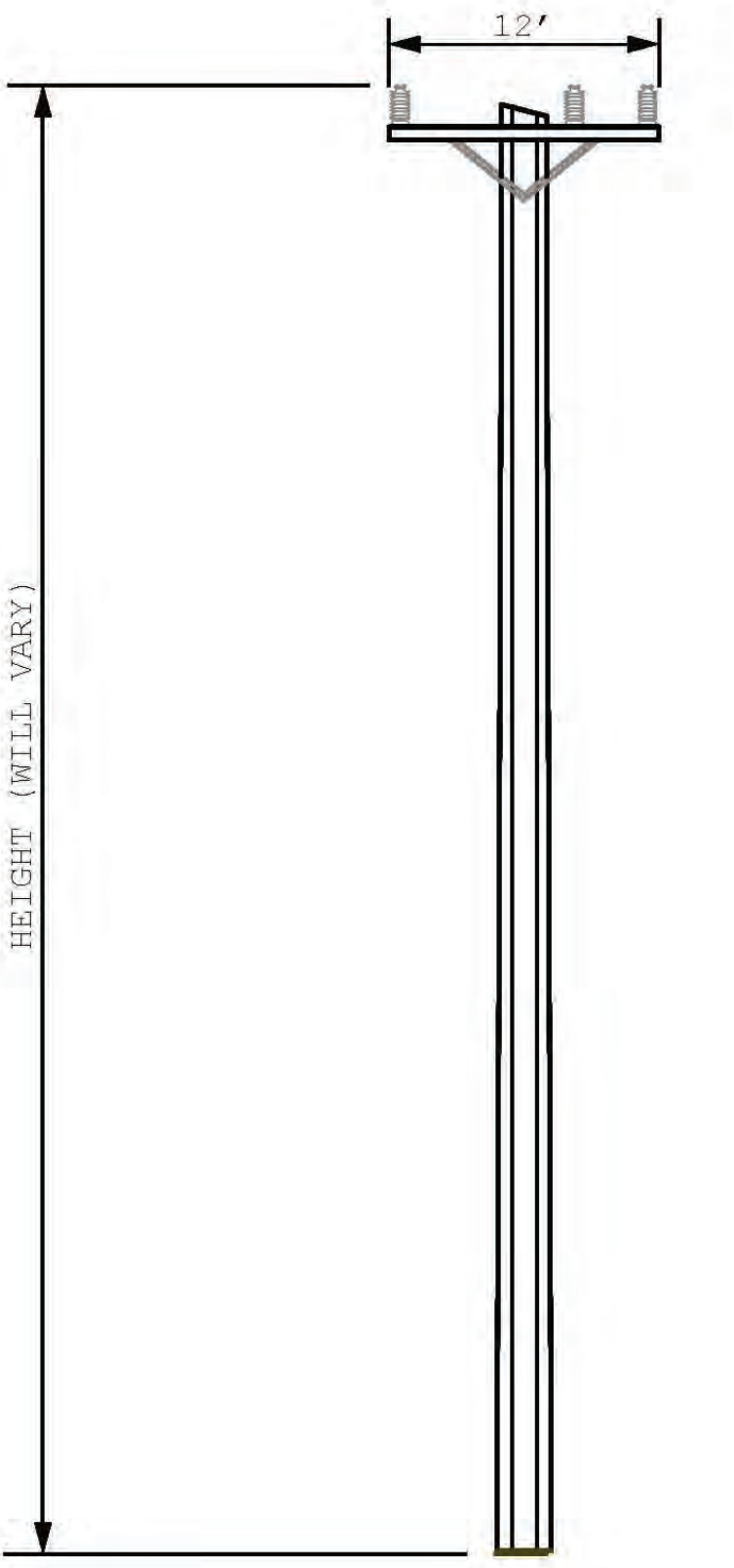
SOURCE: SDG&E 2013a

FIGURE B-11

Proposed Double-Circuit Transmission Angle Pole

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

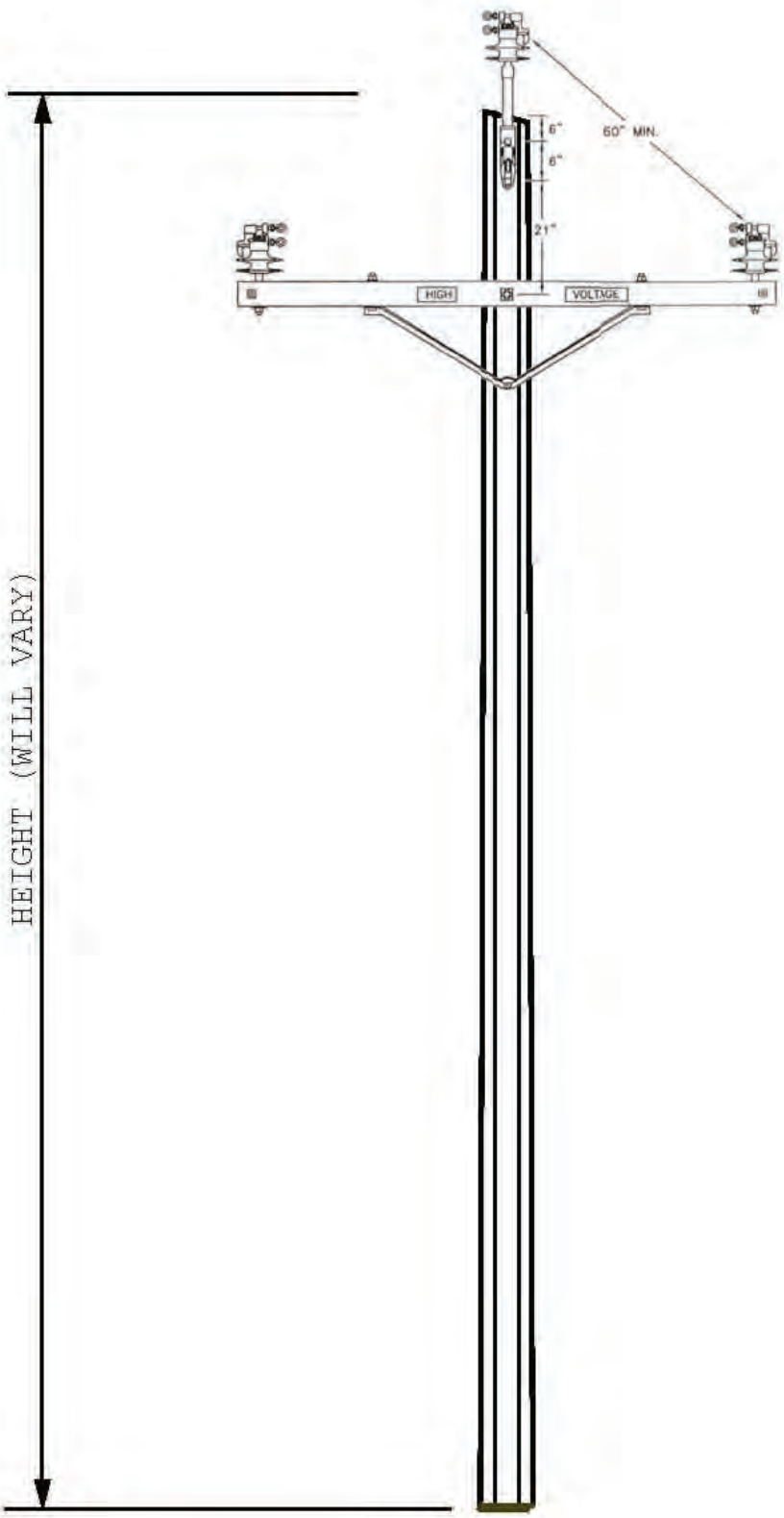
SOURCE: SDG&E 2013a

FIGURE B-12a

Proposed Steel Distribution Pole

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

SOURCE: SDG&E 2013a

FIGURE B-12b

Proposed Steel Distribution Pole

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK

DUDEK

7014

SOURCE: SDG&E 2013a

FIGURE B-13

Proposed Distribution Riser Pole

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK

C. ALTERNATIVES DEVELOPMENT AND SCREENING

This section provides an overview of the alternatives development and screening process used to determine which alternatives have been selected for full evaluation in the EIR/EIS for the subject project and those eliminated from further consideration. Section C.1 is an overview of alternatives required by both CEQA and NEPA. Section C.2 provides an overview of the development of additional alternatives. Section C.3 describes the methodology used to consider whether an alternative should be further evaluated in the EIR/EIS or eliminated from further consideration. Section C.4 describes the additional alternatives that have been retained for full EIR/EIS analysis, and Section C.5 describes the alternatives eliminated from full EIR/EIS analysis and rationale for elimination.

C.1 Required Alternatives

In addition to detailed consideration of SDG&E's proposed project, both CEQA and NEPA mandate detailed consideration of the Federal proposed action, the No Project and the No Action Alternatives. These actions and alternatives are discussed in the EIR/EIS in detail as required and are not subject to screening.

C.1.1 SDG&E Proposed Project

SDG&E's proposed project would include issuance of a Master Special Use Permit (MSUP) for the SDG&E system in the Cleveland National Forest (CNF), and would fire harden select lines within the SDG&E System both on and off the CNF; see Figure B-2 and Section B, Project Description, of the EIR/EIS for detailed description.

C.1.2 Federal Proposed Action

The Federal proposed action includes actions proposed by the Forest Service, Bureau of Indian Affairs (BIA), and the Bureau of Land Management (BLM). The Forest Service proposed action would include issuance of an MSUP for the SDG&E system in the Cleveland National Forest and modifies SDG&E's proposed project along TL626 (see Figures B-2 and B-4a through B-4c), C157 (see Figures B-2 and B-5a), and C440 (see Figures B-2 and B-6a) as described in Section B.3.2 of the EIR/EIS. The BIA proposed action also includes upgrades to facilities on La Jolla Reservation lands as proposed by the La Jolla Band of Luiseño Indians, as described in Section B.3.2.4. The BLM proposed action would include portions of SDG&E's proposed power line replacement project for TL629, TL625, and TL6923, as described in Section B.3.2.5.

C.1.3 No Action Alternative – No MSUP Issued

Under NEPA, the No Action Alternative (CFR Section 1502.14(d)) provides the decision makers with a useful comparison of environmental effects of the proposed action and alternatives and demonstrates the consequences of not authorizing the continued occupancy of the existing electrical lines. The impacts of these actions are discussed briefly here and are evaluated in each issue area's analysis in Section D of this EIR/EIS.

Under the No Action Alternative, the MSUP would not be issued for the existing electric lines, and the existing permits would terminate according to their terms. Those expired permits require the holder (SDG&E) to remove the existing 102 miles of electric lines and 45 miles of access road, and restore the site to conditions acceptable to the Forest Service.[1] The Forest Service would manage the land under its jurisdiction consistent with the CNF Land Management Plan (LMP). Accordingly, no pole replacement, ground disturbance, or other project effects would occur associated with SDG&E's proposed project as no pole replacement, construction, or long-term operations and maintenance associated with the electric lines would be authorized on National Forest System lands. Under this alternative, SDG&E would need to redesign the existing electric system to avoid National Forest System lands in order to meet the electric demand in their service territory.

C.1.4 No Project Alternative

CEQA requires an evaluation of the No Project Alternative so that decision makers can compare the impacts of approving the project with the impacts of not approving the project. According to CEQA Guidelines (Section 15126.6[e]; 14 CCR 15000 et seq.), the No Project Alternative must include (a) the assumption that conditions at the time of the Notice of Preparation (NOP) (i.e., baseline environmental conditions) would not be changed since SDG&E's proposed project would not be installed and (b) the events or actions that would be reasonably expected to occur in the foreseeable future if the project were not approved. This section describes reasonably foreseeable events or actions expected to occur if the project is not approved. Section D of this EIR/EIS describes the impacts associated with these reasonably foreseeable events by issue area. Section D also describes conditions at the time the NOP was issued for each environmental issue area as the "environmental baseline," since no impacts of SDG&E's proposed project would be created. Under the No Project Alternative, the existing alignments within the CNF would be maintained as they are currently, under their approximately 70 separate permits and easements. In addition, none

[1] The removal of infrastructure and site restoration is addressed under the existing permits under NEPA. However, these activities will require review under CEQA.

of the proposed fire hardening activities would be authorized. SDG&E would continue to operate its existing facilities. Existing wood poles would be replaced, as needed per standard operations and maintenance practices. Further, single- to double-circuit conversion would not occur on portions of TL625 and TL629. In addition, the Operation and Maintenance Plan, Fire Control Plan, and other plans required under an MSUP would not be prepared for facilities within the CNF. Any operations, maintenance, fire prevention measures, and erosion control work would be based on the requirements of the existing permits.

C.2 Development of Additional Alternatives

Numerous alternatives to SDG&E's proposed project and the Federal proposed action were suggested during the public scoping and supplemental scoping periods by the general public in response to the NOP and Notice of Intent (NOI) as well as additional information provided through the data request process with SDG&E. It should be noted that the undergrounding alternative proposed through scoping for Boulder Creek Road is considered in the Forest Service Proposed Actions. Other alternatives were developed by the project applicant and EIR/EIS preparers in response to issues raised. In total, 17 additional alternatives to those required under CEQA and NEPA were identified in the following categories during scoping:

- Alternatives to TL626
  - TL626 Alternative 1: Relocate Along State Route 79 (SR-79)
  - TL626 Alternative 2: Demand Side Management Options
  - TL626 Alternative 3: Removal from Service (Upgrade TL6931 or TL625)
  - TL626 Location Alternatives.
- Alternatives to C157
  - C157 Partial Underground Alternative
  - C157 Alternative Route 1: Corte Madera Ranch to Skye Valley Ranch
  - C157 Alternative Route 2: Los Pinos to Skye Valley Ranch.
- Additional undergrounding alternatives
  - Underground all Tie-lines and Circuits Alternative
  - Underground Tie-lines and Circuits within Existing Roadways.
- Design Alternatives
  - Partial Removal of Overland Access Roads
  - Alternative Pole Design 1 – Height
  - Alternative Pole Design 2 – Material.

- System Alternatives
  - System Alternative 1: Consolidate TL6923 and TL625 along Sunrise Powerlink
  - System Alternative 2: Additional Consolidation and Removal of Facilities
  - System Alternative 3: No-Wire Alternative
  - System Alternative 4: Fire harden with similar materials and improve fire hardening by increasing vegetation management and system maintenance oversight
  - System Alternative 5: Distributed Generation.

C.3 Screening Methodology

Additional alternatives for consideration in the Draft ElR/EIS were screened using CEQA and NEPA alternatives screening criteria. Under CEQA Guidelines, those criteria include whether the alternative has the potential to meet most project objectives, is feasible, and has the ability to avoid or substantially lessen significant environmental effects (CEQA §15126.6 et seq.). Under NEPA, the regulations require consideration of reasonable alternatives (40 CFR 1502.14). A reasonable alternative meets the purpose and need, addresses an issue, and is practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.

Project objectives criteria compared each alternative using the following project objectives based on applicant-supplied material:

1. Secure Forest Service authorization to continue to operate and maintain existing SDG&E facilities within the National Forest System lands
2. Increase fire safety and service reliability of these facilities by replacing five existing 69-kilovolt (kV) power line facilities and six existing 12 kV distribution line facilities
3. Undertake these activities consistent with California Public Utilities Commission (CPUC) General Orders and North American Electric Reliability Corporation/ Federal Energy Regulatory Commission (NERC/FERC) requirements.

NEPA Purpose and Need criteria compared the alternatives to the Forest Service purpose and need:

1. Continue electric service to a variety of users within and adjacent to the CNF
2. Issue an MSUP consistent with the CNF LMP.

Feasibility criteria included whether the alternative is feasible from a technological perspective, considering engineering requirements, maturity of the technology in the marketplace, and whether restrictions exist that would substantially limit the feasibility of meeting project objectives.

Environmental criteria included comparing potential issues and environmental effects as identified in the project's NOP and NOI with those of each alternative.

C.4 Additional Alternatives Evaluated

In addition to the required alternatives mandated by both CEQA and NEPA, a total of 17 additional alternatives were considered for analysis in the EIR/EIS. Of the 17 alternatives considered, the following 2 additional alternatives have been carried forward for full analysis in the EIR/EIS:

- Partial Removal of Overland Access Roads
- Removal of TL626 from Service (Upgrade TL6931 or TL625).

C.4.1 Partial Removal of Overland Access Roads

Description

A terrain analysis along the exclusive-use SDG&E access roads was conducted to identify locations along the proposed lines that exceed grades of 25% for appreciable distances in proximity to creeks. The 25% slope break is based in general on the physical inability to effectively control runoff volume and velocity on roads steeper than 25% road grade, even with implementation of standard drainage designs. Not all road segments identified as having a 25% slope or greater have problems associated with drainage; therefore, the exact location of roads segments that are too steep to implement in-place design fixes would need to be determined by a qualified professional geologist, professional engineer, or certified engineering geologist. For purposes of comparison with SDG&E's proposed project in terms of the impacts/benefits of managing SDG&E's electrical facilities within and surrounding the CNF, without road access, this alternative assumes the following. In addition to the 11 miles of access roads that would be removed under the applicant's proposed project, up to 10.5 miles of SDG&E exclusive-use access roads were identified as being problematic from an erosion and sedimentation standpoint due to the potential for slopes to exceed a gradient of 25%. Even with implementation of engineered designs that address drainage (e.g., out-sloping and cross drains), unpaved access roads exceeding 25% grade would be likely to continue experiencing significant erosion issues unless they were removed. These sections include but are not limited to:

- TL626 south of Eagle Creek Road and north of Boulder Creek Road: Access roads for this segment of the line cross steep terrain on either side of Boulder Creek, Cedar Creek, and Kelly Creek along the flanks of Sill Hill, Mineral Hill, and Sunshine Mountain. Steeply sloped sections of the access roads exceed 400 feet in places.
- TL625 in the Vicinity of Barber Mountain Road: Access roads for this segment of the line cross steep terrain on the sides of Barber Mountain, across Pats Canyon and near Wilson Creek.
- TL625 north of Lyons Valley Road and south of Carveacre Road: Access roads for this segment of the line cross steep terrain east of Lawson and Gaskill Peaks and west of the Pine Creek Wilderness.
- C442 east of Oak Valley and south of Interstate 8 (I-8), on the western flanks of Long Peak: Access roads cut a straight path over hilly terrain, resulting in steep segments along 1 mile of the access roads.
- Short segments of TL629 on either side of Cameron Valley and east of Pine Valley: Access roads have grades that exceed 25%.

Under this alternative, fill would be removed from stream crossings, and the road bed would be ripped and contoured to drain properly, and allowed to passively restore to natural conditions. Access controls such as locked gates, boulders or other appropriate means would be installed to discourage continued unauthorized access. SDG&E would carry out maintenance activities along these segments using helicopters, as described in SDG&E's Plan of Development (POD) (SDG&E 2013). All other aspects of SDG&E's proposed project would remain unchanged.

Rationale for Full Analysis

The alternative meets screening criteria for project objectives, purpose and need and feasibility as it would meet the reliability needs for existing energy users and would reduce water quality impacts. This alternative would also meet environmental screening criteria as it would remove portions of the existing access roads which due to steep gradients that prevent effective implementation of erosion controls directly impacting riparian areas thereby having the potential to reduce long-term environmental effects associated with overland access in rugged terrain. Consequently, this alternative has been carried forward for full analysis in this EIR/EIS.

This alternative would require CPUC and Forest Service approval. The roadway segments determined to be improved on forest service managed-lands would be included in the MSUP.

C.4.2 Removal of TL626 from Service

Description

Under this alternative, TL626 would be removed from service. SDG&E would implement the following system upgrades and changes in order to provide service lost due to the removal of TL 626 (SDG&E 2014a):

a. Upgrade the existing 6-mile 69 kV TL6931 by fire hardening and adding a second 69 kV circuit from the Boulevard Substation to the Crestwood Substation (see Figure C-1), or

b. Modify existing TL 625 by constructing a new 3-mile double circuit loop-in into the Suncrest Substation. The new double circuit 69 kV line would primarily cross National Forest System lands immediately adjacent to the 500 kV Sunrise Powerlink. A new transformer and substation rack would be installed within the existing footprint of the Suncrest Substation to establish the new 69 kV source (see Figure C-2).

c. In order to serve existing customers, a 6.8-mile section of TL626 that is co-located with C79 would be converted to a 12 kV fire hardened distribution line and at Boulder Creek Substation this alternative would also either convert a 6.5-mile section of TL626 from 69 kV to 12 kV distribution between the Santa Ysabel and Boulder Creek Substations or, upon agreement with the existing customer, provide an off-grid solution. The off-grid solution would include the construction of an approximately 5-kilowatt photovoltaic (PV) array and accompanying battery bank, as well as a diesel- or liquid propane-powered backup generator, in close proximity to the existing customer near the Boulder Creek Substation.

This alternative would require CPUC approval. In addition, three components of this alternative would require Forest Service approval and would be included in the MSUP, including the modified TL625, the converted TL626 between Santa Ysabel and Boulder Creek Substations, and the fire hardened C79 distribution line. The portion of the upgraded TL6931 that crosses the Campo Indian Reservation would require approval from the tribe and BIA. The off-grid solution would require the existing customer near Boulder Creek Substation to agree to placing an off-grid solution on their property. If agreed to by the existing customer, the off-grid solution for on-site use is not subject to CPUC or Forest Service approval and is allowed by the County of San Diego upon approval of a building permit. A building permit from the County of San Diego is a ministerial action.

Rationale for Full Analysis

This alternative meets screening criteria for project objectives, purpose and need, feasibility, and environmental considerations as it would meet reliability needs for existing energy users. It

would eliminate conflicts with the CNF LMP without substantially creating additional impacts due to increased disturbance area. This alternative would also remove approximately 3.5 miles of the existing line and associated access roads that are causing water quality impacts in the Cedar Creek watershed. Converting the remainder of TL626 to a 12 kV distribution line would reduce the visual impacts of the line along the Boulder Creek Road. Upgrading TL625 adjacent to the existing Sunrise Powerlink is consistent with CNF LMP direction to co-locate facilities, and would occur within suitable land use zones. Consequently, this alternative minus the off-grid solution near Boulder Creek Substation has been carried forward for full analysis in this EIR/EIS.

The off-grid solution has not been carried forward for full analysis in the EIR/EIS as a separate and standalone option to meet the energy demands of the customer near the Boulder Creek Substation as approval by the County of a building permit is a ministerial action and not subject to CEQA or NEPA.

C.5 Alternatives Eliminated From Further Consideration

The following alternatives were evaluated for their potential to meet CEQA and NEPA alternatives screening criteria and were ultimately eliminated from further consideration as described in this section.

C.5.1 TL626 Alternative 1: Relocate Along State Route 79

Description

TL626 Alternative 1 would be within the vicinity of the Forest Service TL626 study corridor. As described in SDG&E's data response 5, this alternative would eliminate an approximately 7-mile segment of the TL626 alignment between pole locations Z372116 and Z213680 (see Figure C-3) and instead would meet current demand for energy supplied by TL626 through co-locating this segment along SR-79 to the east (2014b). However, in order to continue to serve existing customers along the existing alignment, approximately 3 existing poles north of pole Z372116 and approximately 23 existing poles south of pole Z213680 to the Boulder Creek Substation would be required to be reconstructed. Under this alternative, TL626 would total more than 30 miles in length between the Descanso and Santa Ysabel substations. All other aspects of SDG&E's proposed project would remain unchanged.

Currently, no 69 kV facilities exist along SR-79; however, portions of one distribution circuit, C79, are located along this roadway for a portion of its length between I-8 and SR-78. In order to co-locate a segment of TL626 along SR-79, the existing C79 poles would need to be removed and replaced with steel poles similar in size and type as those described for the 69 kV poles in Section

B of this EIR/EIS (generally 100 feet with a typical diameter of approximately 30 inches (in some instances maximum height would range between 100–120 feet). The existing alignment for TL626 is located in the vicinity of Boulder Creek Road to the west of Cuyamaca Peak, Cuyamaca State Park, and the CNF's Sill Hill Inventoried Roadless Area (IRA); SR-79 is located approximately 5 miles east of the existing TL626 alignment. The realignment of this segment of TL626 to a location along SR-79 would require approximately 4.7 miles of new steel poles traversing the Sill Hill IRA, Cuyamaca State Park, and private lands to reach SR-79 to the east. Once on SR-79 approximately 4.1 miles of new steel poles would be constructed on private lands along SR-79. In order to reconnect the new alignment with the existing alignment at pole Z213680, approximately 5.4 miles of new steel poles would be constructed on private lands. This reroute segment would be approximately 14 miles (see Figure C-3). Table C-1, TL626 System Alternative 1: Relocate along State Route 79 – Approximate Pole Requirements, indicates the estimated number of poles that would be required in the Sill Hill IRA, Cuyamaca State Park, and on private lands in order to relocate this segment of TL626 to along SR-79. In addition, it is estimated that approximately 6.5 miles of new access roads on private lands would need to be established for construction, operations, and maintenance of the new alignment segment. All poles located within the Sill Hill IRA would be constructed and maintained using helicopter access.

Table C-1
TL626 Alternative 1: Relocate Along State Route 79 –
Approximate Pole Requirements

Property	Approximate Number of Miles Crossed	Approximate Number of Poles in Alternative Segment*
Sill Hill IRA	1.6	24
Cuyamaca State Park	2.7	41
Private Lands	9.9	149
Total	**14.2**	**214**

* Based on average of 15 poles per mile.

Note: Number of poles estimated based on the average number of poles per mile along the existing TL626 alignment; actual pole numbers may vary significantly according to local topographical, environmental, and engineering requirements. (SDG&E 2014b).

Rationale for Elimination

Because installation and operation of a 69 kV power line of this length (approximately 30 miles) would not meet reliability needs of existing energy users due to voltage drop and other operational concerns, the screening criteria for project objectives and purpose and need are not met. With respect to environmental screening criteria, this alternative would not lessen or avoid impacts of either SDG&E's proposed wood-to-steel pole replacement of TL626 or the Forest Service Proposed Action which relocates TL626 out of the Cedar Creek riparian area, but rather would displace those effects to a partially new and longer right-of-way (ROW) with other sensitive resources. As a result it is likely that relocating TL626 along SR-79 would result in potentially

new and greater short-term and long-term environmental impacts and therefore this alternative has not been carried forward for further consideration in the EIR/EIS.

C.5.2 TL626 Alternative 2: Demand-Side Management Options

Description

TL626 Alternative 2 would eliminate TL626 from the Descanso Substation to the Santa Ysabel Substation for a distance of approximately 18.78 miles and instead would meet current demand for energy supplied by TL626 through demand side management options (roof-top solar, wind, generator use). All other aspects of SDG&E's proposed project would remain unchanged.

Rationale for Elimination

Reductions in demand through energy programs noted above are an important part of SDG&E's operations and are incorporated into their long-term peak load forecasts. However, as separate and stand-alone options to meet current energy demands provided by TL626, these options would not meet project objectives or purpose and need screening criteria as they would not provide the reliability needs to existing customers; therefore, this alternative has not been carried forward for further consideration in the EIR/EIS.

C.5.3 TL626 Location Alternatives

Description

Alternative locations to SDG&E's proposed project and the Forest Service Proposed Action for TL626 were requested during public scoping. Under this alternative, a portion of TL626 from the Descanso Substation to the Santa Ysabel Substation would be relocated to the west of the existing alignment or to the east of the Forest Service Proposed Action for TL626. All other aspects of SDG&E's proposed project would remain unchanged.

Rationale for Elimination

Consideration of additional relocation options for TL626 beyond the study corridor identified in the Forest Service Proposed Action or SDG&E's proposed project may not meet screening criteria for feasibility, project objectives, or purpose and need due to potential construction challenges within the surrounding undeveloped rugged terrain and the potential loss to existing customer service/reliability caused by moving TL626 as proposed under this alternative.

With respect to environmental screening criteria, this alternative would not lessen or avoid impacts of either SDG&E's proposed wood-to-steel pole replacement of TL626 or the Forest

Service Proposed Action which relocates TL626 out of the Cedar Creek riparian area, but rather would displace those effects to a newly established and longer ROW with other sensitive resources. As a result, it is likely that relocating TL626 to the west of the existing alignment or to the east of the Forest Service Proposed Action would result in potentially new and greater short-term and long-term environmental impacts. Therefore, further consideration of alternative locations for TL626 have not been carried forward for further consideration in the EIR/EIS.

C.5.4 C157 Partial Underground Alternative

Description

The C157 Partial Underground Alternative would relocate C157 underground within Skye Valley Road, and partially through the Pine Creek Wilderness Area where this road passes through that designated area, from approximately pole P278726 for about 3 miles before rejoining the existing alignment at approximately pole P278740 (see Figure C-4). All other aspects of SDG&E's proposed project would remain unchanged.

Rationale for Elimination

The C157 Partial Underground Alternative meets screening criteria for project objectives and purpose and need as it would likely meet the reliability needs for the existing energy user on Skye Valley Road. While terrain conditions along the existing roadway would likely allow for underground construction practices, undergrounding 3 miles of C157 within the existing roadway as proposed under this alternative would result in greater short-term construction-related impacts as well as long-term permanent environmental impacts caused by trenching activities verses pole-replacement activities. Therefore, this alternative would not substantially avoid or reduce environmental effects resulting from replacing existing wood poles as proposed. In addition, this alignment crosses through congressionally designated wilderness, in conflict with the Wilderness Act. As such, this alternative would not meet environmental screening criteria and has not been carried forward for further consideration in the EIR/EIS.

C.5.5 C157 Alternative Route 1: Corte Madera Ranch to Skye Valley Ranch

Description

C157 Alternative Route 1 would relocate a section of the existing C157 out of the Hauser Wilderness into a new alignment to the east of the existing alignment. The section of line that is replaced will be removed and the affected area restored. As shown in Figure C-4, the new alignment would start from Corte Madera Ranch, traveling west from existing 12 kV distribution line C442 along the southern

boundary of the Pine Creek Wilderness Area for approximately 7 miles to Skye Valley Ranch (SDG&E 2013). All other aspects of SDG&E's proposed project would remain unchanged.

Rationale for Elimination

This alternative would meet the reliability needs for existing energy users, and therefore screening criteria for project objectives and purpose and need, but may not meet screening criteria for feasibility due to potential construction challenges within the surrounding undeveloped rugged terrain. With respect to environmental screening criteria, this alternative would not lessen or avoid impacts of either SDG&E's proposed wood–to-steel pole replacement of C157 or the Forest Service Proposed Action which relocates C157 to an existing road ROW, but rather would displace those effects to a newly established and longer 7-mile ROW with other sensitive resources. As a result, it is likely that this alternative would result in potentially new and greater short-term and long-term environmental impacts; therefore this alternative has not been carried forward for further consideration in the EIR/EIS.

C.5.6 C157 Alternative Route 2: Los Pinos to Skye Valley Ranch

Description

C157 Alternative Route 2 would relocate a section of the existing C157 out of the Hauser Wilderness into a new alignment to the east of the existing alignment. The section of line that is replaced will be removed and the affected area restored. As shown in Figure C-4, the new alignment would start at Los Pinos traveling west from existing 12 kV distribution line C442 along Espinosa Creek for approximately 3 miles, then traveling south along the eastern boundary of the Pine Creek Wilderness Area for approximately 4 miles to Skye Valley Ranch. All other aspects of SDG&E's proposed project would remain unchanged.

Rationale for Elimination

This alternative would meet the reliability needs for existing energy users, and therefore screening criteria for project objectives and purpose and need, but may not meet screening criteria for feasibility due to potential construction challenges within the surrounding undeveloped rugged terrain. With respect to environmental screening criteria, this alternative would not lessen or avoid impacts of either SDG&E's proposed wood-to-steel pole replacement of C157 or the Forest Service Proposed Action which relocates C157 to an existing road ROW, but rather would displace those effects to a newly established and longer 7-mile ROW with other sensitive resources. As a result, it is likely that this alternative would result in potentially new and greater short-term and long-term environmental impacts; therefore this alternative has not been carried forward for further consideration in the EIR/EIS.

C.5.7 Underground All Tie-Lines and Circuits Alternative

Description

As proposed, the power line replacement projects would replace approximately 146 miles of 69 kV and 12 kV electric lines by replacing existing wood poles with steel poles as described in Section B.3.1 of this EIR/EIS. In addition, SDG&E's proposed project would relocate and underground approximately 13 miles of 12 kV electric lines. This alternative would underground 146 miles of existing 69 kV and 12 kV electric lines instead of the wood-to-steel pole replacement as proposed. All other aspects of SDG&E's proposed project would remain unchanged.

Rationale for Elimination

This alternative would likely meet the reliability needs for existing energy users, and therefore screening criteria for project objectives and purpose and need, but may not meet screening criteria for feasibility due to potential construction challenges within the surrounding undeveloped rugged terrain which in many areas exceeds the maximum allowable (12%) slope conditions that would allow for underground construction practices. Additionally, undergrounding of all existing electric transmission lines and circuits would have greater short-term construction-related as well as long-term permanent environmental impacts caused by trenching activities versus Pole-replacement activities. The estimated total permanent footprint to replace all poles as proposed is approximately 0.3 acre. Assuming the estimated permanent footprint of 4 acres required to underground approximately 13 miles of 12 kV electric lines as proposed, undergrounding all 146 miles of existing electric lines under this alternative would result in a significant increase in permanent disturbance/impact to sensitive resources over that caused by the proposed wood-to-steel pole replacement.

Although Forest Service policy and plan direction favors undergrounding new and existing electric lines under 12 kV, an exception is provided where resource impacts would be greater than overhead construction. The greater impact of undergrounding all existing electric transmission lines and circuits would not be consistent with agency policy.

Because this alternative may not meet feasibility screening criteria and would result in a substantial increase in the required permanent disturbance footprint while not substantially avoiding or reducing environmental effects resulting from replacing the existing wood poles as proposed, it has not been carried forward for further consideration in the EIR/EIS.

C.5.8 Underground Tie-lines and Circuits Located near Existing Roadways Alternative

Description

This alternative would underground approximately 45 miles of existing 69 kV and 12 kV electric lines located along existing roadways instead of the wood-to-steel pole replacement as proposed. More specifically, this alternative would underground approximately 7 miles of TL625 along Japatul Road and Sequan Truck Trail from the Descanso Substation to the Barrett Tap and the Barrett Tap to the Loveland Substation; approximately 12.7 miles of TL682 along SR-76 from the Rincon Substation to East Grade Road; approximately 9.7 miles of TL629 along River/Tanglewood Drive, Viejas Boulevard, SR-79, and Old Highway 80 from the Descanso Substation to the Glencliff Substation; and an additional 6 miles of TL629 along Old Highway 80 from the Glencliff Substation to the Cameron Tap. In addition, this alternative would include undergrounding approximately 5 miles of C442 along Pine Creek Road and Pine Creek Tract (north of I-8) and along Forest Service dirt road (Drd) 418611-1 (south of I-8). All other aspects of SDG&E's proposed project would remain unchanged.

Rationale for Elimination

This alternative meets screening criteria for project objectives and purpose and need as it would likely meet the reliability needs for existing energy users. While terrain conditions along existing roadways would likely allow for underground construction practices, portions of this alternative may not meet feasibility criteria due to roadway encroachment issues (i.e., California Department of Transportation and others), as well as other engineering issues associated with service to individual customers. Undergrounding 45 miles of electric lines within existing roadways as proposed under this alternative would result in an increase in short-term construction-related impacts over that caused by the proposed wood-to-steel pole replacement and would not substantially avoid or reduce environmental effects resulting from replacing existing wood poles as proposed. As such, this alternative would not meet environmental screening criteria. Because this alternative would not meet environmental screening criteria and may not meet feasibility screening criteria, it has not been carried forward for further consideration in the EIR/EIS. See C440 Additional Undergrounding Alternative that has been carried forward for further consideration in the EIR/EIS (see Section B.3.2).

C.5.9 Alternative Pole Design 1 – Height

Description

As proposed, the power line replacement projects would replace approximately 146 miles of existing 69 kV and 12 kV electric lines by replacing existing wood poles with weathered steel

poles. The maximum height of the proposed 69 kV new steel poles would be generally 100 feet (in some instances maximum height would range between 100–120 feet) with a typical diameter of approximately 30 inches. The maximum height of the proposed 12 kV new steel poles would be 50–60 feet with a typical diameter of approximately 14 inches. The use of taller poles allows for increased spacing of conductors, thereby reducing fire hazards, and also permits the use of heavier conductors which sway less under wind events.

This alternative would modify the proposed replacement poles by replacing existing 69 kV and 12 kV poles with poles of similar height to existing poles (existing maximum for 69 kV pole is approximately 90 feet and for 12 kV poles is 50 feet). In addition, under this alternative the similar poles would carry conductors of the same or similar capacity to the conductors that are on the existing wood poles. All other aspects of SDG&E's proposed project would remain unchanged; however, it may be necessary for the shorter poles to be designed with a wider diameter to accommodate increased stringing tension as noted below.

Rationale for Elimination

The power line replacement projects will need to meet prescribed safety and reliability standards. In so doing there are minimum conductor spacing and line clearances that need to be adhered to. It is presumed that SDG&E's proposed power line replacement projects including the new pole design meet required specifications. In addition, SDG&E's pole design increases the height of certain poles to allow for increased spans to avoid environmentally sensitive areas. In order for this alternative to meet conductor spacing and ground clearance requirements with the proposed new heavier conductor on shorter poles, the conductor will need to be strung with greater tension than what is now proposed. This may require the new shorter poles proposed under this alternative to be designed with additional steel and increased diameter relative to the poles now proposed for the project.

This alternative would not meet project objectives and purpose and need that allow for the under-build of 12 kV and 69 kV facilities as proposed or for the increased spans proposed to avoid certain sensitive resources. The removal of existing wood poles and the introduction of new weathered steel poles with similar vertical profile as proposed under this alternative would not substantially avoid or reduce environmental effects resulting from replacing the existing wood poles as proposed, which in general would resemble those experienced by viewers under existing conditions. Because this alternative, which would replace *all* poles with poles of similar height, would not substantially avoid or reduce environmental effects (and may increase environmental impacts resulting from a potential larger pole footprint) resulting from replacing the existing wood poles as proposed and may not meet project objectives and feasibility screening criteria, it has not been carried forward further consideration in the EIR/EIS. It should be noted that

consideration of the height of poles as mitigation in addressing certain project effects determined to be significant and adverse is considered in the EIR/EIS in Section D, Environmental Analysis.

C.5.10 Alternative Pole Design 2 – Material

Description

As proposed, the power line replacement projects would replace approximately 146 miles of existing 69 kV and 12 kV electric lines by replacing existing wood poles at a one-to-one ratio with weathered steel poles. This alternative would modify the proposed replacement poles by replacing existing 69 kV and 12 kV poles with poles made of wood or other composite material instead of the weathered steel poles as proposed. All other aspects of SDG&E's proposed project would remain unchanged.

Rationale for Elimination

This alternative does not meet screening criteria for project objectives and purpose and need as it would not implement the increased fire safety component of the expanded MSUP as proposed as the replacement of wood poles with the superior strength and fire resistance of the proposed steel poles relative to wood would not be implemented. This alternative would entail removing existing wood poles and introducing new wood or composite type poles which would not substantially avoid or reduce environmental effects resulting from replacing the existing wood poles as proposed. Under this alternative, views in general would resemble those experienced by viewers under existing conditions, as well as under SDG&E's proposed project where the proposed new weathered steel poles would develop a weathered patina on the surface of the poles which would resemble the hue and aesthetic of existing wood pole structures. Due to routine inspections and preventive maintenance activities, individual pole replacements with weathered steel poles have occurred within the project study area. As such, the use of composite material poles along alignments with steel poles already in place could increase visual impacts due to the use of different materials and the anticipated visual contrast in color and texture. Because this alternative does not meet project objectives and purpose and need screening criteria, and would not substantially avoid or reduce environmental effects resulting from replacing the existing wood poles as proposed, it has not been carried forward for further consideration in the EIR/EIS.

C.5.11 System Alternative 1: Consolidate TL6923 and TL625 along Sunrise Powerlink

Description

This alternative would remove portions of TL6923 and TL625 and co-locate along existing towers used for the Sunrise Powerlink in the vicinity of Barrett Lake, McAlmond Canyon

towards Lake Morena and up through Deer Horn Valley and Lyons valley. All other aspects of SDG&E's proposed project would remain unchanged.

Rationale for Elimination

This alternative does not meet screening criteria for feasibility as the underbuilding as proposed under this alternative cannot be supported by the current engineering design of towers used for the Sunrise Powerlink project. Because this alternative would not meet feasibility screening criteria, it has not been carried forward for further consideration in the EIR/EIS.

C.5.12 System Alternative 2: Additional Consolidation and Removal of Facilities

Description

This alternative would remove and consolidate lines to the extent feasible along with considering the use of dispersed generation (roof-top solar, wind, generator use). All other aspects of SDG&E's proposed project would remain unchanged.

Rationale for Elimination

The power lines and distribution circuits proposed for replacement have been in operation for decades and are needed to ensure continued electric service and reliability to local communities, residences, and government facilities within and adjacent to the CNF. It is anticipated that removal/consolidation of existing facilities and the use of dispersed generation would not feasibly provide the reliability needs of SDG&E as stated in their project objectives and the Forest Service's purpose and need. Therefore, this alternative has not been carried forward for further consideration in the EIR/EIS.

C.5.13 System Alternative 3: No-Wire Alternative

Description

This alternative would remove the 69 kV and 12 kV electric lines in the MSUP/PTC project area and would replace them with a microgrid system to serve electric users in the project area. A microgrid is a small-scale power grid that can operate independently or in conjunction with the area's main electrical grid.

Rationale for Elimination

The power lines and distribution circuits proposed for replacement have been in operation for decades and are needed to ensure continued electric service and reliability to local communities,

residences, and government facilities within and adjacent to the CNF. The existing system is considered the backbone to the SDG&E electrical grid system in central and eastern San Diego County. While an alternative microgrid system may meet environmental and project objective screening criteria, it would not meet feasibility criteria. Because microgrids are an emerging technology and are not a proven large-scale technology at this time, the use of this technology on a system backbone scale is not a viable alternative. Therefore, this alternative was determined not to meet the feasibility screening criteria and has not been carried forward for further consideration in the EIR/EIS.

C.5.14 System Alternative 4: Management and System Maintenance Oversight

Description

Under this alternative, wood poles would not be replaced with steel poles as proposed but rather fire hardening would be improved by increasing vegetation management and system maintenance oversight. All other aspects of SDG&E's proposed project would remain unchanged.

Rationale for Elimination

This alternative would not meet the project objectives or purpose and need as it would not implement the expanded scope of the MSUP as proposed to include the superior strength and fire resistance of steel poles nor implement the proposed undergrounding, relocation, consolidation, or avoidance of certain sensitive resources; therefore this alternative has not been carried forward for further consideration in the EIR/EIS.

C.5.15 System Alternative 5: Distributed Generation

Description

Under this alternative, wood poles would not be replaced with steel poles as proposed and instead this alternative would install distributed generation including but not limited to residential and commercial roof-top solar panels and other renewable distributed energy sources.

Rationale for Elimination

As described in Section C.5.2 under TL626 System Alternative 2, reductions in demand through energy programs are an important part of SDG&E's operations and are incorporated into their long-term peak load forecasts. However, as a single option to meet current energy demand provided by the five power lines and six distribution lines within this study area, the proposed alternative would not meet project objectives or purpose and need screening criteria as

distributed generation would not provide the reliability needs to existing customers. Therefore, this alternative has not been carried forward for further consideration in the EIR/EIS.

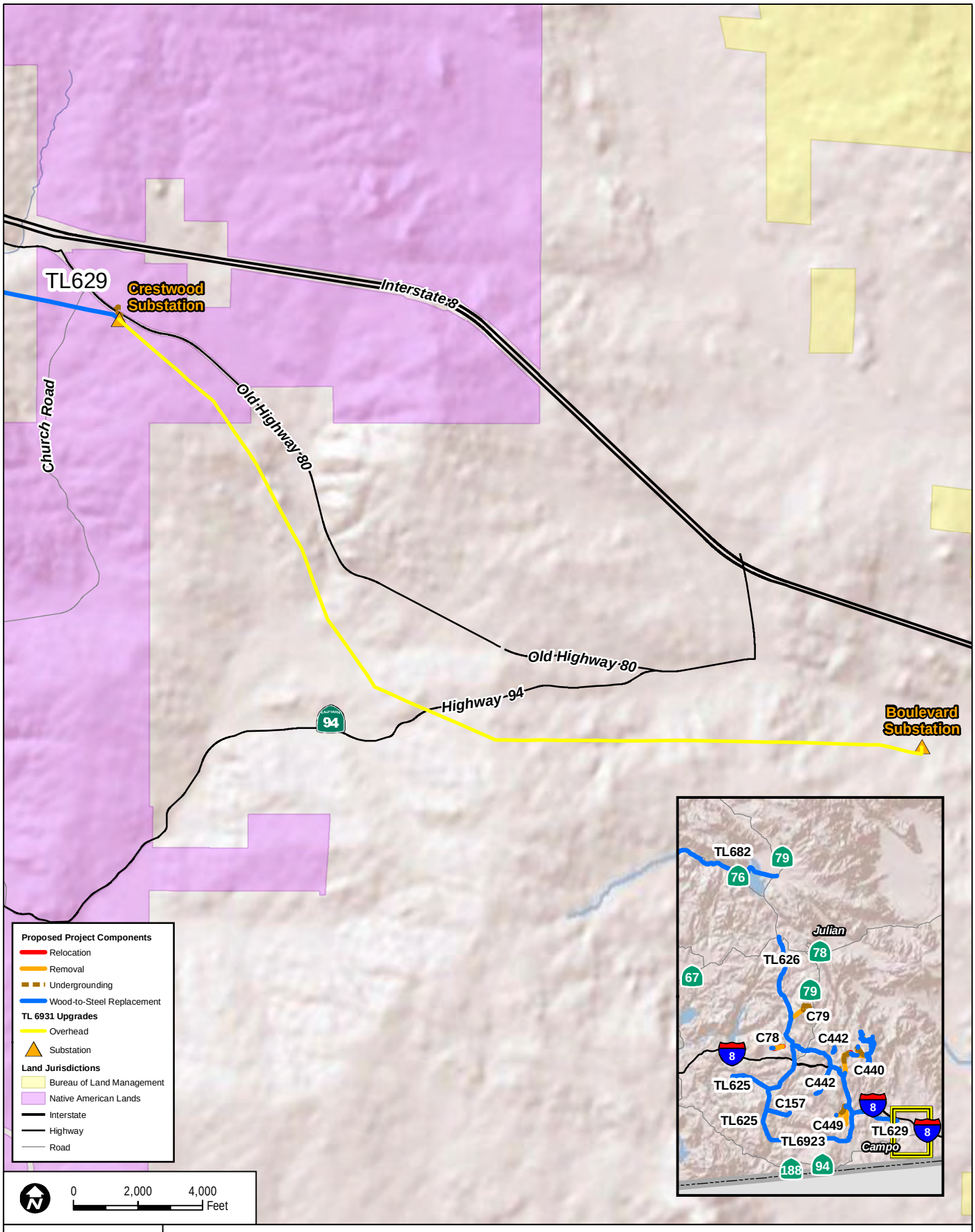
C.6 References

SDG&E (San Diego Gas & Electric). 2013. *Master Special Use Permit, Cleveland National Forest, Orange and San Diego Counties, California, Revised Plan of Development.* Prepared by Insignia Environmental. Encinitas, California: Insignia Environmental. April 2013. http://www.cpuc.ca.gov/environment/info/dudek/CNF/DR3Response.htm

SDG&E. 2014a. "Response A. 12-10-009 Cleveland National Forest Power Line Replacement Projects PTC ED Data Request 6 (Dated March 21, 2014)." April 3, 2014.

SDG&E. 2014b. SDG&E March 4, 2014. Partial Response A. 12-10-009 Cleveland National Forest Power Line Replacement Projects PTC ED Data Request 5 Dated February 5, 2014. ED-SDGE-005: Alternative 1. http://www.cpuc.ca.gov/environment/info/dudek/CNF/DR5_ResponseCombined.pdf

INTENTIONALLY LEFT BLANK



SOURCE: SDG&E 2011, 2014; USGS; SanGIS 2009, 2012; Bing Maps

DUDEK

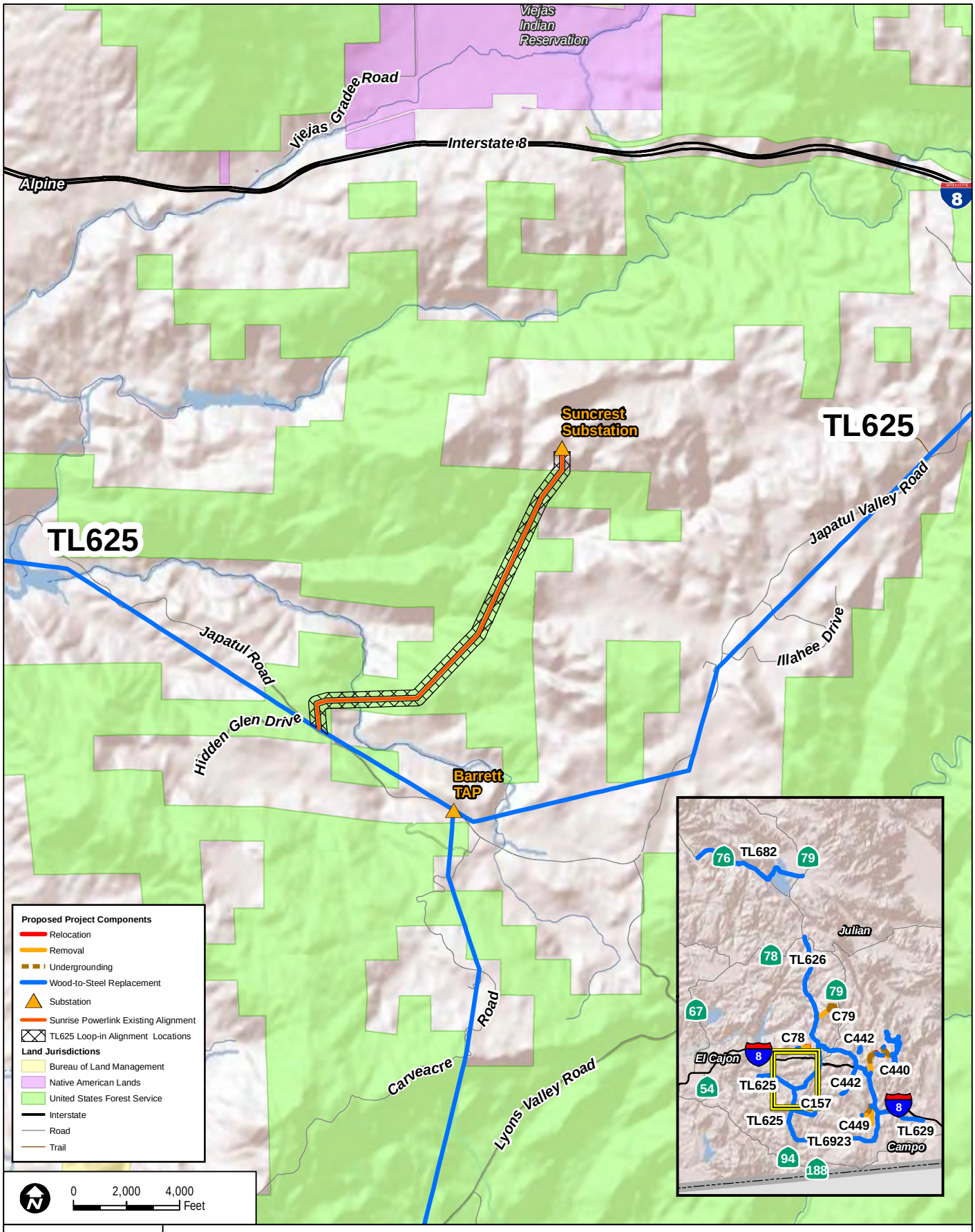
7014

FIGURE C-1

Remove TL626 from Service - TL6931 Upgrades

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



SOURCE: SDG&E 2011, 2014; USGS; SanGIS 2009, 2012; Bing Maps

DUDEK

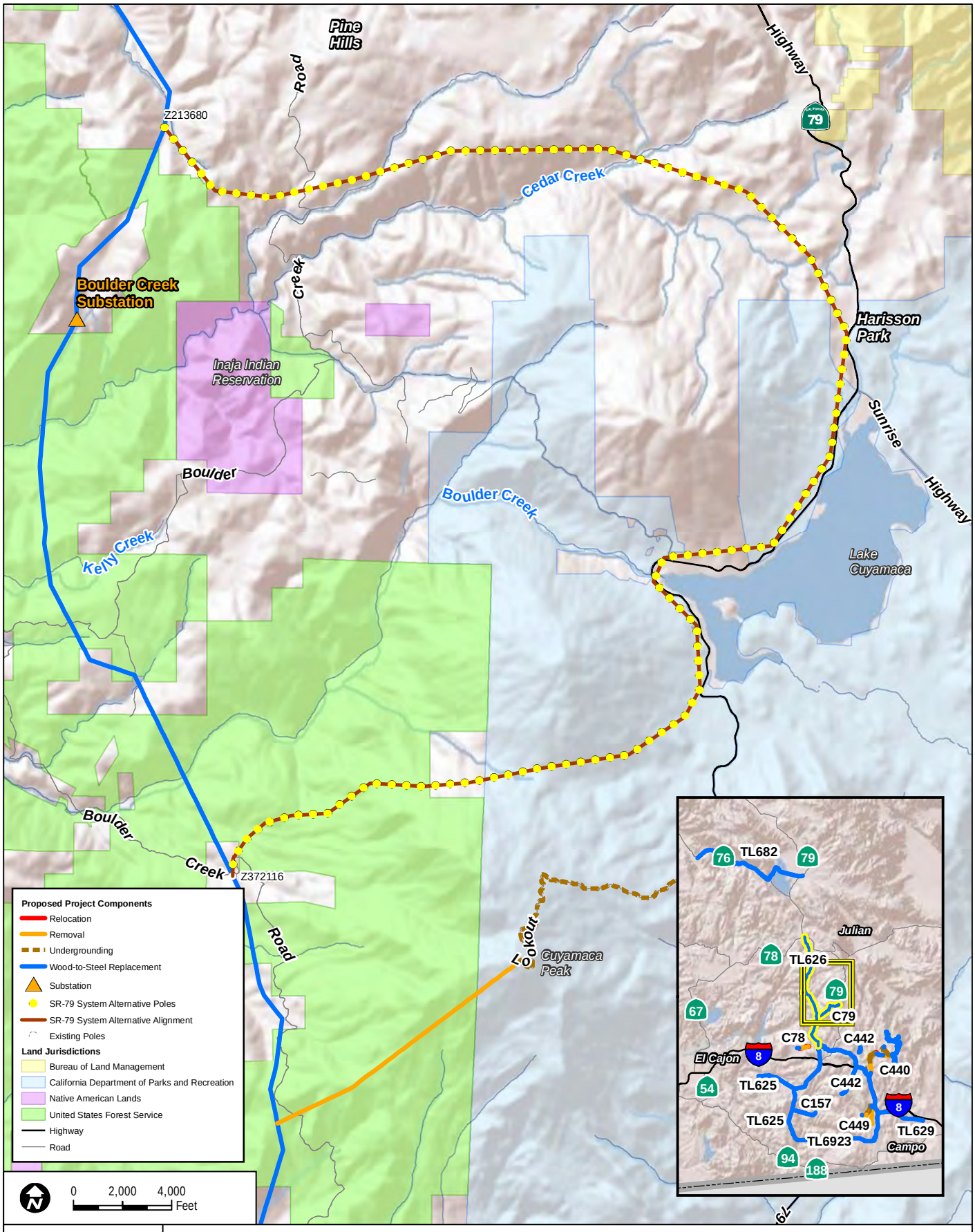
7014

FIGURE C-2

Remove TL626 from Service - TL625 Loop-in

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

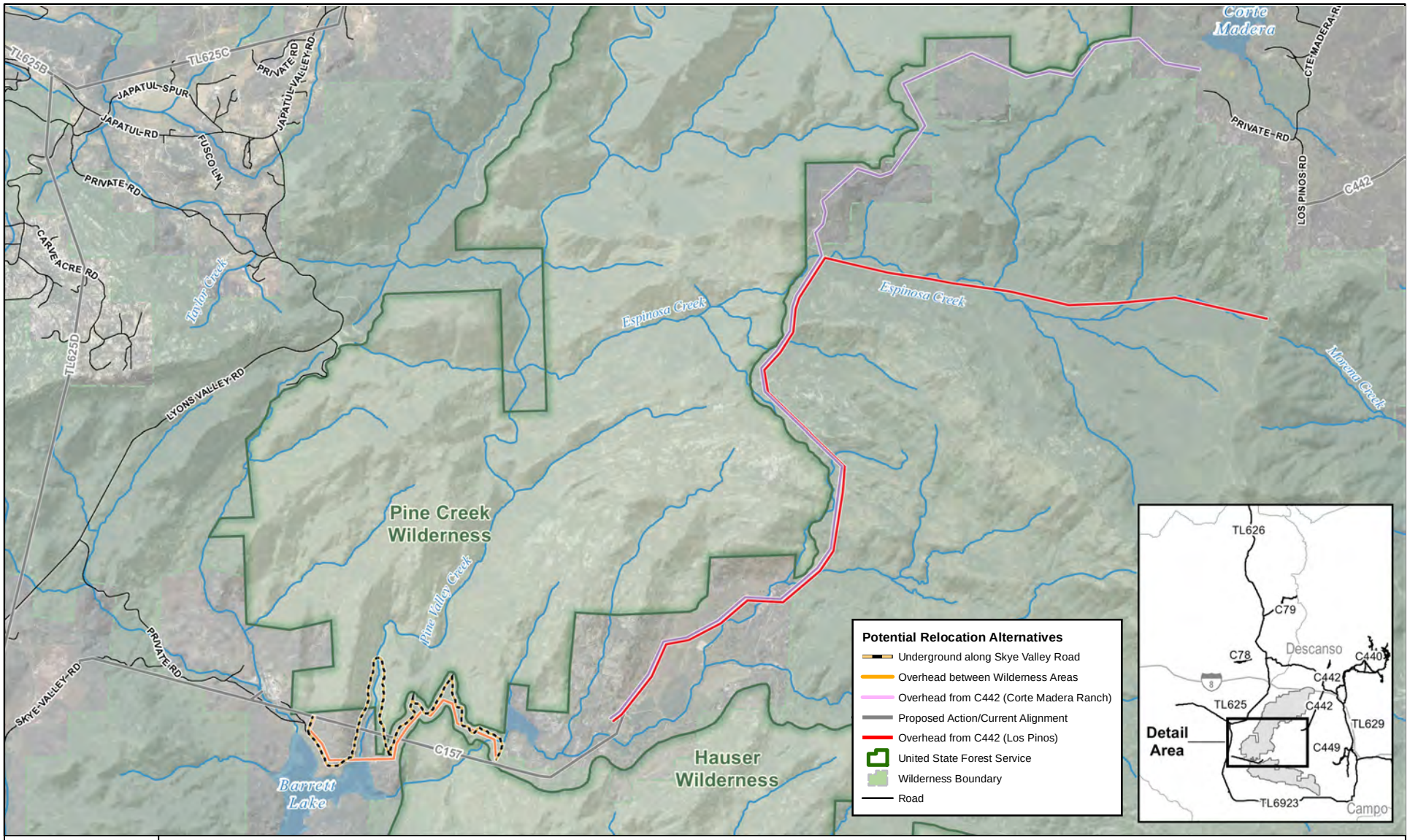
SOURCE: SDG&E 2011, 2014b; USGS; SanGIS 2009, 2012; Bing Maps

FIGURE C-3

TL626 Alternative 1: Relocate Along State Route 79 - Eliminated

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK



DUDEK

7014

SOURCE: SDG&E 2013

FIGURE C-4

C157 Overhead and Underground Alternatives - Eliminated

MASTER SPECIAL USE PERMIT AND PERMIT TO CONSTRUCT POWER LINE REPLACEMENT PROJECTS

INTENTIONALLY LEFT BLANK